

## NYSEG DAP 2026 - Oneonta

### PROJECT INFORMATION

|                                                  |                                         |                                              |                               |                                    |
|--------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-006730        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The NYSEG Distribution Automation Program was established to improve distribution reliability performance metrics by applying the principles of Fault Location, Isolation, and Service Restoration (FLISR) to reduce the scale of outages (e.g., through sectionalizing), improve the speed at which power can be restored to customers (e.g., through remote switching), or avoid outages altogether (e.g., through sequential reclosing). The core scope of the Distribution Automation Program entails the deployment of modern SCADA-enabled devices such as reclosers and switches – and the associated programming and communications upgrades – to distribution circuits at optimized locations, either in new locations, or replacing legacy equipment. The SCADA functionality of the new devices enables significant improvements in system operability and flexibility in response to disturbances when controlled by system operators and also lays the foundation for deployment of systems like Advanced Restoration and Automation (ARA) that can isolate faults and restore power without operator intervention. Additionally, these new devices allow for loading and operating status data to be transmitted to the Company, providing valuable historical data to system planners as well as enabling crucial visibility for system operators.

Background: The 2026 Oneonta Distribution Automation Project targets distribution circuits within NYSEG's Oneonta Division for improved FLISR capabilities, prioritized based on historical contribution to system SAIFI. Devices locations were selected to maximize SAIFI improvement by employing strategies such as:

- Limiting the number of customers between sectionalizing devices to 500
- Limiting the exposure (i.e., circuit length) between sectionalizing devices to 10 miles
- Deploying SCADA-operable/automated circuit ties to enable quick restoration
- Utilizing sequential reclosing to avoid outages from momentary faults

Prioritization is based on historical SAIFI performance at the division and station-level performance, rather than for individual circuits. This prioritization methodology intends to target areas with the greatest need for reliability improvements and where forming circuit ties can create mutual benefits between circuits and substations.

#### Project Scope:

The key components of the program include device deployment (SCADA reclosers, switches, etc.), reprogramming, and communication upgrades. These devices are strategically placed to create customer "zones", each with no more than 500 customers or ten miles of overhead line.

To date, ~114 SCADA devices have been installed on 48 circuits within the Oneonta division as part of the DAP program since its inception in 2019. In 2026 34 new SCADA devices will be installed on 22 Oneonta circuits (Bainbridge 012, Bell Ayre 212, Birdsall 022, Birdsall 082, Cooperstown 121, Cooperstown 123, Eaton 012, Edmeston 220, Gilbertsville 012, Guildford Center 012, Henry St 150, Henry St 151, New Berlin 012, Oriskany Falls 141, Oriskany Falls 142, Pierce Ave 203, Richfield Springs 012, Sand St 022, Sand St 042, Sand St 052, Unadilla 012, Unadilla 022).

#### Project Benefits:

The primary benefit of this project is the enhancement of system reliability and resiliency, as indicated by SAIFI and CAIDI performance metrics. By deploying SCADA-operable sectionalizing and circuit-tie devices, the project aims to:

- Reduce the scale of outages by increasing circuit sectionalizing points and limiting customer count to 500 between devices. (SAIFI benefit)
- Improve the speed at which power can be restored to customers by utilizing remote switching capabilities instead of dispatching field personnel to perform isolation and/or restoration switching operations manually. (CAIDI benefit)
- Avoid outages altogether by using sequential reclosing to automatically restore power in the event of a temporary fault. (SAIFI benefit)
- Reduce fault locating time by providing by field personnel by improving operational awareness and system visibility (CAIDI benefit)

In addition to improving reliability, the deployment of advanced tools and technology will improve the efficiency and quality of utility operations, including better data, monitoring, control, and management of the electrical grid. For example, the interval power flow data provided by the advanced devices can significantly improve the accuracy and practicality of system planning studies and will also support the development of more granular load forecasts. Additionally, the operational awareness and remote operability provided by the project will improve the efficiency of routine maintenance switching operations, reducing operational expenses.

**Project Risks and Mitigation Plan:**

1. Delays in Project Implementation: Project delays could lead to an increase in frequency and/or duration customer outages, resulting in worsening reliability performance. The project schedule could be impacted by field conditions, particularly in heavily wooded or environmentally sensitive areas, where it can be difficult to access infrastructure with heavy equipment. Weather delays are also a risk in distribution construction due to worker safety concerns. These risks will be addressed by incorporating contingency into our construction schedules. To mitigate this risk, the project team conducts thorough field scouting and feasibility assessments before finalizing device locations. Long lead-time equipment delays can also adversely impact project schedules. Equipment sourcing risks will be mitigated by identifying proposed equipment subject to long lead times and ordering such equipment proactively, as appropriate, to minimize the risk of project delays.

2. Budget Risks: Another risk is the possibility of budget overruns due to unexpected costs associated with device installation, reprogramming, or adding communications. To manage this risk, regular budget reviews and cost tracking are implemented to ensure the project remains within the allocated budget.

3. Technology Integration: There are risks associated with the integration of new devices with existing systems, which could lead to compatibility issues or operational disruptions. To mitigate this risk, the project involves close coordination with the Substation Automation group and other relevant teams to ensure seamless integration.

**Risk of No Action:**

If the proposed project scope is not executed, the Company must continue to rely on existing infrastructure to manage outage events. As a result, the frequency and duration of outages would likely continue at current levels or worsen, and the Company would miss out on an opportunity to provide a positive reliability benefit to affected customers.

Additionally, without the advanced tools and technologies proposed in the Distribution Automation (DA) program, the benefits to data, monitoring, control, and management of the electric grid would not be realized. This could lead to slower response times to outages, increased operating costs, and inefficiencies in distribution system planning and operations.

In summary, the risks of taking no action include stagnant or worsening reliability metrics, decreased customer satisfaction, and reduced operational efficiency.

**Project Alternatives:**

An alternative solution is manual operation of devices in the field. This involves installing additional sectionalizing and/or tie points, but to forgoes the inclusion of SCADA-operability and, instead, relies on manual operation to perform switching operations. Manual operation involves dispatching field personnel to manually control and manage the electric distribution system under the direction of system operators. This approach requires significant labor and generally leads to much slower response times during outages relative to remote operation. The cost of manual operation includes ongoing labor expenses, training, and the potential for higher operating costs due to inefficiencies and slower restoration times.

**Basis for Project Estimates**

Historical data and past project experiences were used to inform the cost estimates. By leveraging historical data, the project team can make more informed predictions about the costs involved in the current project. Furthermore, the project team conducts field scouting and feasibility assessments to identify any potential challenges or additional costs that might arise during the deployment.

Finally, a contingency budget was included to cover any unforeseen expenses that might arise during the project. This helps to ensure that the project remains within the allocated budget, even if unexpected costs are encountered.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 38           | \$ -        | \$ 38           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,018        | \$ -        | \$ 2,018        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 326          | \$ -        | \$ 326          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,257        | \$ -        | \$ 1,257        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 318          | \$ -        | \$ 318          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,957</b> | <b>\$ -</b> | <b>\$ 3,957</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total        | 2025        | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|--------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total</b> | <b>\$ 76</b> | <b>\$ -</b> | <b>\$ 76</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

## NYSEG DAP 2026 - Lancaster

### PROJECT INFORMATION

|                                                  |                                         |                                              |                               |                                    |
|--------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-006729        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The NYSEG Distribution Automation Program was established to improve distribution reliability performance metrics by applying the principles of Fault Location, Isolation, and Service Restoration (FLISR) to reduce the scale of outages (e.g., through sectionalizing), improve the speed at which power can be restored to customers (e.g., through remote switching), or avoid outages altogether (e.g., through sequential reclosing). The core scope of the Distribution Automation Program entails the deployment of modern SCADA-enabled devices such as reclosers and switches – and the associated programming and communications upgrades – to distribution circuits at optimized locations, either in new locations, or replacing legacy equipment. The SCADA functionality of the new devices enables significant improvements in system operability and flexibility in response to disturbances when controlled by system operators and also lays the foundation for deployment of systems like Advanced Restoration and Automation (ARA) that can isolate faults and restore power without operator intervention. Additionally, these new devices allow for loading and operating status data to be transmitted to the Company, providing valuable historical data to system planners as well as enabling crucial visibility for system operators.

Background: The 2026 Lancaster Distribution Automation Project targets distribution circuits within NYSEG's Lancaster Division for improved FLISR capabilities, prioritized based on historical contribution to system SAIFI. Devices locations were selected to maximize SAIFI improvement by employing strategies such as:

- Limiting the number of customers between sectionalizing devices to 500
- Limiting the exposure (i.e., circuit length) between sectionalizing devices to 10 miles
- Deploying SCADA-operable/automated circuit ties to enable quick restoration
- Utilizing sequential reclosing to avoid outages from momentary faults

Prioritization is based on historical SAIFI performance at the division and station-level performance, rather than for individual circuits. This prioritization methodology intends to target areas with the greatest need for reliability improvements and where forming circuit ties can create mutual benefits between circuits and substations.

#### Project Scope:

The key components of the program include device deployment (SCADA reclosers, switches, etc.), reprogramming, and communication upgrades. These devices are strategically placed to create customer "zones", each with no more than 500 customers or ten miles of overhead line.

To date, ~491 SCADA devices have been installed on 99 circuits within the Lancaster division as part of the DAP program since its inception in 2019. In 2026, 22 SCADA devices will be installed on 14 Lancaster circuits (Cowlesville 451, Dick Rd 390, Dick Rd 391, Dick Rd 392, Dick Rd 393, Dick Rd 396, Ebenezer 360, Ellicott Rd 237, Ellington 164, Hamburg 293, Hamburg 294, Legion Dr 153, Legion Dr 154, Rein Rd 272).

#### Project Benefits:

The primary benefit of this project is the enhancement of system reliability and resiliency, as indicated by SAIFI and CAIDI performance metrics. By deploying SCADA-operable sectionalizing and circuit-tie devices, the project aims to:

- Reduce the scale of outages by increasing circuit sectionalizing points and limiting customer count to 500 between devices. (SAIFI benefit)
- Improve the speed at which power can be restored to customers by utilizing remote switching capabilities instead of dispatching field personnel to perform isolation and/or restoration switching operations manually. (CAIDI benefit)
- Avoid outages altogether by using sequential reclosing to automatically restore power in the event of a temporary fault. (SAIFI benefit)
- Reduce fault locating time by providing by field personnel by improving operational awareness and system visibility (CAIDI benefit)

In addition to improving reliability, the deployment of advanced tools and technology will improve the efficiency and quality of utility operations, including better data, monitoring, control, and management of the electrical grid. For example, the interval power flow data provided by the advanced devices can significantly improve the accuracy and practicality of system planning studies and will also support the development of more granular load forecasts. Additionally, the operational awareness and remote operability provided by the project will improve the efficiency of routine maintenance switching operations, reducing operational expenses.



**Project Risks and Mitigation Plan:**

1. Delays in Project Implementation: Project delays could lead to an increase in frequency and/or duration customer outages, resulting in worsening reliability performance. The project schedule could be impacted by field conditions, particularly in heavily wooded or environmentally sensitive areas, where it can be difficult to access infrastructure with heavy equipment. Weather delays are also a risk in distribution construction due to worker safety concerns. These risks will be addressed by incorporating contingency into our construction schedules. To mitigate this risk, the project team conducts thorough field scouting and feasibility assessments before finalizing device locations. Long lead-time equipment delays can also adversely impact project schedules. Equipment sourcing risks will be mitigated by identifying proposed equipment subject to long lead times and ordering such equipment proactively, as appropriate, to minimize the risk of project delays.

2. Budget Risks: Another risk is the possibility of budget overruns due to unexpected costs associated with device installation, reprogramming, or adding communications. To manage this risk, regular budget reviews and cost tracking are implemented to ensure the project remains within the allocated budget.

3. Technology Integration: There are risks associated with the integration of new devices with existing systems, which could lead to compatibility issues or operational disruptions. To mitigate this risk, the project involves close coordination with the Substation Automation group and other relevant teams to ensure seamless integration.

**Risk of No Action:**

If the proposed project scope is not executed, the Company must continue to rely on existing infrastructure to manage outage events. As a result, the frequency and duration of outages would likely continue at current levels or worsen, and the Company would miss out on an opportunity to provide a positive reliability benefit to affected customers.

Additionally, without the advanced tools and technologies proposed in the Distribution Automation (DA) program, the benefits to data, monitoring, control, and management of the electric grid would not be realized. This could lead to slower response times to outages, increased operating costs, and inefficiencies in distribution system planning and operations.

In summary, the risks of taking no action include stagnant or worsening reliability metrics, decreased customer satisfaction, and reduced operational efficiency.

**Project Alternatives:**

An alternative solution is manual operation of devices in the field. This involves installing additional sectionalizing and/or tie points, but to forgoes the inclusion of SCADA-operability and, instead, relies on manual operation to perform switching operations. Manual operation involves dispatching field personnel to manually control and manage the electric distribution system under the direction of system operators. This approach requires significant labor and generally leads to much slower response times during outages relative to remote operation. The cost of manual operation includes ongoing labor expenses, training, and the potential for higher operating costs due to inefficiencies and slower restoration times.

**Basis for Project Estimates**

Historical data and past project experiences were used to inform the cost estimates. By leveraging historical data, the project team can make more informed predictions about the costs involved in the current project. Furthermore, the project team conducts field scouting and feasibility assessments to identify any potential challenges or additional costs that might arise during the deployment.

Finally, a contingency budget was included to cover any unforeseen expenses that might arise during the project. This helps to ensure that the project remains within the allocated budget, even if unexpected costs are encountered.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 25           | \$ -        | \$ 25           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,306        | \$ -        | \$ 1,306        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 211          | \$ -        | \$ 211          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 813          | \$ -        | \$ 813          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 206          | \$ -        | \$ 206          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,560</b> | <b>\$ -</b> | <b>\$ 2,560</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total        | 2025        | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|--------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total</b> | <b>\$ 49</b> | <b>\$ -</b> | <b>\$ 49</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

## NYSEG DAP 2026 - Geneva

### PROJECT INFORMATION

|                                                  |                                         |                                              |                               |                                    |
|--------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-007240        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The NYSEG Distribution Automation Program was established to improve distribution reliability performance metrics by applying the principles of Fault Location, Isolation, and Service Restoration (FLISR) to reduce the scale of outages (e.g., through sectionalizing), improve the speed at which power can be restored to customers (e.g., through remote switching), or avoid outages altogether (e.g., through sequential reclosing). The core scope of the Distribution Automation Program entails the deployment of modern SCADA-enabled devices such as reclosers and switches – and the associated programming and communications upgrades – to distribution circuits at optimized locations, either in new locations, or replacing legacy equipment. The SCADA functionality of the new devices enables significant improvements in system operability and flexibility in response to disturbances when controlled by system operators and also lays the foundation for deployment of systems like Advanced Restoration and Automation (ARA) that can isolate faults and restore power without operator intervention. Additionally, these new devices allow for loading and operating status data to be transmitted to the Company, providing valuable historical data to system planners as well as enabling crucial visibility for system operators.

Background: The 2026 Geneva Distribution Automation Project targets distribution circuits within NYSEG's Geneva Division for improved FLISR capabilities, prioritized based on historical contribution to system SAIFI. Devices locations were selected to maximize SAIFI improvement by employing strategies such as:

- Limiting the number of customers between sectionalizing devices to 500
- Limiting the exposure (i.e., circuit length) between sectionalizing devices to 10 miles
- Deploying SCADA-operable/automated circuit ties to enable quick restoration
- Utilizing sequential reclosing to avoid outages from momentary faults

Prioritization is based on historical SAIFI performance at the division and station-level performance, rather than for individual circuits. This prioritization methodology intends to target areas with the greatest need for reliability improvements and where forming circuit ties can create mutual benefits between circuits and substations.

#### Project Scope:

The key components of the program include device deployment (SCADA reclosers, switches, etc.), reprogramming, and communication upgrades. These devices are strategically placed to create customer "zones", each with no more than 500 customers or ten miles of overhead line.

To date, ~151 SCADA devices have been installed on 42 circuits within the Geneva Division as part of the Distribution Automation Program since its inception in 2019. In 2026, 20 SCADA devices will be installed on 7 Geneva circuits (Clyde 202, Clyde 203, Dresden 201, Phelps 201, Waterloo 201, Waterloo 202, Waterloo 203)

#### Project Benefits:

The primary benefit of this project is the enhancement of system reliability and resiliency, as indicated by SAIFI and CAIDI performance metrics. By deploying SCADA-operable sectionalizing and circuit-tie devices, the project aims to:

- Reduce the scale of outages by increasing circuit sectionalizing points and limiting customer count to 500 between devices. (SAIFI benefit)
- Improve the speed at which power can be restored to customers by utilizing remote switching capabilities instead of dispatching field personnel to perform isolation and/or restoration switching operations manually. (CAIDI benefit)
- Avoid outages altogether by using sequential reclosing to automatically restore power in the event of a temporary fault. (SAIFI benefit)
- Reduce fault locating time by providing by field personnel by improving operational awareness and system visibility (CAIDI benefit)

In addition to improving reliability, the deployment of advanced tools and technology will improve the efficiency and quality of utility operations, including better data, monitoring, control, and management of the electrical grid. For example, the interval power flow data provided by the advanced devices can significantly improve the accuracy and practicality of system planning studies and will also support the development of more granular load forecasts. Additionally, the operational awareness and remote operability provided by the project will improve the efficiency of routine maintenance switching operations, reducing operational expenses.

**Project Risks and Mitigation Plan:**

1. Delays in Project Implementation: Project delays could lead to an increase in frequency and/or duration customer outages, resulting in worsening reliability performance. The project schedule could be impacted by field conditions, particularly in heavily wooded or environmentally sensitive areas, where it can be difficult to access infrastructure with heavy equipment. Weather delays are also a risk in distribution construction due to worker safety concerns. These risks will be addressed by incorporating contingency into our construction schedules. To mitigate this risk, the project team conducts thorough field scouting and feasibility assessments before finalizing device locations. Long lead-time equipment delays can also adversely impact project schedules. Equipment sourcing risks will be mitigated by identifying proposed equipment subject to long lead times and ordering such equipment proactively, as appropriate, to minimize the risk of project delays.

2. Budget Risks: Another risk is the possibility of budget overruns due to unexpected costs associated with device installation, reprogramming, or adding communications. To manage this risk, regular budget reviews and cost tracking are implemented to ensure the project remains within the allocated budget.

3. Technology Integration: There are risks associated with the integration of new devices with existing systems, which could lead to compatibility issues or operational disruptions. To mitigate this risk, the project involves close coordination with the Substation Automation group and other relevant teams to ensure seamless integration.

**Risk of No Action:**

If the proposed project scope is not executed, the Company must continue to rely on existing infrastructure to manage outage events. As a result, the frequency and duration of outages would likely continue at current levels or worsen, and the Company would miss out on an opportunity to provide a positive reliability benefit to affected customers.

Additionally, without the advanced tools and technologies proposed in the Distribution Automation (DA) program, the benefits to data, monitoring, control, and management of the electric grid would not be realized. This could lead to slower response times to outages, increased operating costs, and inefficiencies in distribution system planning and operations.

In summary, the risks of taking no action include stagnant or worsening reliability metrics, decreased customer satisfaction, and reduced operational efficiency.

**Project Alternatives:**

An alternative solution is manual operation of devices in the field. This involves installing additional sectionalizing and/or tie points, but to forgoes the inclusion of SCADA-operability and, instead, relies on manual operation to perform switching operations. Manual operation involves dispatching field personnel to manually control and manage the electric distribution system under the direction of system operators. This approach requires significant labor and generally leads to much slower response times during outages relative to remote operation. The cost of manual operation includes ongoing labor expenses, training, and the potential for higher operating costs due to inefficiencies and slower restoration times.

**Basis for Project Estimates**

Historical data and past project experiences were used to inform the cost estimates. By leveraging historical data, the project team can make more informed predictions about the costs involved in the current project. Furthermore, the project team conducts field scouting and feasibility assessments to identify any potential challenges or additional costs that might arise during the deployment.

Finally, a contingency budget was included to cover any unforeseen expenses that might arise during the project. This helps to ensure that the project remains within the allocated budget, even if unexpected costs are encountered.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 22           | \$ -        | \$ 22           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,187        | \$ -        | \$ 1,187        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 192          | \$ -        | \$ 192          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 739          | \$ -        | \$ 739          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 187          | \$ -        | \$ 187          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,327</b> | <b>\$ -</b> | <b>\$ 2,327</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total        | 2025        | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|--------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total</b> | <b>\$ 45</b> | <b>\$ -</b> | <b>\$ 45</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

## NYSEG DAP 2026 - Elmira

### PROJECT INFORMATION

|                                                  |                                         |                                              |                               |                                    |
|--------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-006731        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The NYSEG Distribution Automation Program was established to improve distribution reliability performance metrics by applying the principles of Fault Location, Isolation, and Service Restoration (FLISR) to reduce the scale of outages (e.g., through sectionalizing), improve the speed at which power can be restored to customers (e.g., through remote switching), or avoid outages altogether (e.g., through sequential reclosing). The core scope of the Distribution Automation Program entails the deployment of modern SCADA-enabled devices such as reclosers and switches – and the associated programming and communications upgrades – to distribution circuits at optimized locations, either in new locations, or replacing legacy equipment. The SCADA functionality of the new devices enables significant improvements in system operability and flexibility in response to disturbances when controlled by system operators and also lays the foundation for deployment of systems like Advanced Restoration and Automation (ARA) that can isolate faults and restore power without operator intervention. Additionally, these new devices allow for loading and operating status data to be transmitted to the Company, providing valuable historical data to system planners as well as enabling crucial visibility for system operators.

Background: The 2026 Elmira Distribution Automation Project targets distribution circuits within NYSEG's Elmira Division for improved FLISR capabilities, prioritized based on historical contribution to system SAIFI. Devices locations were selected to maximize SAIFI improvement by employing strategies such as:

- Limiting the number of customers between sectionalizing devices to 500
- Limiting the exposure (i.e., circuit length) between sectionalizing devices to 10 miles
- Deploying SCADA-operable/automated circuit ties to enable quick restoration
- Utilizing sequential reclosing to avoid outages from momentary faults

Prioritization is based on historical SAIFI performance at the division and station-level performance, rather than for individual circuits. This prioritization methodology intends to target areas with the greatest need for reliability improvements and where forming circuit ties can create mutual benefits between circuits and substations.

#### Project Scope:

The key components of the program include device deployment (SCADA reclosers, switches, etc.), reprogramming, and communication upgrades. These devices are strategically placed to create customer "zones", each with no more than 500 customers or ten miles of overhead line.

To date, ~39 SCADA devices have been installed on 39 circuits within the Elmira Division as part of the Distribution Automation Program since its inception in 2019. In 2026, 19 SCADA devices will be installed on 15 Elmira circuits (14th St 117, 14th St 119, Broad St 301, Fulton St 221, Fulton St 222, Hillcrest Rd 316, Kane St 207, Kane St 208, Keuka Elmira 203, Madison Ave 385, New Corning 391, Philo Rd 329, Philo Rd 330, Tuttle Place 143, Woodlawn Ave 183).

#### Project Benefits:

The primary benefit of this project is the enhancement of system reliability and resiliency, as indicated by SAIFI and CAIDI performance metrics. By deploying SCADA-operable sectionalizing and circuit-tie devices, the project aims to:

- Reduce the scale of outages by increasing circuit sectionalizing points and limiting customer count to 500 between devices. (SAIFI benefit)
- Improve the speed at which power can be restored to customers by utilizing remote switching capabilities instead of dispatching field personnel to perform isolation and/or restoration switching operations manually. (CAIDI benefit)
- Avoid outages altogether by using sequential reclosing to automatically restore power in the event of a temporary fault. (SAIFI benefit)
- Reduce fault locating time by providing by field personnel by improving operational awareness and system visibility (CAIDI benefit)

In addition to improving reliability, the deployment of advanced tools and technology will improve the efficiency and quality of utility operations, including better data, monitoring, control, and management of the electrical grid. For example, the interval power flow data provided by the advanced devices can significantly improve the accuracy and practicality of system planning studies and will also support the development of more granular load forecasts. Additionally, the operational awareness and remote operability provided by the project will improve the efficiency of routine maintenance switching operations, reducing operational expenses.

**Project Risks and Mitigation Plan:**

1. Delays in Project Implementation: Project delays could lead to an increase in frequency and/or duration customer outages, resulting in worsening reliability performance. The project schedule could be impacted by field conditions, particularly in heavily wooded or environmentally sensitive areas, where it can be difficult to access infrastructure with heavy equipment. Weather delays are also a risk in distribution construction due to worker safety concerns. These risks will be addressed by incorporating contingency into our construction schedules. To mitigate this risk, the project team conducts thorough field scouting and feasibility assessments before finalizing device locations. Long lead-time equipment delays can also adversely impact project schedules. Equipment sourcing risks will be mitigated by identifying proposed equipment subject to long lead times and ordering such equipment proactively, as appropriate, to minimize the risk of project delays.

2. Budget Risks: Another risk is the possibility of budget overruns due to unexpected costs associated with device installation, reprogramming, or adding communications. To manage this risk, regular budget reviews and cost tracking are implemented to ensure the project remains within the allocated budget.

3. Technology Integration: There are risks associated with the integration of new devices with existing systems, which could lead to compatibility issues or operational disruptions. To mitigate this risk, the project involves close coordination with the Substation Automation group and other relevant teams to ensure seamless integration.

**Risk of No Action:**

If the proposed project scope is not executed, the Company must continue to rely on existing infrastructure to manage outage events. As a result, the frequency and duration of outages would likely continue at current levels or worsen, and the Company would miss out on an opportunity to provide a positive reliability benefit to affected customers.

Additionally, without the advanced tools and technologies proposed in the Distribution Automation (DA) program, the benefits to data, monitoring, control, and management of the electric grid would not be realized. This could lead to slower response times to outages, increased operating costs, and inefficiencies in distribution system planning and operations.

In summary, the risks of taking no action include stagnant or worsening reliability metrics, decreased customer satisfaction, and reduced operational efficiency.

**Project Alternatives:**

An alternative solution is manual operation of devices in the field. This involves installing additional sectionalizing and/or tie points, but to forgoes the inclusion of SCADA-operability and, instead, relies on manual operation to perform switching operations. Manual operation involves dispatching field personnel to manually control and manage the electric distribution system under the direction of system operators. This approach requires significant labor and generally leads to much slower response times during outages relative to remote operation. The cost of manual operation includes ongoing labor expenses, training, and the potential for higher operating costs due to inefficiencies and slower restoration times.

**Basis for Project Estimates**

Historical data and past project experiences were used to inform the cost estimates. By leveraging historical data, the project team can make more informed predictions about the costs involved in the current project. Furthermore, the project team conducts field scouting and feasibility assessments to identify any potential challenges or additional costs that might arise during the deployment.

Finally, a contingency budget was included to cover any unforeseen expenses that might arise during the project. This helps to ensure that the project remains within the allocated budget, even if unexpected costs are encountered.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 21           | \$ -        | \$ 21           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,128        | \$ -        | \$ 1,128        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 182          | \$ -        | \$ 182          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 702          | \$ -        | \$ 702          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 178          | \$ -        | \$ 178          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,211</b> | <b>\$ -</b> | <b>\$ 2,211</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total        | 2025        | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|--------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total</b> | <b>\$ 43</b> | <b>\$ -</b> | <b>\$ 43</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |





# **RG&E Electric Resiliency**

## Resiliency

### PROJECT INFORMATION

|                                       |                                         |                                                |                                       |                                        |
|---------------------------------------|-----------------------------------------|------------------------------------------------|---------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-000072        | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Gay, Ruben | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing         | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Resiliency program for RGE focuses on two major objectives. The primary objective is to prevent and limit the scope and impact of outages, particularly during storm events. The secondary objective is the ability to expediently restore power after a significant outage event.

Trends of increasingly violent weather events must be considered. Climate change and the rise in intensity of storm events pose a serious threat to our power distribution networks. Systems built out over the last century are not designed to handle such powerful events. The aging condition and resulting impacts to asset condition mean that some older circuits (ex. Rural/Isolated) are particularly vulnerable to extended outages due to major pole, conductor, cable, or device damage.

The New York State Department of Public Service Staff 2018 Storm Report – Recommendation 88 calls for “all electric utilities to submit an actionable plan by July 1, 2019, which details future storm hardening measures including a budget, timeline, and major performance benchmarks.” The Resiliency program for RGE (The company) is a major part of the response to NYS DPS Recommendation 88. The company experienced 42 between 2012-2018. The company also averaged 40 minor storms per year over this same period. The company believe that outage duration and effectiveness of the utility’s response to storms will be primary barometers for customer satisfaction.

In response, RGE has developed a proactive and reliability focused Resiliency program. For the purposes of this paper, the term ‘Storm Resiliency’ and ‘Resiliency’ are interchangeable. From the criteria for circuit selection all the way through narrowing down circuit-specific upgrades, reliability and outage data including storm events are utilized. Developing a deeper understanding of what resiliency means is critical to defining the objectives of the program.

#### Project Scope:

The project is designed to address identified deficiencies in the worst-performing circuits through a three-pronged approach:

- 1.Hardening: Improvement of system infrastructure by using more robust construction practices and materials in compliance with AVANGRID’s Distribution Resiliency Guide
- 2.Automation: Installation of SCADA devices to segment long circuits and increase speed of power restoration.
- 3.Topology: Circuit-specific combination of actions including upgrading lines, increasing restoration ability by increasing feeder ties and switching capabilities (with Automation), and enabling further segmentation of circuits

Based on historical data, approximately three resiliency circuits a year will be proposed and they will be defined when more reliability information becomes available. For example the circuits for 2028 (year N) will be determined in 2026 (year N-2) by using reliability data from 2023-2025.

#### Project Benefits:

The resiliency project mitigates the risk of loss of load in the study area, providing significant value to customers through avoided interruptions and to the company through avoided restoration costs and the replacement of damaged distribution infrastructure. Here are the specific benefits of the three-pronged approach:

- 1.Hardening: Enhances system infrastructure by using robust construction practices and materials, in line with AVANGRID’s Distribution Resiliency Guide.
- 2.Automation: This aspect of the resiliency program includes the following:
  - Enhanced reliability and quality of supply through improved network automation
  - Efficient fault management
  - Quick isolation of faulted sections and restoration in under 5 minutes
  - Cost-effective operations based on optimal deployment of automation devices
  - Preparing the network for future electrification, decarbonization, and increased renewable energy production.
- 3.Topology: Limits the number of customers affected during outages.

**Project Risks and Mitigation Plan:**

Risk: Wrongful Prioritization of Circuits: In the realm of resiliency projects, a significant challenge lies in the potentially erroneous prioritization of circuits. Initially high-priority circuits might not be the most critical ones during unforeseen events. For example, a major storm hitting an unexpected area could shift the importance to a different set of circuits. Mitigation: The rankings for these projects may need constant reevaluation, potentially varying from year to year, or even week to week.

**Risk of No Action:**

If the Resiliency program is not undertaken, the consequences include decreased reliability, higher operational costs, and an inability to meet future demands. Financial impacts involve increased costs due to inefficient fault management and manual operations.

Stakeholders, including customers, shareholders, and local communities, would be negatively affected by continued outages and poor quality of supply. Opportunities for improved reliability, customer satisfaction, and alignment with corporate sustainability goals would be missed.

**Project Alternatives:**

Resiliency is a program mandated by the Public Service Commission(PSC). During planning analysis several alternatives on each circuit will be analyzed.

**Basis for Project Estimates**

Estimates were based on historical resiliency circuits at RGE. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021             | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 1,325         | \$ 177          | \$ 286           | \$ 181          | \$ 229          | \$ 452          |  |  |
| # CIAC                 | \$ -999          | \$ -            | \$ -             | \$ -395         | \$ -552         | \$ -53          |  |  |
| # External Services    | \$ 21,363        | \$ 3,089        | \$ 5,741         | \$ 4,819        | \$ 3,363        | \$ 4,351        |  |  |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 738           | \$ 52           | \$ 143           | \$ 199          | \$ 284          | \$ 60           |  |  |
| # Internal, Overheads  | \$ 2,942         | \$ 528          | \$ 633           | \$ 468          | \$ 523          | \$ 790          |  |  |
| # Materials            | \$ 11,241        | \$ 2,311        | \$ 2,024         | \$ 1,493        | \$ 3,234        | \$ 2,178        |  |  |
| # Overheads - External | \$ 6,577         | \$ 874          | \$ 1,236         | \$ 1,184        | \$ 1,535        | \$ 1,748        |  |  |
| <b>Total</b>           | <b>\$ 43,187</b> | <b>\$ 7,031</b> | <b>\$ 10,063</b> | <b>\$ 7,950</b> | <b>\$ 8,616</b> | <b>\$ 9,527</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------|-------|------|------|------|------|------|--|--|
| Outside Services | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Materials        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Other O&M        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 4           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 5           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 6           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 7           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 8           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026        | 2027        | 2028        | 2029            | 2030            | 2031             |
|------------------------|------------------|-----------------|-------------|-------------|-------------|-----------------|-----------------|------------------|
| # AFUDC                | \$ 361           | \$ 361          | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -             |
| # CIAC                 | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -             |
| # External Services    | \$ 31,112        | \$ 3,108        | \$ -        | \$ -        | \$ -        | \$ 8,887        | \$ 8,930        | \$ 10,188        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -             |
| # Internal, Labor      | \$ -752          | \$ -752         | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -             |
| # Internal, Overheads  | \$ 843           | \$ -56          | \$ -        | \$ -        | \$ -        | \$ 294          | \$ 278          | \$ 326           |
| # Materials            | \$ -1,105        | \$ -1,105       | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -             |
| # Overheads - External | \$ 2,279         | \$ 417          | \$ -        | \$ -        | \$ -        | \$ 610          | \$ 576          | \$ 676           |
| <b>Total</b>           | <b>\$ 32,739</b> | <b>\$ 1,974</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 9,790</b> | <b>\$ 9,784</b> | <b>\$ 11,191</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE Resiliency 0104RO5156

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-006498        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

The Resiliency program for RGE focuses on two major objectives. The primary objective is to prevent and limit the scope and impact of outages, particularly during storm events. The secondary objective is the ability to expediently restore power after a significant outage event.

Trends of increasingly violent weather events must be considered. Climate change and the rise in intensity of storm events pose a serious threat to our power distribution networks. Systems built out over the last century are not designed to handle such powerful events. The aging condition and resulting impacts to asset condition mean that some older circuits (ex. Rural/Isolated) are particularly vulnerable to extended outages due to major pole, conductor, cable, or device damage.

The New York State Department of Public Service Staff 2018 Storm Report – Recommendation 88 calls for “all electric utilities to submit an actionable plan by July 1, 2019, which details future storm hardening measures including a budget, timeline, and major performance benchmarks.” The Resiliency program for RGE (The company) is a major part of the response to NYS DPS Recommendation 88. The company experienced 42 between 2012-2018. The company also averaged 40 minor storms per year over this same period. The company believe that outage duration and effectiveness of the utility’s response to storms will be primary barometers for customer satisfaction.

In response, RGE has developed a proactive and reliability focused Resiliency program. For the purposes of this paper, the term ‘Storm Resiliency’ and ‘Resiliency’ are interchangeable. From the criteria for circuit selection all the way through narrowing down circuit-specific upgrades, reliability and outage data including storm events are utilized. Developing a deeper understanding of what resiliency means is critical to defining the objectives of the program.

#### Project Scope:

The project is designed to address identified deficiencies in the worst-performing circuits through a three-pronged approach:

- 1.Hardening: Improvement of system infrastructure by using more robust construction practices and materials in compliance with AVANGRID’s Distribution Resiliency Guide
- 2.Automation: Installation of SCADA devices to segment long circuits and increase speed of power restoration.
- 3.Topology: Circuit-specific combination of actions including upgrading lines, increasing restoration ability by increasing feeder ties and switching capabilities (with Automation), and enabling further segmentation of circuits

Based on historical reliability data, including storm impacts, Circuit 0104RO5156 has been analyzed, and several upgrades are recommended to enhance its performance and reliability. The proposed upgrades include the installation of two SCADA reclosers. Additionally, approximately 0.23 miles of underground cable and 1.58 miles of overhead cable will be upgraded to support 600 A. The existing SCADA switches will be reconfigured to reclosers. Approximately 0.9 miles of bare 336 Al cable along Chestnut Ridge Road will be replaced with tree wire.

#### Project Benefits:

The resiliency project mitigates the risk of loss of load in the study area, providing significant value to customers through avoided interruptions and to the company through avoided restoration costs and the replacement of damaged distribution infrastructure. Here are the specific benefits of the three-pronged approach:

- 1.Hardening: Enhances system infrastructure by using robust construction practices and materials, in line with AVANGRID’s Distribution Resiliency Guide.
- 2.Automation: This aspect of the resiliency program includes the following:
  - Enhanced reliability and quality of supply through improved network automation
  - Efficient fault management
  - Quick isolation of faulted sections and restoration in under 5 minutes
  - Cost-effective operations based on optimal deployment of automation devices
  - Preparing the network for future electrification, decarbonization, and increased renewable energy production.
- 3.Topology: Limits the number of customers affected during outages.

**Project Risks and Mitigation Plan:**

Risk: Wrongful Prioritization of Circuits: In the realm of resiliency projects, a significant challenge lies in the potentially erroneous prioritization of circuits. Initially high-priority circuits might not be the most critical ones during unforeseen events. For example, a major storm hitting an unexpected area could shift the importance to a different set of circuits. Mitigation: The rankings for these projects may need constant reevaluation, potentially varying from year to year, or even week to week.

**Risk of No Action:**

If the Resiliency program is not undertaken, the consequences include decreased reliability, higher operational costs, and an inability to meet future demands. Financial impacts involve increased costs due to inefficient fault management and manual operations.

Stakeholders, including customers, shareholders, and local communities, would be negatively affected by continued outages and poor quality of supply. Opportunities for improved reliability, customer satisfaction, and alignment with corporate sustainability goals would be missed.

**Project Alternatives:**

Resiliency is a program mandated by the Public Service Commission(PSC). During planning analysis several alternatives on each circuit will be analyzed.

**Basis for Project Estimates**

Estimates were based on historical resiliency circuits at RGE. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 47           | \$ -        | \$ -        | \$ 14           | \$ 26           | \$ 8          | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 2,517        | \$ -        | \$ -        | \$ 723          | \$ 1,376        | \$ 418        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 155          | \$ -        | \$ -        | \$ 50           | \$ 83           | \$ 21         | \$ -        | \$ -        |
| # Materials            | \$ 1,567        | \$ -        | \$ -        | \$ 450          | \$ 857          | \$ 260        | \$ -        | \$ -        |
| # Overheads - External | \$ 330          | \$ -        | \$ -        | \$ 107          | \$ 177          | \$ 46         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,618</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,345</b> | <b>\$ 2,519</b> | <b>\$ 754</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025        | 2026        | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|---------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 285        | \$ -        | \$ -        | \$ 55        | \$ 56        | \$ 57        | \$ 58        | \$ 59        |
| Materials        | \$ -          | \$ -        | \$ -        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| Other O&M        | \$ -          | \$ -        | \$ -        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 285</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 55</b> | <b>\$ 56</b> | <b>\$ 57</b> | <b>\$ 58</b> | <b>\$ 59</b> |

## RGE Resiliency 0230RO5163

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-006496        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

RGE Resiliency 0230RO5163 is a 2026 Resiliency Project with 21.38 miles of 12.47kV primary circuit selected based on a weighted average ranking including all RGE Circuits.

The ranking includes major storms SAIFI contributions and prioritizes circuits with SAIFI above 2.2 and individual SAIFI contributions lower than 0.14%. The objective of this project is to improve this circuits SAIFI.

Resiliency focuses on, preventing and limiting the scope and impact of outages when they occur. The ability to expediently restore power after a significant outage.

This is Achieved through Topology with Automation (Circuit Ties) - Circuit reconfiguration and sectionalizing with switching device automation Infrastructure.

Hardening - Tree-wire (where applicable), pole replacement, and relocate lines closer to roads (where applicable).

Enhanced Vegetation Management - Ground-to-sky clearance

#### Project Scope:

Install (5) – N.C. SCADA Device

Install (3) – N.O. SCADA Device

13 poles > 75 years age

Replace O/H Conductor (1.43+5.88+0.39 miles) for 0124RO5128 , 0230RO5163 and 0230RO5162 to 477 Kcmil ; Replace U/G Cable (0.05+0.1+0.2miles) for 0230RO5162, 0230RO5161, 0230RO5163 to 3P UG 750 KCM ; Replace (39 locations) – 300A bladed cutouts with 600A disconnect switches ; Install regulators (1) – 1 in 0120RO5211

#### Project Benefits:

Completing this project will improve system SAIFI (System Average Interruption Frequency Index) including storms by 1.34%, being the efficiency of investmet 0.003166. In addition the total O&M annual savings estimated are \$128k. To be Updated per current year

#### Project Risks and Mitigation Plan:

Risks exist in project execution particuarly as it relates to engineering and material procurement. In order to ensure materials are received on time, we will order long lead materials in Q2 2024 to ensure they are received within 1 year of ordering (Poles, devices, wire, etc.).

Weather delays are a risk in distribution construction because our resources often support storm restoration efforts. We address these types of weather delay risks by incorporating contingency into our construction schedules.

Health and Safety of our workers are of a primary concern. Risks related to traffic control, working with energized equipment, slips and trips, etc. are a concern on most projects, we mitigate these risks with project specfic health and safety plans.

Finanacial risks are always present with new information learned during project execution, financial risks are mitigated utilizing available scheduling and forecasting tools for project management (ie. Primavera), we forecast project specific activities in the living tool as the project progress and update monthly project progress to accurately forecast project completion including estimate at completion.



**Risk of No Action:**

Consequences if the Project is Not Undertaken:

- Decreased Reliability: Without automation, the electric distribution system may experience more frequent outages and longer restoration times.
- Inefficiency: Manual operations can lead to inefficiencies in power distribution, resulting in higher operational costs and energy losses.
- Missed Technological Advancements: The grid may not be able to integrate new technologies such as renewable energy sources and smart grid applications.

Legal, Regulatory, or Safety Implications:

- Non-Compliance: Failure to modernize may result in non-compliance with evolving regulatory standards, leading to potential fines and legal issues.
- Safety Risks: Outdated systems can pose safety hazards to both workers and the public, increasing the risk of accidents and injuries.
- Regulatory Pressure: There may be increased pressure from regulatory bodies to upgrade infrastructure to meet new safety and reliability standards.

Potential Financial Impact:

- Increased Operational Costs: Inefficiencies and manual processes can lead to higher operational costs over time.
- Cost of Outages: Frequent outages can result in significant financial losses due to downtime and repair costs.
- Missed Savings: Potential savings from improved efficiency and reduced energy losses will not be realized.

Impact on Stakeholders:

- Customers: More frequent and prolonged outages can lead to customer dissatisfaction and potential loss of business for commercial customers.
- Shareholders: Financial performance may be negatively impacted, leading to lower returns on investment.
- Local Communities: Communities may face disruptions and safety hazards due to outdated infrastructure.

Missed Opportunities:

- Enhanced Efficiency: Automation can significantly improve the efficiency of power distribution, reducing energy losses and operational costs.
- Integration of Renewables: Modernized systems are better equipped to integrate renewable energy sources, supporting sustainability goals.
- Improved Reliability: Automated systems can quickly detect and isolate faults, reducing outage times and improving overall reliability.

**Project Alternatives:**

Rank and Prioritize Worst Performing Circuits:

Based on SAIFI data (3 Year Weighted Average)\* including major storms

Prioritize circuits with SAIFI above 2.2 and individual SAIFI contribution lower than 0.14%

Consider feedback from Operations and Field Evaluations

\*Weighted values taken from reliability calculator

Resiliency focuses on:

Preventing and limiting the scope and impact of outages when they occur

The ability to expediently restore power after a significant outage

Achieved through:

Topology with Automation (Circuit Ties) - Circuit reconfiguration and sectionalizing with switching device automation

Infrastructure Hardening - Tree-wire (where applicable), pole replacement, and relocate lines closer to roads (where applicable).

Enhanced Vegetation Management - Ground-to-sky clearance

**Basis for Project Estimates**

Estimates are prepared utilizing historical estimating tools comparing against actual investments in similar projects as basis for project initiation and are revised through the project as new information is received.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 71           | \$ -        | \$ 71           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,763        | \$ -        | \$ 3,763        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 342          | \$ -        | \$ 342          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 2,343        | \$ -        | \$ 2,343        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 642          | \$ -        | \$ 642          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,161</b> | <b>\$ -</b> | <b>\$ 7,161</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025        | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------|---------------|-------------|---------------|-------------|-------------|-------------|-------------|-------------|
| Outside Services | \$ 284        | \$ -        | \$ 284        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| Materials        | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| Other O&M        | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>     | <b>\$ 284</b> | <b>\$ -</b> | <b>\$ 284</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

## RGE Resiliency 0056RO5180

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-006495        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

RGE Resiliency 0056RO5180 is a 2026 Resiliency Project of 5.06 Miles of primary circuit at 12.47 kV which is selected based on a weighted average ranking including all RGE Circuits.

The ranking includes major storms SAIFI contributions and prioritizes circuits with SAIFI above 2.2 and individual SAIFI contributions lower than 0.14%. The objective of this project is to improve this circuits SAIFI.

Resiliency focuses on, preventing and limiting the scope and impact of outages when they occur. The ability to expediently restore power after a significant outage.

This is Achieved through Topology with Automation (Circuit Ties) - Circuit reconfiguration and sectionalizing with switching device automation Infrastructure.

Hardening - Tree-wire (where applicable), pole replacement, and relocate lines closer to roads (where applicable).

Enhanced Vegetation Management - Ground-to-sky clearance

#### Project Scope:

Install (6) – N.C. SCADA Device

Install (2) – N.O. SCADA Device

Relocate (1) – N.O. SCADA Devices

Install (10) – TripSavers

Balance customer load between 5180, 5179, and 5220 ; Replace (37 locations) – 300A bladed cutouts with 600A disconnect switches on 5180 and its tie circuits ; Install capacitor banks (4) – 3 upgrades (5220, 5179, 2151) and one new (465) ; Create tie using 4kV circuit 2151 to the North – 4kV load transfer between 2151 and 465, 900 feet of 5kV conductor upgrade on 2151 and relocate transformer/recloser to make new 12kV tie between 5180 and 0089RO5220 ;Relocate step down transformer from main line to a lateral 0056RO5180

#### Project Benefits:

Completing this project will improve system SAIFI (System Average Interruption Frequency Index) including storms by 1.52%, being the efficiency of investmet 0.012816. Anticipate an O&M Savings of \$108K/year.

#### Project Risks and Mitigation Plan:

Risks exist in project execution particuarly as it relates to engineering and material procurement. In order to ensure materials are received on time, we will order long lead materials in Q2 2024 to ensure they are received within 1 year of ordering (Poles, devices, wire, etc.).

Weather delays are a risk in distribution construction because our resources often support storm restoration efforts. We address these types of weather delay risks by incorporating contingency into our construction schedules.

Health and Safety of our workers are of a primary concern. Risks related to traffic control, working with energized equipment, slips and trips, etc. are a concern on most projects, we mitigate these risks with project specific health and safety plans.

Finanacial risks are always present with new information learned during project execution, financial risks are mitigated utilizing available scheduling and forecasting tools for project management (ie. Primavera), we forecast project specific activities in the living tool as the project progress and update monthly project progress to accurately forecast project completion including estimate at completion.

**Risk of No Action:**

Circuits will continue to contribute significantly to company wide SAIFI metrics.

**Project Alternatives:**

Rank and Prioritize Worst Performing Circuits:

Based on SAIFI data (3 Year Weighted Average)\* including major storms

Prioritize circuits with SAIFI above 2.2 and individual SAIFI contribution lower than 0.14%

Consider feedback from Operations and Field Evaluations

\*Weighted values taken from reliability calculator

Resiliency focuses on:

Preventing and limiting the scope and impact of outages when they occur

The ability to expediently restore power after a significant outage

Achieved through:

Topology with Automation (Circuit Ties) - Circuit reconfiguration and sectionalizing with switching device automation

Infrastructure Hardening - Tree-wire (where applicable), pole replacement, and relocate lines closer to roads (where applicable).

Enhanced Vegetation Management - Ground-to-sky clearance

**Basis for Project Estimates**

Estimates are prepared utilizing historical estimating tools comparing against actual investments in similar projects as basis for project initiation and are revised through the project as new information is received.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 12           | \$ -        | \$ 12           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 636          | \$ -        | \$ 636          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 58           | \$ -        | \$ 58           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 396          | \$ -        | \$ 396          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 108          | \$ -        | \$ 108          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,210</b> | <b>\$ -</b> | <b>\$ 1,210</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total        | 2025        | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Outside Services | \$ 48        | \$ -        | \$ 48        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| Materials        | \$ -         | \$ -        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| Other O&M        | \$ -         | \$ -        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>     | <b>\$ 48</b> | <b>\$ -</b> | <b>\$ 48</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2025        | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|---------------|-------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 9          | \$ -        | \$ 9          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 502        | \$ -        | \$ 502        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 46         | \$ -        | \$ 46         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 313        | \$ -        | \$ 313        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 86         | \$ -        | \$ 86         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 956</b> | <b>\$ -</b> | <b>\$ 956</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total        | 2025        | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------|--------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Outside Services | \$ 38        | \$ -        | \$ 38        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| Materials        | \$ -         | \$ -        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| Other O&M        | \$ -         | \$ -        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>     | <b>\$ 38</b> | <b>\$ -</b> | <b>\$ 38</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

## RGE Resiliency 0195LS5153

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-006499        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

The Resiliency program for RGE focuses on two major objectives. The primary objective is to prevent and limit the scope and impact of outages, particularly during storm events. The secondary objective is the ability to expediently restore power after a significant outage event.

Trends of increasingly violent weather events must be considered. Climate change and the rise in intensity of storm events pose a serious threat to our power distribution networks. Systems built out over the last century are not designed to handle such powerful events. The aging condition and resulting impacts to asset condition mean that some older circuits (ex. Rural/Isolated) are particularly vulnerable to extended outages due to major pole, conductor, cable, or device damage.

The New York State Department of Public Service Staff 2018 Storm Report – Recommendation 88 calls for “all electric utilities to submit an actionable plan by July 1, 2019, which details future storm hardening measures including a budget, timeline, and major performance benchmarks.” The Resiliency program for RGE (The company) is a major part of the response to NYS DPS Recommendation 88. The company experienced 42 between 2012-2018. The company also averaged 40 minor storms per year over this same period. The company believe that outage duration and effectiveness of the utility’s response to storms will be primary barometers for customer satisfaction.

In response, RGE has developed a proactive and reliability focused Resiliency program. For the purposes of this paper, the term ‘Storm Resiliency’ and ‘Resiliency’ are interchangeable. From the criteria for circuit selection all the way through narrowing down circuit-specific upgrades, reliability and outage data including storm events are utilized. Developing a deeper understanding of what resiliency means is critical to defining the objectives of the program.

#### Project Scope:

The project is designed to address identified deficiencies in the worst-performing circuits through a three-pronged approach:

- 1.Hardening: Improvement of system infrastructure by using more robust construction practices and materials in compliance with AVANGRID’s Distribution Resiliency Guide
- 2.Automation: Installation of SCADA devices to segment long circuits and increase speed of power restoration.
- 3.Topology: Circuit-specific combination of actions including upgrading lines, increasing restoration ability by increasing feeder ties and switching capabilities (with Automation), and enabling further segmentation of circuits

Based on historical reliability data, including storm impacts, Circuit 0195LS5153 has been analyzed, and several upgrades are recommended to enhance its performance and reliability. The proposed upgrades include the installation of two SCADA Reclosers and one SCADA Recloser tie point. Additionally, approximately 0.7 miles of bare 1/0 ACSR cable along Kelly Road will be replaced with tree wire. Furthermore, the existing one-phase underground cable at State Street will be upgraded and extended to a three-phase system, resulting in 1.4 miles of underground cable upgrade, and will connect with Circuit 0212LS0245. Additionally, 0.4 miles of Circuit 0212LS0245 and 0.2 miles of Circuit 0210LS0208 need to be upgraded to 12 kV.

#### Project Benefits:

The resiliency project mitigates the risk of loss of load in the study area, providing significant value to customers through avoided interruptions and to the company through avoided restoration costs and the replacement of damaged distribution infrastructure. Here are the specific benefits of the three-pronged approach:

- 1.Hardening: Enhances system infrastructure by using robust construction practices and materials, in line with AVANGRID’s Distribution Resiliency Guide.
- 2.Automation: This aspect of the resiliency program includes the following:
  - Enhanced reliability and quality of supply through improved network automation
  - Efficient fault management
  - Quick isolation of faulted sections and restoration in under 5 minutes
  - Cost-effective operations based on optimal deployment of automation devices
  - Preparing the network for future electrification, decarbonization, and increased renewable energy production.
- 3.Topology: Limits the number of customers affected during outages.

**Project Risks and Mitigation Plan:**

Risk: Wrongful Prioritization of Circuits: In the realm of resiliency projects, a significant challenge lies in the potentially erroneous prioritization of circuits. Initially high-priority circuits might not be the most critical ones during unforeseen events. For example, a major storm hitting an unexpected area could shift the importance to a different set of circuits. Mitigation: The rankings for these projects may need constant reevaluation, potentially varying from year to year, or even week to week.

**Risk of No Action:**

If the Resiliency program is not undertaken, the consequences include decreased reliability, higher operational costs, and an inability to meet future demands. Financial impacts involve increased costs due to inefficient fault management and manual operations.

Stakeholders, including customers, shareholders, and local communities, would be negatively affected by continued outages and poor quality of supply. Opportunities for improved reliability, customer satisfaction, and alignment with corporate sustainability goals would be missed.

**Project Alternatives:**

Resiliency is a program mandated by the Public Service Commission(PSC). During planning analysis several alternatives on each circuit will be analyzed.

**Basis for Project Estimates**

Estimates were based on historical resiliency circuits at RGE. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.



# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 51           | \$ -        | \$ -        | \$ 16           | \$ 27           | \$ 8          | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 2,683        | \$ -        | \$ -        | \$ 832          | \$ 1,429        | \$ 422        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 166          | \$ -        | \$ -        | \$ 58           | \$ 86           | \$ 22         | \$ -        | \$ -        |
| # Materials            | \$ 1,671        | \$ -        | \$ -        | \$ 518          | \$ 890          | \$ 263        | \$ -        | \$ -        |
| # Overheads - External | \$ 354          | \$ -        | \$ -        | \$ 123          | \$ 184          | \$ 46         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,924</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,547</b> | <b>\$ 2,617</b> | <b>\$ 760</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025        | 2026        | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|---------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 327        | \$ -        | \$ -        | \$ 63        | \$ 64        | \$ 65        | \$ 67        | \$ 68        |
| Materials        | \$ -          | \$ -        | \$ -        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| Other O&M        | \$ -          | \$ -        | \$ -        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 327</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 63</b> | <b>\$ 64</b> | <b>\$ 65</b> | <b>\$ 67</b> | <b>\$ 68</b> |

## RGE Resiliency 0143CF5146

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-006500        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The Resiliency program for RGE focuses on two major objectives. The primary objective is to prevent and limit the scope and impact of outages, particularly during storm events. The secondary objective is the ability to expediently restore power after a significant outage event.

Trends of increasingly violent weather events must be considered. Climate change and the rise in intensity of storm events pose a serious threat to our power distribution networks. Systems built out over the last century are not designed to handle such powerful events. The aging condition and resulting impacts to asset condition mean that some older circuits (ex. Rural/Isolated) are particularly vulnerable to extended outages due to major pole, conductor, cable, or device damage.

The New York State Department of Public Service Staff 2018 Storm Report – Recommendation 88 calls for “all electric utilities to submit an actionable plan by July 1, 2019, which details future storm hardening measures including a budget, timeline, and major performance benchmarks.” The Resiliency program for RGE (The company) is a major part of the response to NYS DPS Recommendation 88. The company experienced 42 between 2012-2018. The company also averaged 40 minor storms per year over this same period. The company believe that outage duration and effectiveness of the utility’s response to storms will be primary barometers for customer satisfaction.

In response, RGE has developed a proactive and reliability focused Resiliency program. For the purposes of this paper, the term ‘Storm Resiliency’ and ‘Resiliency’ are interchangeable. From the criteria for circuit selection all the way through narrowing down circuit-specific upgrades, reliability and outage data including storm events are utilized. Developing a deeper understanding of what resiliency means is critical to defining the objectives of the program.

#### Project Scope:

The project is designed to address identified deficiencies in the worst-performing circuits through a three-pronged approach:

- 1.Hardening: Improvement of system infrastructure by using more robust construction practices and materials in compliance with AVANGRID’s Distribution Resiliency Guide
- 2.Automation: Installation of SCADA devices to segment long circuits and increase speed of power restoration.
- 3.Topology: Circuit-specific combination of actions including upgrading lines, increasing restoration ability by increasing feeder ties and switching capabilities (with Automation), and enabling further segmentation of circuits

Based on historical reliability data, including storm impacts, Circuit 0143CF5146 has been analyzed, and several upgrades are recommended to enhance its performance and reliability. The proposed upgrades include the installation of two SCADA Reclosers and one SCADA Recloser tie point. Move a stepdown located at Rte 21S three poles downstream on the circuit that will allow to create an additional tie point. Additionally, approximately 19.5 miles of cable lower than 336 ACSR must be replaced by 477 ACSR. Furthermore, 0.21 miles of underground cable need to be upgraded with 750 KCM. Adjacent circuit 0142CF5192 will be upgraded with 0.4 miles of tree wire at Green Street.

#### Project Benefits:

The resiliency project mitigates the risk of loss of load in the study area, providing significant value to customers through avoided interruptions and to the company through avoided restoration costs and the replacement of damaged distribution infrastructure. Here are the specific benefits of the three-pronged approach:

- 1.Hardening: Enhances system infrastructure by using robust construction practices and materials, in line with AVANGRID’s Distribution Resiliency Guide.
- 2.Automation: This aspect of the resiliency program includes the following:
  - Enhanced reliability and quality of supply through improved network automation
  - Efficient fault management
  - Quick isolation of faulted sections and restoration in under 5 minutes
  - Cost-effective operations based on optimal deployment of automation devices
  - Preparing the network for future electrification, decarbonization, and increased renewable energy production.
- 3.Topology: Limits the number of customers affected during outages.

**Project Risks and Mitigation Plan:**

Risk: Wrongful Prioritization of Circuits: In the realm of resiliency projects, a significant challenge lies in the potentially erroneous prioritization of circuits. Initially high-priority circuits might not be the most critical ones during unforeseen events. For example, a major storm hitting an unexpected area could shift the importance to a different set of circuits. Mitigation: The rankings for these projects may need constant reevaluation, potentially varying from year to year, or even week to week.

**Risk of No Action:**

If the Resiliency program is not undertaken, the consequences include decreased reliability, higher operational costs, and an inability to meet future demands. Financial impacts involve increased costs due to inefficient fault management and manual operations.

Stakeholders, including customers, shareholders, and local communities, would be negatively affected by continued outages and poor quality of supply. Opportunities for improved reliability, customer satisfaction, and alignment with corporate sustainability goals would be missed.

**Project Alternatives:**

Resiliency is a program mandated by the Public Service Commission(PSC). During planning analysis several alternatives on each circuit will be analyzed.

**Basis for Project Estimates**

Estimates were based on historical resiliency circuits at RGE. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025        | 2026            | 2027            | 2028            | 2029        | 2030        | 2031        |
|------------------------|------------------|-------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ 178           | \$ -        | \$ 12           | \$ 92           | \$ 74           | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 9,451         | \$ -        | \$ 634          | \$ 4,895        | \$ 3,921        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 627           | \$ -        | \$ 49           | \$ 340          | \$ 237          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 5,884         | \$ -        | \$ 395          | \$ 3,048        | \$ 2,442        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 1,335         | \$ -        | \$ 105          | \$ 725          | \$ 505          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 17,475</b> | <b>\$ -</b> | <b>\$ 1,195</b> | <b>\$ 9,101</b> | <b>\$ 7,179</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total           | 2025        | 2026         | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|-------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 1,974        | \$ -        | \$ 48        | \$ 369        | \$ 377        | \$ 385        | \$ 393        | \$ 401        |
| Materials        | \$ -            | \$ -        | \$ -         | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| Other O&M        | \$ -            | \$ -        | \$ -         | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>     | <b>\$ 1,974</b> | <b>\$ -</b> | <b>\$ 48</b> | <b>\$ 369</b> | <b>\$ 377</b> | <b>\$ 385</b> | <b>\$ 393</b> | <b>\$ 401</b> |

## SCADA/Automation RGE

### PROJECT INFORMATION

|                                       |                                         |                                                |                                          |                                        |
|---------------------------------------|-----------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>UI-R0065-RGE-ED   | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The primary objective of this program is to enhance the operational efficiency and reliability of our substations by installing remote terminal units (RTUs) in all substations that currently lack them. For substations already equipped with RTUs, the program aims to integrate all the bays into our master supervisory control and data acquisition (SCADA) system. This integration will ensure seamless communication and control across the network, facilitating better management and monitoring of the substations. By having a unified SCADA system, we can streamline operations and improve the overall performance of our power distribution network.

In addition to the installation of RTUs, the program includes the replacement of outdated electromechanical relays with modern digital relays. This upgrade is crucial for the digitalization of the bays, enabling more precise and reliable system protection. Digital relays offer advanced features such as self-diagnostics, event recording, and remote configuration, which are not available in electromechanical relays. By transitioning to digital relays, we can significantly enhance the protection and control capabilities of our substations, ensuring they are equipped to handle modern power distribution demands.

The integration of SCADA with digital relays will provide improved visibility and remote control of the substations. This enhanced visibility allows for real-time monitoring and quick identification of issues, leading to faster response times and better outage management. Proper system protection coordination and outage assessment will result in improved Customer Average Interruption Duration Index (CAIDI) and System Average Interruption Frequency Index (SAIFI) performance over the long term. These improvements are essential for maintaining a reliable power supply and minimizing the impact of outages on customers, thereby enhancing customer satisfaction and trust in our services.

Furthermore, providing remote control capabilities will greatly enhance the safety of our workers. By allowing operators to control the switchgear remotely, we can reduce the need for manual intervention, which can be hazardous. This not only increases the safety of our personnel but also ensures more efficient and accurate operation of the substations. Remote control capabilities also mean that our response teams can address issues more swiftly and effectively, reducing downtime and improving the overall reliability of the power supply.

The program also emphasizes the importance of proper system protection coordination and outage assessment. By integrating SCADA with digital relays, we can achieve better coordination and quicker identification of faults, leading to faster restoration times. This will result in improved CAIDI and SAIFI performance, which are critical metrics for evaluating the reliability of our power distribution network. Enhanced performance in these areas will contribute to a more stable and dependable power supply for our customers.

#### Project Scope:

The primary objective of this program is to enhance the operational efficiency and reliability of our substations by installing remote terminal units (RTUs) in all substations that currently lack them. For substations already equipped with RTUs, the program aims to integrate all the bays into our master supervisory control and data acquisition (SCADA) system. This integration will ensure seamless communication and control across the network, facilitating better management and monitoring of the substations. By having a unified SCADA system, we can streamline operations and improve the overall performance of our power distribution network.

##### RTU Installation and Integration:

Identify Substations Lacking RTUs: Conduct a comprehensive survey to identify all substations that currently do not have RTUs installed.

Procure RTUs: Source and procure the necessary RTUs that meet the technical specifications required for our network.

Install RTUs: Deploy and install RTUs in the identified substations, ensuring proper configuration and integration with existing systems.

Integrate Existing RTUs: For substations already equipped with RTUs, integrate all the bays into the master SCADA system to ensure unified control and monitoring.

##### Digital Relay Upgrades:

Assess Current Relay Systems: Evaluate the existing electromechanical relays in all substations to determine the scope of replacement needed.

Procure Digital Relays: Source and procure modern digital relays that offer advanced features such as self-diagnostics, event recording, and remote configuration.

Replace Electromechanical Relays: Systematically replace outdated electromechanical relays with digital relays, ensuring minimal disruption to operations.

Configure Digital Relays: Configure the new digital relays to integrate seamlessly with the SCADA system and ensure proper system protection coordination.

##### Enhanced Visibility and Control:

SCADA Integration: Integrate the newly installed RTUs and digital relays with the SCADA system to provide real-time monitoring and control capabilities.

Develop Monitoring Protocols: Establish protocols for continuous monitoring of substation equipment, including status changes, alarms, and fault detection.

Implement Remote Control Capabilities: Enable remote control functionalities for all integrated substations, allowing operators to manage equipment from a central location.

It is estimated that approximately 15 to 20 projects will be completed annually, contingent on funding level approval of approximately \$7.5 to \$8 million per year.

**Project Benefits:**

By enabling remote restoration, the program ensures that power outages are addressed more swiftly and efficiently. This not only minimizes the downtime experienced by customers but also enhances their overall satisfaction. The ability to restore services remotely means that technicians can quickly identify and resolve issues without the need for on-site visits, which can be time-consuming and costly. This improvement in response time is crucial for maintaining customer trust and reliability in the power supply.

Another significant advantage is the digitalization of substation equipment. Transitioning from analog to digital systems allows for more precise monitoring and control of electrical infrastructure. Digital systems are generally more reliable and easier to maintain, reducing the likelihood of equipment failures. Additionally, digitalization facilitates better data collection and analysis, enabling more informed decision-making and proactive maintenance strategies. This shift not only improves operational efficiency but also supports the integration of advanced technologies such as smart grids, which are essential for modernizing the power grid and enhancing its resilience.

The program also contributes to the reduction of Operations and Maintenance (O&M) costs, particularly in the testing of electromechanical relays that require periodic adjustments. Digital relays, in contrast, are more stable and require less frequent testing and calibration. This reduction in maintenance needs translates to lower labor costs and fewer disruptions to the power supply. Moreover, the increased reliability of digital relays enhances the overall safety and stability of the electrical system, providing a more consistent and dependable service to customers. This cost-saving aspect is particularly important for utility companies looking to optimize their budgets and allocate resources more effectively.

Safety during operation activities is another critical benefit of this program. By implementing advanced monitoring and control systems, the risk of accidents and equipment malfunctions is significantly reduced. Proper system protection coordination ensures that any faults or issues are quickly detected and isolated, preventing them from escalating into more serious problems. Additionally, the program's focus on data collection for planning purposes allows for better outage assessment and future infrastructure improvements. This proactive approach to system management not only enhances safety but also ensures a more resilient and reliable power supply for all users. The emphasis on safety is paramount, as it protects both the workforce and the general public from potential hazards.

Furthermore, the program's ability to provide proper system protection coordination and outage assessment is invaluable. By ensuring that the electrical system is well-coordinated and protected, the program minimizes the risk of widespread outages and ensures that any disruptions are quickly contained. This level of coordination is essential for maintaining the integrity of the power grid and preventing cascading failures that could lead to extensive blackouts. The ability to assess outages accurately also helps in identifying the root causes of issues and implementing effective solutions, thereby improving the overall reliability of the power supply.

Lastly, the data collection aspect of the program plays a crucial role in planning and future development. By gathering detailed information on the performance and condition of the electrical infrastructure, utility companies can make more informed decisions about upgrades, maintenance, and expansions. This data-driven approach allows for better resource allocation and prioritization of projects, ensuring that investments are made where they are most needed. Additionally, the insights gained from data analysis can help in predicting future trends and challenges, enabling proactive measures to be taken to address potential issues before they become critical. This forward-thinking strategy is essential for building a robust and adaptable power grid that can meet the demands of the future.

**Project Risks and Mitigation Plan:**

Delays in the installation of Remote Terminal Units (RTUs) and digital relays could disrupt the project timeline, leading to extended downtime and increased costs. To mitigate this risk, we will develop a comprehensive project schedule with clear milestones and deadlines. Establishing strong communication channels with vendors will ensure the timely delivery of equipment. Additionally, we will allocate buffer time in the schedule to accommodate potential delays.

Integrating new RTUs and digital relays with the existing SCADA system may encounter technical difficulties, leading to compatibility issues and operational disruptions. To address this, we will conduct a thorough technical assessment of the existing SCADA system to identify potential integration challenges. Implementing pilot testing for the integration process will help identify and resolve issues before full-scale deployment. We will also engage with SCADA and relay integration experts to provide guidance and support during the integration process.

The transition to new RTUs and digital relays may cause temporary system downtime, affecting the reliability of the network. To minimize this impact, we will implement the upgrades in phases. Backup systems will be in place to maintain power supply during the transition. Additionally, we will develop a communication plan to inform stakeholders and customers about potential downtime and mitigation measures.

Unexpected costs related to equipment, labor, or technical issues could lead to budget overruns. To manage this risk, we will implement regular budget monitoring and reporting to track expenses. Identifying and implementing cost control measures will help manage and reduce expenses. We will also allocate a contingency fund to cover unexpected costs.

**Risk of No Action:**

If this program is not pursued, our SCADA (Supervisory Control and Data Acquisition) system will lack the necessary visibility and remote-control capabilities over the substation equipment. This deficiency will have several critical impacts. Without visibility, NYSEG will be unable to monitor the status changes of substation equipment, including being unaware of equipment alarms and the positions of various components. Such a lack of awareness can lead to undetected substation failures, which may negatively impact the System Average Interruption Frequency Index (SAIFI). SAIFI is a key performance indicator that measures the average number of interruptions a customer experiences. Therefore, undetected issues could result in more frequent and prolonged outages.

The absence of remote-control capabilities will necessitate manual operations by RGE crews. This means that any adjustments or repairs will require physical presence at the substation, significantly increasing the time required to restore service to customers. Consequently, this will lead to longer restoration times and decreased customer satisfaction. The ability to remotely control substation equipment is crucial for timely interventions and efficient management of the power grid.

Without digital relays, there will be a miscoordination within the protection system. Digital relays are crucial for the accurate detection and isolation of faults. Their absence can lead to improper fault isolation, causing wider outages and further impacting SAIFI. Additionally, NYSEG engineers will be unable to perform effective fault assessments, hindering their ability to diagnose and resolve issues promptly. This lack of coordination can result in more extensive damage to the electrical infrastructure and longer recovery times.

Furthermore, the lack of visibility and remote-control capabilities will prevent RGE from implementing proactive maintenance strategies. Proactive maintenance relies on real-time data and alerts to identify potential issues before they escalate into major problems. Without this capability, NYSEG will be forced to rely on reactive maintenance, which is less efficient and more costly. This reactive approach can lead to increased wear and tear on equipment, reducing its lifespan and increasing the likelihood of unexpected failures.

The inability to monitor and control substation equipment remotely also poses significant safety risks. Manual operations require personnel to be physically present at the substation, exposing them to potential hazards. Remote control capabilities allow for safer operations by minimizing the need for on-site interventions. Ensuring the safety of RGE personnel is paramount, and the implementation of this program is essential to achieving that goal.

Not pursuing this program will severely compromise the efficiency and reliability of our substation operations. It will lead to increased outage frequencies and durations, negatively impacting customer satisfaction and operational performance. The lack of visibility, remote control capabilities, and digital relays will hinder RGE's ability to manage the power grid effectively, resulting in higher costs, safety risks, and reduced service quality. Therefore, it is imperative to move forward with this program to ensure the continued reliability and safety of our electrical infrastructure.

**Project Alternatives:**

One alternative could be to continue using the existing electromechanical relays and manually operated systems. While this approach would avoid the initial costs associated with upgrading to Remote Terminal Units (RTUs) and digital relays, it would not address the long-term inefficiencies and reliability issues inherent in the current system. The lack of advanced features such as self-diagnostics, event recording, and remote configuration would mean continued reliance on manual intervention, which is both time-consuming and prone to human error. This could lead to prolonged downtimes and increased operational costs, ultimately affecting the reliability of our power distribution network.

Another alternative could be to implement a partial upgrade, where only the most critical substations receive RTUs and digital relays, while others remain unchanged. This approach would reduce the overall cost of the program but would result in an inconsistent level of operational efficiency and reliability across the network. The substations without upgrades would continue to face the same challenges, potentially leading to uneven performance and increased maintenance costs over time. This inconsistency could also complicate the management and monitoring of the network, making it difficult to achieve the desired improvements in operational efficiency and reliability.

A third alternative might involve outsourcing the monitoring and control of substations to a third-party service provider. While this could potentially reduce the burden on internal resources and provide access to specialized expertise, it would also introduce new risks related to data security, control, and dependency on external vendors. Additionally, the long-term costs of outsourcing could outweigh the benefits, especially if the service provider's fees increase over time. There is also the risk of losing critical in-house knowledge and expertise, which could be detrimental in the event of an emergency or if the service provider fails to meet expectations.

A fourth alternative to the proposed program could involve installing line sensors or Shark meters instead of RTUs. Line sensors and Shark meters are designed to monitor electrical parameters such as voltage, current, and power quality. While these devices can provide valuable data for monitoring the performance of the power distribution network, they do not offer the same level of control and integration as RTUs. Line sensors are primarily used for detecting faults and monitoring line conditions, but they lack the capability to control and automate the operation of substations. Similarly, Shark meters provide detailed measurements and analytics but are not designed to interface with SCADA systems for remote control and automation. The main limitation of using line sensors or Shark meters as an alternative is that they do not facilitate seamless communication and control across the network. RTUs, on the other hand, are specifically designed to interface with SCADA systems, enabling real-time monitoring, control, and automation of substations. This integration is crucial for achieving the program's objective of enhancing operational efficiency and reliability. Additionally, line sensors and Shark meters do not offer the advanced features of digital relays, such as self-diagnostics, event recording, and remote configuration. These features are essential for precise and reliable system protection, which is a key component of the proposed program. Without these capabilities, the network would continue to rely on manual intervention and face challenges in achieving consistent performance and reliability.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within RGE. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020          | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|---------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 1,087         | \$ 137        | \$ 57           | \$ 130          | \$ 288          | \$ 474          |  |  |
| # CIAC                 | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 4,898         | \$ 359        | \$ 278          | \$ 1,337        | \$ 1,397        | \$ 1,528        |  |  |
| # Internal - Non-AC    | \$ 80            | \$ -          | \$ 0            | \$ 1            | \$ 14           | \$ 64           |  |  |
| # Internal, Labor      | \$ 704           | \$ 100        | \$ 108          | \$ 62           | \$ 51           | \$ 383          |  |  |
| # Internal, Overheads  | \$ 634           | \$ 24         | \$ 76           | \$ 117          | \$ 169          | \$ 248          |  |  |
| # Materials            | \$ 2,282         | \$ 64         | \$ 598          | \$ 364          | \$ 775          | \$ 481          |  |  |
| # Overheads - External | \$ 1,922         | \$ 94         | \$ 169          | \$ 353          | \$ 543          | \$ 762          |  |  |
| <b>Total</b>           | <b>\$ 11,607</b> | <b>\$ 778</b> | <b>\$ 1,287</b> | <b>\$ 2,365</b> | <b>\$ 3,238</b> | <b>\$ 3,940</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 2,823         | \$ 673          | \$ 484          | \$ 329          | \$ 323          | \$ 331          | \$ 339          | \$ 344          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 20,048        | \$ 4,158        | \$ 3,165        | \$ 2,445        | \$ 2,494        | \$ 2,544        | \$ 2,595        | \$ 2,647        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 2,281         | \$ 301          | \$ 402          | \$ 308          | \$ 268          | \$ 327          | \$ 334          | \$ 341          |
| # Internal, Overheads  | \$ 1,303         | \$ 332          | \$ 255          | \$ 173          | \$ 146          | \$ 134          | \$ 129          | \$ 135          |
| # Materials            | \$ 6,020         | \$ 916          | \$ 1,072        | \$ 776          | \$ 696          | \$ 836          | \$ 853          | \$ 871          |
| # Overheads - External | \$ 2,768         | \$ 652          | \$ 555          | \$ 377          | \$ 317          | \$ 293          | \$ 281          | \$ 295          |
| <b>Total</b>           | <b>\$ 35,243</b> | <b>\$ 7,032</b> | <b>\$ 5,933</b> | <b>\$ 4,407</b> | <b>\$ 4,245</b> | <b>\$ 4,465</b> | <b>\$ 4,530</b> | <b>\$ 4,631</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Trip Saver

### PROJECT INFORMATION

|                                              |                                         |                                                |                                          |                                        |
|----------------------------------------------|-----------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0062-RGE-ED   | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Trip Saver program is implemented to enhance reliability by reducing the number of interruptions caused by temporary faults in the distribution network, which contribute to approximately 20 percent of the Company's System Average Interruption Frequency Index (SAIFI). The installations associated with this program contribute to improvements in both the System Average Interruption Frequency Index (SAIFI) and the Customer Average Interruption Duration Index (CAIDI).

#### Project Scope:

The Trip Saver program aims to install Trip Saver reclosers to prevent temporary faults from becoming sustained outages. These reclosers minimize outages on feeders by only blinking the affected branch, allowing for automatic restoration of power during temporary faults. By mitigating a significant number of outages, Trip Saver reclosers enhance the SAIDI and SAIFI.

Trip Saver reclosers improve the distribution system by reducing the zone of protection for reclosing and minimizing risks when circuits are NRA-enabled. Additionally, they help avoid Operations & Maintenance (O&M) crew truck rolls to replace blown fuses.

The TripSaver Program is prioritized by ranking 1ph and 2ph laterals from highest number of customers affected by potential transient faults to lowest. Technical specifications, including but not limited to type of connection and circuit topography, are also considered when validating possible installation points. This program has had a 34% reduction of incidents and a 31% reduction of customers affected downstream of installed tripsavers. These zones of protection where tripsavers have been installed interrupt on average 1,920 customers annually.

Using a circuit-by-circuit approach, prioritization was based on applying work to improve customer experience outcomes. When looking at all circuits across the divisions, in aggregate, this resulted in some divisions requiring less attention than others, which allowed other divisions, that were underperforming, to receive more attention. There are additional qualifications that require an examination of each location to ensure the upgrade is viable. For example, the nearness of neighboring Trip Saver devices may cause a location to fall off the list. Likewise, if a suggested location is offroad, beyond the reach of the standard process, that location may be temporarily disqualified. In the end, all the focused vetting results in a more robust deployment, yielding an improved customer experience.

The following units and average unit costs will be addressed between 2025-2031:

2025 - 85 (units) / \$13,728 (unit cost)  
2026 - 63 (units) / \$14,140 (unit cost)  
2027 - 90 (units) / \$14,564(unit cost)  
2028 - 94 (units) / \$15,001 (unit cost)  
2029 - 98 (units) / \$15,451 (unit cost)  
2030 - 102 (units) / \$15,915 (unit cost)  
2031 - 107 (units) / \$16,392 (unit cost)

#### Project Benefits:

The primary benefit of the Trip Saver program is to minimize the number of consumers affected during temporary faults and ensure prompt restoration.

#### Project Risks and Mitigation Plan:

Trip Saver reclosers prevent temporary faults from becoming sustained outages, and they avoid outages on feeders by only blinking the affected branch. By mitigating a significant amount of outages, Trip Saver reclosers improve SAIDI and SAIFI indexes.

The company uses a series of criteria to prioritize the list including:

Worst Performing Circuits

Not under the scope of the Resiliency plan

More SAIFI benefit with customers downstream

Poles under 40 years old

Alignment with others initiatives, such as Distribution Automation Projects and Fuse Coordination.

Without the Trip Saver, power will not be automatically restored when temporary faults occur. This can lead to prolonged outages and increased disruption for consumers.

## Project Alternatives:

## Basis for Project Estimates

## FINANCIAL INFORMATION

| Capital Details:       | Total           | 2020        | 2021        | 2022          | 2023          | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 104          | \$ 0        | \$ 0        | \$ 11         | \$ 45         | \$ 48           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            |  |  |
| # External Services    | \$ 220          | \$ -        | \$ -        | \$ 3          | \$ 118        | \$ 100          |  |  |
| # Internal - Non-AC    | \$ 0            | \$ -        | \$ -        | \$ -          | \$ -          | \$ 0            |  |  |
| # Internal, Labor      | \$ 91           | \$ -        | \$ -        | \$ 40         | \$ 46         | \$ 5            |  |  |
| # Internal, Overheads  | \$ 233          | \$ -        | \$ -        | \$ 56         | \$ 62         | \$ 115          |  |  |
| # Materials            | \$ 1,830        | \$ -        | \$ -        | \$ 495        | \$ 507        | \$ 828          |  |  |
| # Overheads - External | \$ 503          | \$ -        | \$ -        | \$ 116        | \$ 164        | \$ 222          |  |  |
| <b>Total</b>           | <b>\$ 2,981</b> | <b>\$ 0</b> | <b>\$ 0</b> | <b>\$ 721</b> | <b>\$ 941</b> | <b>\$ 1,319</b> |  |  |

| O&M Details:     | Total        | 2020        | 2021        | 2022        | 2023         | 2024        |  |  |
|------------------|--------------|-------------|-------------|-------------|--------------|-------------|--|--|
| Outside Services | \$ 18        | \$ -        | \$ -        | \$ -        | \$ 17        | \$ 1        |  |  |
| Materials        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| Other O&M        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| <b>Total</b>     | <b>\$ 18</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 17</b> | <b>\$ 1</b> |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 142           | \$ 19           | \$ 13           | \$ 18           | \$ 20           | \$ 22           | \$ 23           | \$ 25           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 4,614         | \$ 566          | \$ 596          | \$ 625          | \$ 656          | \$ 689          | \$ 723          | \$ 759          |
| # Internal - Non-AC    | \$ 446           | \$ -            | \$ 66           | \$ 69           | \$ 72           | \$ 76           | \$ 80           | \$ 84           |
| # Internal, Labor      | \$ 62            | \$ 62           | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 413           | \$ 77           | \$ 44           | \$ 63           | \$ 59           | \$ 54           | \$ 55           | \$ 61           |
| # Materials            | \$ 4,397         | \$ 519          | \$ 210          | \$ 601          | \$ 661          | \$ 727          | \$ 800          | \$ 880          |
| # Overheads - External | \$ 755           | \$ 140          | \$ 84           | \$ 115          | \$ 108          | \$ 98           | \$ 99           | \$ 110          |
| <b>Total</b>           | <b>\$ 10,829</b> | <b>\$ 1,384</b> | <b>\$ 1,013</b> | <b>\$ 1,491</b> | <b>\$ 1,576</b> | <b>\$ 1,666</b> | <b>\$ 1,780</b> | <b>\$ 1,919</b> |

[illegible]

|       |    |    |    |   |    |   |    |   |    |   |    |   |    |   |
|-------|----|----|----|---|----|---|----|---|----|---|----|---|----|---|
| Total | \$ | 11 | \$ | 1 | \$ | 2 | \$ | 2 | \$ | 2 | \$ | 2 | \$ | 2 |
|-------|----|----|----|---|----|---|----|---|----|---|----|---|----|---|

## Climate Change Resilience - Targeted Undergrounding - RG&E

### PROJECT INFORMATION

|                                                  |                                         |                                              |                               |                                    |
|--------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                             | <b>Project ID:</b><br>PRJ-007205        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This program is part of the company's Climate Change Resilience Plan as filed in March of 2025.

As extreme weather events increase due to climate change, the use of Targeted Undergrounding on portions of the electric distribution system is a proactive solution to significantly enhance the reliability and resiliency of the distribution system. This program aims to improve system resilience by identifying and performing undergrounding on specific sections of overhead distribution lines that may be more prone to outages, are in locations that are difficult to repair, or, if outaged, could have an outsized impact on the community; for example, based on the number or type of customers that they serve. The goal is to underground approximately two miles per year, with the initial focus on development of a process or framework to identify high-impact locations for undergrounding.

The Targeted Undergrounding Program represents an investment to enhance the resiliency for select portions of the electric distribution system. Initially, the program will include identification of locations to deploy Targeted Undergrounding with the goal of undergrounding approximately two miles per year. The initial years of the program will be used to build a foundation that will be utilized to determine the realized benefits and expand the program.

Year 1 of the program will be for design/planning of the first ~2 miles of undergrounding.

Year 2 and onward will be for construction of the ~2 miles designed in the previous Year; and design/planning of the next ~2 miles.

The estimated costs per mile of underground is ~\$5.95M.

#### Project Scope:

Develop projects that efficiently build resiliency through undergrounding portions of circuits. This will incorporate a variety of factors including historical outage performance, local topology, and supplied customers. The process to identify locations to utilize Targeted Undergrounding will consider some or all of the following characteristics:

Outage History: Analysis of appropriate customer outage metrics potentially including the list of worst performing circuits.

Community Resilience: Analysis of what connected facilities (e.g., hospitals, town centers, community shelters) could benefit from the undergrounding.

Disadvantaged Communities: Does the undergrounding section contribute to serving or backing-up a disadvantaged community?

Local topology Considerations: Including items like difficult to access areas (e.g., steep or offroad terrain), potential for out-of-ROW tree related outages, major road or water crossings, multiple circuit rights-of-way, etc.

Other Needs: If an area is known to have recent projects deployed or is expected to have future needs, these factors should be considered to determine how this affects the priority (e.g., asset condition, recent vegetation management/hardening efforts.)

The program aims to underground approximately 2 miles per year, with an estimated cost of \$5.9M per mile.

#### Project Benefits:

Enhance reliability and resiliency to customers and communities by relocating targeted sections of the distribution system underground away from weather-related outage causes. These projects will effectively eliminate storm and other weather related outages on the undergrounded portion of the circuit; with the candidate sections for undergrounding being identified based on a variety of characteristics. These projects will also demonstrate our company's commitment to customer and community resilience through the filed Climate Change Resilience Plan.

#### Project Risks and Mitigation Plan:

Risks include incorrect identification of circuit locations to underground, and coordination challenges with telecom companies, municipalities, and potential supply chain constraints. Performing the planning/design phase of the project in Year 1 and construction activities in Year 2 allows for these coordination risks to be identify early and the necessary stakeholder engaged.

Construction for underground facilities is highly dependent on the what type of subsurface must be excavated and can have impacts to the schedule and costs for construction. For example, encountered ledge would be more difficult to excavate than sandy soil. During the design/planning phase the expected subsurface characteristics will be profiled including if modification to the design is warranted (e.g., changing underground route.) Finally, there is the potential schedule for risks to the project schedule if the identified underground route requires excavation and repair of roadways there may be certain times of year where these activities are limited by the town or city regulations, or by the availability of asphalt to repair the roadway.

Performing the planning/design phase of the project in Year 1 and construction activities in Year 2 allows for these scheduling risks to be mitigated as the entirety of the warmer season in Year 2 is available for construction.

In addition to not completing portions of our filed Climate Change Resilience Plan, the potential sections of the distribution system that would have been moved underground would remain overhead and exposed to weather-related outage causes; potentially impacting customer reliability and resiliency during major weather events.

Alternatives to Targeted Undergrounding include potential use of aerial or space cable, vegetation management, and other Distribution resilience activities like installation of tree-wire or circuit automation. Targeted Undergrounding is expected to be particularly beneficial when other alternatives that can improve resilience to portions of distribution circuits, like inclusion tree-wire or vegetation management, are not able to provide their complete benefit. For example, in areas where there are multiple circuits on the same pole-line or when there is vegetation outside of the right-of-way, alternative mitigating measures may not be able to provide comparable benefit as Targeted Undergrounding.

Year 1 of the program will be for design/planning of the first ~2 miles of undergrounding.  
Year 2 and onward will be for construction of the ~2 miles designed in the previous Year; and design/planning of the next ~2 miles.

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028            | 2029             | 2030             | 2031             |
|------------------------|------------------|-------------|-------------|-------------|-----------------|------------------|------------------|------------------|
| # AFUDC                | \$ 400           | \$ -        | \$ -        | \$ -        | \$ 43           | \$ 119           | \$ 119           | \$ 119           |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 17,194        | \$ -        | \$ -        | \$ -        | \$ 1,840        | \$ 5,118         | \$ 5,118         | \$ 5,118         |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 3,999         | \$ -        | \$ -        | \$ -        | \$ 428          | \$ 1,190         | \$ 1,190         | \$ 1,190         |
| # Internal, Overheads  | \$ 1,295         | \$ -        | \$ -        | \$ -        | \$ 165          | \$ 389           | \$ 366           | \$ 376           |
| # Materials            | \$ 13,195        | \$ -        | \$ -        | \$ -        | \$ 1,412        | \$ 3,928         | \$ 3,928         | \$ 3,928         |
| # Overheads - External | \$ 2,807         | \$ -        | \$ -        | \$ -        | \$ 357          | \$ 843           | \$ 793           | \$ 815           |
| <b>Total</b>           | <b>\$ 38,889</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,245</b> | <b>\$ 11,586</b> | <b>\$ 11,513</b> | <b>\$ 11,546</b> |

[illegible]

## Distribution Automation - RGE

### PROJECT INFORMATION

|                                       |                                         |                                              |                                           |                                        |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>UI-R0126-RGE-ED   | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The RG&E Distribution Automation Program was established to improve distribution reliability performance metrics by applying the principles of Fault Location, Isolation, and Service Restoration (FLISR) to reduce the scale of outages (e.g., through sectionalizing), improve the speed at which power can be restored to customers (e.g., through remote switching), or avoid outages altogether (e.g., through sequential reclosing). The core scope of the Distribution Automation Program entails the deployment of modern SCADA-enabled devices such as reclosers and switches – and the associated programming and communications upgrades – to distribution circuits at optimized locations, either in new locations, or replacing legacy equipment. The SCADA functionality of the new devices enables significant improvements in system operability and flexibility in response to disturbances when controlled by system operators and also lays the foundation for deployment of systems like Advanced Restoration and Automation (ARA) that can isolate faults and restore power without operator intervention. Additionally, these new devices allow for loading and operating status data to be transmitted to the Company, providing valuable historical data to system planners as well as enabling crucial visibility for system operators.

Background: The Distribution Automation (DA) program targets distribution circuits at all RGE territory for improved FLISR capabilities, prioritized based on historical contribution to system SAIFI. Device locations were selected to maximize SAIFI improvement by employing strategies such as:

- Limiting the number of customers between sectionalizing devices to 500
- Limiting the exposure (i.e., circuit length) between sectionalizing devices to 10 miles
- Deploying SCADA-operable/automated circuit ties to enable quick restoration
- Utilizing sequential reclosing to avoid outages from momentary faults

Prioritization is based on historical SAIFI performance at the division and station-level performance, rather than for individual circuits. This prioritization methodology intends to target areas with the greatest need for reliability improvements and where forming circuit ties can create mutual benefits between circuits and substations.

#### Project Scope:

The key components of the program include device deployment (SCADA reclosers, switches, etc.), reprogramming, and communication upgrades. These devices are strategically placed to create customer "zones", each with no more than 500 customers or ten miles of overhead line.

There are 228 circuits at RGE that still do not have the automation plan completed to help on improving the SAIFI. These circuits will require approximately 542 new devices to be installed, 127 of these new devices are proposed within the 2027 plan and the remaining 415 devices are being proposed from 2028 to 2031.

#### Project Benefits:

The primary benefit of this project is the enhancement of system reliability and resiliency, as indicated by SAIFI and CAIDI performance metrics. By deploying SCADA-operable sectionalizing and circuit-tie devices, the project aims to:

- Reduce the scale of outages by increasing circuit sectionalizing points and limiting customer count to 500 between devices. (SAIFI benefit)
- Improve the speed at which power can be restored to customers by utilizing remote switching capabilities instead of dispatching field personnel to perform isolation and/or restoration switching operations manually. (CAIDI benefit)
- Avoid outages altogether by using sequential reclosing to automatically restore power in the event of a temporary fault. (SAIFI benefit)
- Reduce fault locating time by providing by field personnel by improving operational awareness and system visibility (CAIDI benefit)

In addition to improving reliability, the deployment of advanced tools and technology will improve the efficiency and quality of utility operations, including better data, monitoring, control, and management of the electrical grid. For example, the interval power flow data provided by the advanced devices can significantly improve the accuracy and practicality of system planning studies and will also support the development of more granular load forecasts. Additionally, the operational awareness and remote operability provided by the project will improve the efficiency of routine maintenance switching operations, reducing operational expenses.

**Project Risks and Mitigation Plan:**

1. Delays in Project Implementation: Project delays could lead to an increase in frequency and/or duration customer outages, resulting in worsening reliability performance. The project schedule could be impacted by field conditions, particularly in heavily wooded or environmentally sensitive areas, where it can be difficult to access infrastructure with heavy equipment. Weather delays are also a risk in distribution construction due to worker safety concerns. These risks will be addressed by incorporating contingency into our construction schedules. To mitigate this risk, the project team conducts thorough field scouting and feasibility assessments before finalizing device locations. Long lead-time equipment delays can also adversely impact project schedules. Equipment sourcing risks will be mitigated by identifying proposed equipment subject to long lead times and ordering such equipment proactively, as appropriate, to minimize the risk of project delays.
2. Budget Risks: Another risk is the possibility of budget overruns due to unexpected costs associated with device installation, reprogramming, or adding communications. To manage this risk, regular budget reviews and cost tracking are implemented to ensure the project remains within the allocated budget.
3. Technology Integration: There are risks associated with the integration of new devices with existing systems, which could lead to compatibility issues or operational disruptions. To mitigate this risk, the project involves close coordination with the Substation Automation group and other relevant teams to ensure seamless integration.

**Risk of No Action:**

If the proposed project scope is not executed, the Company must continue to rely on existing infrastructure to manage outage events. As a result, the frequency and duration of outages would likely continue at current levels or worsen, and the Company would miss out on an opportunity to provide a positive reliability benefit to affected customers.

Additionally, without the advanced tools and technologies proposed in the Distribution Automation (DA) program, the benefits to data, monitoring, control, and management of the electric grid would not be realized. This could lead to slower response times to outages, increased operating costs, and inefficiencies in distribution system planning and operations.

In summary, the risks of taking no action include stagnant or worsening reliability metrics, decreased customer satisfaction, and reduced operational efficiency.

**Project Alternatives:**

An alternative solution is manual operation of devices in the field. This involves installing additional sectionalizing and/or tie points, but forgoes the inclusion of SCADA-operability and, instead, relies on manual operation to perform switching operations. Manual operation involves dispatching field personnel to manually control and manage the electric distribution system under the direction of system operators. This approach requires significant labor and generally leads to much slower response times during outages relative to remote operation. The cost of manual operation includes ongoing labor expenses, training, and the potential for higher operating costs due to inefficiencies and slower restoration times.

**Basis for Project Estimates**

Historical data and past project experiences were used to inform the cost estimates. By leveraging historical data, the project team can make more informed predictions about the costs involved in the current project. Furthermore, the project team conducts field scouting and feasibility assessments to identify any potential challenges or additional costs that might arise during the deployment.

Finally, a contingency budget was included to cover any unforeseen expenses that might arise during the project. This helps to ensure that the project remains within the allocated budget, even if unexpected costs are encountered.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 1,492         | \$ 344          | \$ 368          | \$ 360          | \$ 204          | \$ 215          |  |  |
| # CIAC                 | \$ -74           | \$ -1           | \$ -            | \$ -26          | \$ -26          | \$ -22          |  |  |
| # External Services    | \$ 2,471         | \$ 343          | \$ 581          | \$ 793          | \$ 391          | \$ 363          |  |  |
| # Internal - Non-AC    | \$ 504           | \$ 86           | \$ 57           | \$ 98           | \$ 88           | \$ 174          |  |  |
| # Internal, Labor      | \$ 269           | \$ 26           | \$ 76           | \$ 83           | \$ 37           | \$ 48           |  |  |
| # Internal, Overheads  | \$ 639           | \$ 49           | \$ 100          | \$ 236          | \$ 125          | \$ 129          |  |  |
| # Materials            | \$ 4,403         | \$ 230          | \$ 495          | \$ 1,742        | \$ 1,157        | \$ 778          |  |  |
| # Overheads - External | \$ 1,449         | \$ 87           | \$ 188          | \$ 511          | \$ 331          | \$ 332          |  |  |
| <b>Total</b>           | <b>\$ 11,152</b> | <b>\$ 1,165</b> | <b>\$ 1,867</b> | <b>\$ 3,797</b> | <b>\$ 2,307</b> | <b>\$ 2,017</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029             | 2030             | 2031             |
|------------------------|------------------|-------------|-------------|-------------|-------------|------------------|------------------|------------------|
| # AFUDC                | \$ -57           | \$ -57      | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 38,114        | \$ -495     | \$ -        | \$ -        | \$ -        | \$ 12,870        | \$ 12,870        | \$ 12,870        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ -543          | \$ -543     | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ 1,258         | \$ 18       | \$ -        | \$ -        | \$ -        | \$ 426           | \$ 401           | \$ 412           |
| # Materials            | \$ 873           | \$ 873      | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # Overheads - External | \$ 2,772         | \$ 205      | \$ -        | \$ -        | \$ -        | \$ 883           | \$ 831           | \$ 854           |
| <b>Total</b>           | <b>\$ 42,417</b> | <b>\$ 1</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 14,179</b> | <b>\$ 14,101</b> | <b>\$ 14,136</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025        | 2026        | 2027        | 2028        | 2029          | 2030          | 2031          |
|------------------|---------------|-------------|-------------|-------------|-------------|---------------|---------------|---------------|
| Outside Services | \$ 919        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 300        | \$ 306        | \$ 313        |
| Materials        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |
| Other O&M        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |
| <b>Total</b>     | <b>\$ 919</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 300</b> | <b>\$ 306</b> | <b>\$ 313</b> |



## RGE Automation - Central

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-005864        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2025 | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Distribution Automation - 2025 RGE Central is a project part of the Distribution Automation Program, focused on Automated Recloser deployment of sequential reclosing schemes on circuits in the RGE region. Circuits are selected from substations where the circuits contribute more than 0.29% of System SAIFI (11,200 Customer Count), using 2021-2023 SAIFI data (3 Year Average Data), prioritizing worst performing service territories. Circuits are analyzed holistically to maximize reliability improvement (approximately 500 customers and/or 10 miles. The objective of this program is to improve circuit SAIFI by enabling automatic fault clearing or SCADA controlled device operation to minimize customer outage impact. Device deployment Provides better quality data for Distribution Planning analyses (ability to gather data remotely) and System Operators with an increased level of visibility enabling more informed decision making in real-time operations.

#### Project Scope:

Installation of approximately 24 New Recloser Devices on 7 circuits including necessary telecommunications upgrades and reprogramming of existing devices, trip saver and fuse upgrades.

#### Project Benefits:

The fundamental objective is to improve system SAIFI reliability by enabling remote device operation through energy control center SCADA Control. Additionally, provides better quality data for distribution analyses (ability to gather data remotely) and improves reliability in a safe, efficient, and cost-effective way. Reliability benefits of the 2025 plan anticipate a system SAIFI improvement of 0.0093.

#### Project Risks and Mitigation Plan:

Risks exist in project execution particularly as it relates to engineering and material procurement. In order to ensure materials are received on time, we will order long lead materials in Q3 2024 to ensure they are received within 1 year of ordering (Poles, devices, wire, etc.).

Weather delays are a risk in distribution construction because our resources often support storm restoration efforts. We address these types of weather delay risks by incorporating contingency into our construction schedules.

Health and Safety of our workers are of a primary concern. Risks related to traffic control, working with energized equipment, slips and trips, etc. are a concern on most projects, we mitigate these risks with project specific health and safety plans.

Financial risks are always present with new information learned during project execution, financial risks are mitigated utilizing available scheduling and forecasting tools for project management (ie. Primavera), we forecast project specific activities in the living tool as the project progress and update monthly project progress to accurately forecast project completion including estimate at completion.

**Risk of No Action:**

Circuits will continue to contribute significantly to company wide SAIFI metrics.

**Project Alternatives:**

Distribution Automation Ranking

Used 2021-2023 SAIFI data (3 Year Average Data) to identify worst performing circuits

Selection of device locations using the following criteria:

Every circuit is analyzed holistically to maximize reliability improvement

500 customers and/or 10 miles

Prioritized by Worst Performing Service Territory

Circuits selected from Stations where the circuits contribute more than 0.29% of System SAIFI

0.29% System SAIFI □ ~11,200 Customer Count

2021-2023 Average weighted SAIFI Excluding major storms

1,192 circuits contributed to SAIFI (2021-2023)

All circuits studied in previous years were excluded, regardless if they were poor performing

**Basis for Project Estimates**

Estimates are prepared utilizing historical estimating tools comparing against actual investments in similar projects as basis for project initiation and are revised through the project as new information is received.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026          | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 238           | \$ 102          | \$ 12         | \$ 125          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 8,438         | \$ 1,204        | \$ 636        | \$ 6,599        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 1,499         | \$ 543          | \$ 84         | \$ 872          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 538           | \$ 106          | \$ 42         | \$ 389          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,036         | \$ 217          | \$ 72         | \$ 747          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 995           | \$ -            | \$ 97         | \$ 898          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 12,744</b> | <b>\$ 2,172</b> | <b>\$ 943</b> | <b>\$ 9,629</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025         | 2026         | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------|---------------|--------------|--------------|---------------|-------------|-------------|-------------|-------------|
| Outside Services | \$ 311        | \$ 30        | \$ 32        | \$ 249        | \$ -        | \$ -        | \$ -        | \$ -        |
| Materials        | \$ -          | \$ -         | \$ -         | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>     | <b>\$ 311</b> | <b>\$ 30</b> | <b>\$ 32</b> | <b>\$ 249</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

## Automation RGE Canandaigua

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                  | <b>Project ID:</b><br>PRJ-006502        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Resiliency | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Distribution Automation - 2026 RGE Canandaigua is a project part of the Distribution Automation Program, focused on Automated Recloser deployment of sequential reclosing schemes on circuits in the RGE region. Circuits are selected from substations where the circuits contribute more than 0.29% of System SAIFI (11,200 Customer Count), using 2021-2023 SAIFI data (3 Year Average Data), prioritizing worst performing service territories. Circuits are analyzed holistically to maximize reliability improvement (approximately 500 customers and/or 10 miles. The objective of this program is to improve circuit SAIFI by enabling automatic fault clearing or SCADA controlled device operation to minimize customer outage impact. Device deployment Provides better quality data for Distribution Planning analyses (ability to gather data remotely) and System Operators with an increased level of visibility enabling more informed decision making in real-time operations.

#### Project Scope:

In the Canandaigua division, work will be carried out on 4 different circuits. A total of 12 new reclosers will be installed and 1 existing recloser will be reprogrammed. Additionally, depending on the condition of the poles where the new reclosers will be installed, it may also be necessary to install new poles.

#### Project Benefits:

The fundamental objective is to improve system SAIFI reliability by enabling remote device operation through energy control center SCADA Control. Additionally, provides better quality data for distribution analyses (ability to gather data remotely) and improves reliability in a safe, efficient, and cost-effective way.

#### Project Risks and Mitigation Plan:

Risks exist in project execution particularly as it relates to engineering and material procurement. In order to ensure materials are received on time, we will order long lead materials in Q3 2024 to ensure they are received within 1 year of ordering (Poles, devices, wire, etc.).

Weather delays are a risk in distribution construction because our resources often support storm restoration efforts. We address these types of weather delay risks by incorporating contingency into our construction schedules.

Health and Safety of our workers are of a primary concern. Risks related to traffic control, working with energized equipment, slips and trips, etc. are a concern on most projects, we mitigate these risks with project specific health and safety plans.

Financial risks are always present with new information learned during project execution, financial risks are mitigated utilizing available scheduling and forecasting tools for project management (ie. Primavera), we forecast project specific activities in the living tool as the project progress and update monthly project progress to accurately forecast project completion including estimate at completion.

**Risk of No Action:**

Circuits will continue to contribute significantly to company wide SAIFI metrics.

**Project Alternatives:**

Distribution Automation Ranking

Used 2021-2023 SAIFI data (3 Year Average Data) to identify worst performing circuits

Selection of device locations using the following criteria:

Every circuit is analyzed holistically to maximize reliability improvement

500 customers and/or 10 miles

Prioritized by Worst Performing Service Territory

Circuits selected from Stations where the circuits contribute more than 0.29% of System SAIFI

0.29% System SAIFI □ ~11,200 Customer Count

2021-2023 Average weighted SAIFI Excluding major storms

1,192 circuits contributed to SAIFI (2021-2023)

All circuits studied in previous years were excluded, regardless if they were poor performing

**Basis for Project Estimates**

Estimates are prepared utilizing historical estimating tools comparing against actual investments in similar projects as basis for project initiation and are revised through the project as new information is received.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| Outside Services | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Materials        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| Other O&M        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>     | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026            | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 38           | \$ -        | \$ 12           | \$ 26           | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,993        | \$ -        | \$ 641          | \$ 1,352        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 144          | \$ -        | \$ 50           | \$ 94           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,241        | \$ -        | \$ 399          | \$ 842          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 307          | \$ -        | \$ 106          | \$ 200          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,722</b> | <b>\$ -</b> | <b>\$ 1,209</b> | <b>\$ 2,512</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025        | 2026         | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|---------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 290        | \$ -        | \$ 24        | \$ 51        | \$ 52        | \$ 53        | \$ 54        | \$ 55        |
| Materials        | \$ -          | \$ -        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| Other O&M        | \$ -          | \$ -        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 290</b> | <b>\$ -</b> | <b>\$ 24</b> | <b>\$ 51</b> | <b>\$ 52</b> | <b>\$ 53</b> | <b>\$ 54</b> | <b>\$ 55</b> |



# **NYSEG Electric Compliance**

## FERC 881 Regulatory Compliance

### PROJECT INFORMATION

|                                                                     |                                         |                                              |                                       |                                    |
|---------------------------------------------------------------------|-----------------------------------------|----------------------------------------------|---------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                               | <b>Project ID:</b><br>PRJ-003645        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Jorge AITH | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Model &<br>Advanced Operations | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Oct-2022        | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

FERC Order 881 mandates the comprehensive implementation of Ambient Adjusted Ratings (AARs) to optimize transmission line capacity based on forecasted weather conditions, specifically ambient air temperature. This represents a significant shift from NYSEG current methodology, which relies on static ratings adjusted seasonally.

The new approach requires real-time updates to transmission line ratings, at least on an hourly basis, considering ambient air temperature and diurnal heating effects. AARs will be mandatory for all Bulk Electric System (BES) circuits.

The objective of this project is to ensure full compliance with FERC Order 881 across NYSEG by December 2028. This includes the development and deployment of systems and processes to facilitate real-time rating adjustments, ensuring enhanced transmission line efficiency and reliability.

#### Project Scope:

##### Implementation of FERC Order 881

##### AAR Calculations:

Develop and integrate systems for real-time Ambient Adjusted Ratings (AARs) calculations.

Ensure accurate and timely updates based on ambient air temperature and diurnal heating effects.

How will AAR be calculated:

**Hourly Calculation:** AARs will be determined at the beginning of each hour for both real-time and forecasted ratings.

**Day/Night Adjustments:** Ratings will consider solar heating during the day and cooler temperatures at night. Previously, day and night adjustments were not factored in, and solar heating was assumed to be constant throughout the day.

**Seasonal Ratings:** NYSEG will implement 4 seasonal line ratings for extended transmission service.

This approach aims to improve the accuracy and transparency of transmission line ratings, potentially reducing congestion costs and enhancing reliability.

##### EMS Enhancements:

Upgrade the Energy Management System (EMS) to support real-time AARs.

Implement necessary software and hardware enhancements for seamless integration.

Siemens Spectrum 4.75

This will involve developing communication protocols with the NYISO, which will serve as the data collection and retrieval platform for all NY Transmission Operators.

##### Training:

Conduct comprehensive vendor supported training programs for staff on the new AAR methodology and EMS enhancements.

Team that are going to get training would be:

1. Rating & Modeling Group
2. Transmission Operators
3. Outage Planning
4. Transmission Planning

##### Increase in Transmission Line Capacity/Reduce Congestion:

Optimize transmission line capacity to handle increased loads efficiently.

Implement strategies to reduce congestion and improve overall system reliability.

##### Coordination with NYISO:

Ensure compliance with reporting requirements by sending real-time AAR data to New York Independent System Operator.

Establish protocols for regular communication and data sharing with NYISO to facilitate system-wide coordination and reliability.

This will involve developing communication protocols with the NYISO, which serves as the data collection and retrieval platform for all NY Transmission Operators.

##### Professional Services for Integration:

Hire professional services specializing in system integration to assist with the deployment of AAR calculation software vendor and EMS enhancements.

Ensure the integration of new systems into existing infrastructure, leveraging expert knowledge and experience.

##### New Software Needs:

Additional softwares that would be needed in terms of FERC 881 Project Support:



#### **Project Benefits:**

##### **Enhanced Transmission Line Efficiency:**

**Optimized Capacity:** By using Ambient Adjusted Ratings (AARs), transmission lines can operate within their reasonable limits, especially during favorable weather conditions. This maximizes the utilization of existing infrastructure.

**Dynamic Adjustments:** Hourly generated data will help to get updates based on ambient air temperature and diurnal heating effects ensure that transmission line ratings are always within the reasonable limits of operations, reducing the risk of overloading and improving overall efficiency.

##### **Improved System Reliability:**

**Reduced Congestion:** By optimizing transmission line capacity, the system can handle increased loads more effectively, reducing congestion and the likelihood of bottlenecks.

##### **Regulatory Compliance:**

**Adherence to FERC Order 881:** Implementing the required changes ensures full compliance with FERC Order 881, avoiding potential penalties and regulatory issues.

##### **Cost Savings:**

**Operational Efficiency:** Improved efficiency and reduced congestion lead to lower operational costs and better resource allocation.

##### **Environmental Benefits:**

##### **Enhanced Data and Analytics:**

The integration of new software and systems will provide hourly generate AAR data and insights, potentially enabling better decision-making and proactive management of the electric grid. Enhanced data collection and processing capabilities allow for advanced analytics, helping to identify trends, predict issues, and optimize operations.

##### **Improved Coordination with NYISO:**

**Seamless Data Sharing:** Hourly generated AAR data sent to NYISO.

**Enhanced Communication:** Regular communication and data sharing protocols with NYISO to facilitate compliance with FERC and quicker response times to potential issues.

#### **Project Risks and Mitigation Plan:**

##### **1. EMS Enhancement Delays**

###### **Risk Mitigation:**

**Regular Progress Reviews:** Conduct frequent progress reviews to identify and address potential delays early.

**Resource Allocation:** Ensure adequate resources are allocated to the project to avoid bottlenecks.

##### **2. Missed Requirements**

###### **Risk Mitigation:**

**Requirements Management:** Use a robust requirements management tool to track and verify all requirements.

**Stakeholder Engagement:** Engage stakeholders regularly to ensure all requirements are captured and understood.

**Review and Validation:** Conduct regular reviews and validation sessions to ensure all requirements are met.

##### **Risk of No Action:**

###### **Regulatory Penalties:**

**Fines and Sanctions:** Non-compliance with FERC Order 881 can result in significant fines and sanctions imposed by the Federal Energy Regulatory Commission (FERC). These penalties can be substantial and impact the financial health of the company.

**Legal Actions:** Failure to comply may lead to legal actions, including lawsuits and enforcement actions by regulatory bodies, which can be costly and time-consuming.

#### **Project Alternatives:**

FERC Order 881 mandates the use of Ambient Adjusted Ratings (AARs) for transmission lines to ensure real-time optimization based on weather conditions. While compliance with this order is required, there are no direct alternatives to meeting the specific requirements of FERC 881.

#### **Basis for Project Estimates**

The project cost estimates were aggregated from the costs of internal and inter-company labor, discrete scopes by selected Professional Service Vendors (external resources), materials including hardware and software licensing costs, and additional project support costs. These estimates are derived from the analysis of historical data on internal labor costs for known activities (estimated hours), and budgetary quotes from suppliers for necessary hardware and software. Additional project support costs (AFUDC/Internal and External Overheads) were also considered based on prior/known budget outcomes and cost estimation tools provided by the Project Management Office. Careful review of actual expenditures and a reconsideration of project estimates, overheads, and labor for the purpose of reforecasting are routinely conducted by the project team.

## **FINANCIAL INFORMATION**

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022         | 2023          | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|--------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 22           | \$ -        | \$ -        | \$ 0         | \$ 4          | \$ 18           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # External Services    | \$ 1,281        | \$ -        | \$ -        | \$ 24        | \$ 60         | \$ 1,197        |  |  |
| # Internal - Non-AC    | \$ 260          | \$ -        | \$ -        | \$ -         | \$ 70         | \$ 190          |  |  |
| # Internal, Labor      | \$ 27           | \$ -        | \$ -        | \$ -         | \$ 1          | \$ 26           |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 1,590</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 24</b> | <b>\$ 134</b> | <b>\$ 1,431</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 640          | \$ 167          | \$ 473          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 4,378        | \$ 1,700        | \$ 2,678        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 491          | \$ 144          | \$ 347          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 439          | \$ 156          | \$ 283          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 551          | \$ 179          | \$ 372          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,499</b> | <b>\$ 2,346</b> | <b>\$ 4,153</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG FERC 2222

### PROJECT INFORMATION

|                                                                  |                                         |                                                |                                        |                                    |
|------------------------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                            | <b>Project ID:</b><br>PRJ-003771        | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Jones, Paul | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Model & Advanced Operations | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Jan-2024         | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This is a mandatory project based on FERC (Federal Energy Regulatory Commission) Order 2222. FERC 2222 requires RTOs (Regional Transmission Organizations) (including NYISO (New York Independent System Operator) and ISO-NE (Independent System Operator New England)) to allow aggregations of DERs (Distributed Energy Resources) to participate in wholesale markets as single resources. FERC Order 2222 is mandated to be in place by the end of 2026. NYISO has been approved by FERC to stand up an interim market, which is live as of 4/16/24. This requires Avangrid to stand-up processes in New York first in order to be compliant with this timing. ISO-NE will be developing their requirements in 2025, which would move much of our CMP and UI efforts into 2026.

This FERC order will create a whole new class of customer/supplier, with needs for communications/relations, billing, dispute resolution, etc. This can create challenges that will grow as market participation grows. This project will require the establishment of new business process models, along with system changes, such as, SAP, databases, automation and websites. This order applies to all Avangrid Electrical Operating Companies: NYSEG, RGE, CMP, and UI. The requirements will differ by ISO (NYISO and ISO-NE), but the project will leverage similarities across all Avangrid Operating Companies where possible.

#### Project Scope:

In 2024, the project focused on creation of TO-BE process models to support FERC Order 2222 for NYISO. In 2025 and 2026, the project will focus on system changes to support automation of the new process, which will include process automation, database enhancements, and SAP Billing changes. Another critical component is the setup of the communication link between the aggregators and our ECCs (Energy Control Centers), which will require hardware, licensing and platform support. Project support is planned for manual billing, SAP billing updates, coordinator role, change management and process modeling. The in service date for full compliancy is 12/31/2026.

High level breakdown of budget:

- HW/SW: Setup of Aggregator communication link to ECC; Process Automation through Salesforce; SAP Billing changes
- External: Contractor engagement for manual billing, SAP billing updates, process automation and project support
- Internal Labor: Core Team engaged and numerous subject matter experts allocated to the project

#### Project Benefits:

As this is a mandatory FERC Order, the main benefit is to be compliant with this order. FERC Order 2222 is creating a market for DER (Dist Energy Resources) Aggregation.

Other benefits include:

- Compliance with both FERC 2222 Order and NYISO wholesale market, therefore no risk of non-compliance issues or fines
- Determination of best approach for establishing communication link between aggregator and our ECC, to be used for all OpCo's
- FERC Order 2222 will provide aggregation of DERs, and allow for dispatching. With the dispatching of Demand Response, this will be new with this order and of great benefit to rate payers.
- Establishment of this new interim market for NY, prior to full FERC Order 2222 timing of 12/31/26, will provide increased internal knowledge and experience with this new market and how to manage it
- Planning for SAP billing changes while NYISO market still minimal, will reduce manual billing efforts once FERC Order 2222 is fully compliant
- Enabling additional clean, energy DER resources to enter the wholesale market. These additional clean, renewable resources will aid in meeting NYS environmental goals and reduce GHG emissions.
- implementation of this order may increase reliability as aggregations respond to load on the grid, such as, reducing load during peak times and providing generation.

**Project Risks and Mitigation Plan:**

1)Process Ownership: This FERC order creates an organizational risk, as these processes are new to our organization and it's not clear which area will be responsible. The team has identified the need for a new coordinator role to manage this process. Other areas impacted leverage existing processes, however, there is concern around the volume of enrollments and how this will grow over time, and being organizationally ready for this growth, if it occurs. This impacts the project as the coordinator needs to be identified early for engagement and training. Without clear ownership, it's difficult to get decisions on key topics. The team has created a task force to address this risk and bring a recommendation to leadership for decision. As a contingency, the project has identified an area and resource to support NYISO's interim market.

2)Duplicative Compensation: With this new wholesale market, there is a potential for resources to receive duplicative compensation. The FERC order states that if a DER participates in both retail and wholesale markets, market rules must prevent it from being compensated twice for the same service. The team has been working with the New York Joint Utilities to create a matrix that defines the various compensation programs and which ones a resource can participate in. The project will continue to refine this matrix to provide clear direction to resources on compensation and will work with NYISO as appropriate for guidance.

3)Interval Meter Requirement: NYISO requires a customer to have an interval meter to participate in the DER Aggregation program. In New York, MV90 meters will need to be used, because although the NY AMI meter project is underway, the AMI meters will not provide interval data functionality needed for bill settlement. The MV90 meters require a dedicated landline, which can potentially add cost to customers. The team is working to assure MV90 meters are available for this requirement. And there is a separate project in 2025 to add AMI interval meter functionality to SAP.

4)Manual Billing: Due to NYISO timing for start of enrollments, the immediate focus is on a manual billing process in order to fulfill billing of new aggregations anticipated in early 2025. The billing department has very limited resources to perform manual billing for these customers, so the project is working to bring on contractors to perform this work. Additionally, the project is planning to update SAP so that DERA billing will be automated.

**Risk of No Action:**

Regulatory Penalties and Reputation Risk: FERC Order 2222 is a mandatory regulation which mandates compliance by 12/31/2026. Additionally, NYSEG and RGE are within NYISO's territory and are required to follow NYISO's market design in response to FERC Order 2222. NYISO has created an interim market that went live in April 2024, which NYSEG and RGE are required to comply with. Non-compliance to either FERC Order 2222 or NYISO can cause reputational risk. Non-compliance can result in significant fines and penalties from regulatory bodies. There's also the risk of complaints from aggregators and customers, who may view our non-compliance as a roadblock to market participation.

**Project Alternatives:**

FERC Order 2222 mandates RTOs (Regional Transmission Organizations) to allow aggregations of DERs (Distributed Energy Resources) to participate in wholesale markets as single resources. While compliance with this order is mandated, there are no direct alternatives to meeting the specific requirements of FERC 2222. Due to the quick timing of the NYISO interim market, the project had to focus on manual efforts to support this new market, and determine technical specifications for establishing a communication link between our ECC and aggregators. Moving forward, the project will work on system solutions to automate these manual processes.

**Basis for Project Estimates**

The project cost estimates were driven by key project requirements and project team activities. The initial efforts on this project engaged internal personnel, and hardware/software expenses for building a required communication link. Internal efforts will continue through 2026, and external services are planned for project support (such as manual billing), creating a system to automate processes, and code SAP billing changes. We are working to gather vendor quotes, and have based some estimates on past project experiences. Additional project support costs (AFUDC/Internal and External Overheads) were also considered based on prior/known budget outcomes. Careful review of actual expenditures and a reconsideration of project estimates, overheads, and labor for the purpose of reforecasting are routinely conducted by the project team.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 3          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 3          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 99         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 99         |  |  |
| # Internal - Non-AC    | \$ 274        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 274        |  |  |
| # Internal, Labor      | \$ 3          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 3          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 379</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 379</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 234          | \$ 84           | \$ 150          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,178        | \$ 1,142        | \$ 2,036        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 520          | \$ 320          | \$ 200          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 338          | \$ 130          | \$ 208          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 448          | \$ 187          | \$ 261          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,717</b> | <b>\$ 1,863</b> | <b>\$ 2,854</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## IT-OT NERC CIP Asset Transition

### PROJECT INFORMATION

|                                                |                                  |                                         |                                    |                                     |
|------------------------------------------------|----------------------------------|-----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG                          | <b>Project ID:</b><br>PRJ-004446 | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Electric Transmission | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Mulholland, Ed | <b>Start Date:</b><br>Jan-2022     | <b>In-Service Date:</b><br>H2 2025  |

#### Project description:

Transition all 23 NERC CIP identified assets within New York State Electric & Gas (NYSEG) substations from the current Information Technology (IT) network over to Operations Technology (OT) network. North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Assets such as routers, switches, firewall, & telecom equipment in IT substations are coming to an End of Life and also potential loss of support and maintenance. Therefore, the assets from all the substations must be transitioned to OT as quickly and efficiently as possible. This will ensure NERC CIP compliance (CIP 002) requirements are maintained as we transition assets to OT.

Avangrid groups who utilize or support these NERC CIP Assets are Protection & Control (P&C), Operational Smart Grids (OSG) Infrastructure, and Physical Security.

This project will be started in August 2024 and expected to be completed in 2025.

Risk Prioritization: NYSEG (23) - High 1/ Medium 9/ Low 13

#### Project Scope:

The overall scope of this project is to transition assets such as routers, switches, firewall, & telecom equipment in 23 substations. This environment is currently owned by IT, and is being replaced and transitioned to OT in all aspects. We are utilizing the professional services from IRONHOUSE to accomplish this transition. Our internal groups from OT side of the company for Routers & Switches are being managed by P&C (Andre Mara), CheckPoint Firewall by Infrastructure Network (Kevin Levesque) and Cables & Telecom devices by Telecom (Bradley Jordan). The implementation is being coordinated with the field Operations Manager (Shirley Flinders).

23 substations in scope (Sullivan Park, Coopers Corner, Stony Creek, Fraser, ETNA[Ithaca], Meyer, New Gardenville, Robinson Rd.[Lockport], Somerset, West Erie Ave, Canandaigua, Clarks Corner, high Sheldon, Hillside, Meyers2, Oakdale, Stolle-230, Stolle-345, Stoney Ridge, Watercure, Wethersfield, Wood Street, Stolle-115)

#### Project Benefits:

1. Reduces risk of critical substation communications failure.
2. Replaces unsupported end of life hardware.
3. Centralizes operational responsibility and NERC-CIP compliance into a single organization.
4. Simplifies network mapping.
5. Aligns Networks organizational structure.

#### Project Risks and Mitigation Plan:

The key component in this transition is the SMP device that is currently connected to Cisco device in the IT environment need to be transitioned over to Checkpoint Firewall in the OSG environment. The initial plan was to implement with simple configuration change to establish a connection from SMP devices to Checkpoint Firewall, However, the top risk we identified is with the existing model (16SG) of the SMP devices. These are not manufactured by EATON and not in the market anymore. Hence, our mitigation plan is to procure the latest model SMP 4260s. The challenge here is the 4260s have 32 ports compared to 16SGs with 42 ports. Good news is that many substations in scope have active connections that are less than 32 ports. Hence, we will address all those substations first and leave the devices with more than 32 active connections to the end as we procure additional SMP devices to establish the connections.

NERC CIP Assets in the IT substations are coming to an End of Life and potential loss of support and maintenance. Therefore, the assets from all the substations must be transitioned to OT as quickly and efficiently as possible. This will ensure NERC CIP compliance (CIP 002) as we transition assets to OT (P&C, OSG Infra, OSG Telecom, Physical Security).

Plan A - NATing (Network Address Translation) solution. Not a best solution as the testing failed in lab.

Plan C – SMP 4260 Replacement with firmware upgrade. This is best and preferred solution.

### 1. External / Professional Services (TRC, IRONHOUSE, PTAG, UDI)

- ## 2. Materials (SMP 4260, CheckPoint FW, Fiber Cables, Power Supply and accesories)

- ### 3. AFUDC and Overhead charges

4. Internal Labor charges (Project Management and Field Operations personnel charging their time during the implementation at all substations in scope)

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 333        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 333        |  |  |
| # Internal - Non-AC    | \$ 116        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 116        |  |  |
| # Internal, Labor      | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2          |  |  |
| # Internal, Overheads  | \$ 61         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 61         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ 95         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 95         |  |  |
| <b>Total</b>           | <b>\$ 608</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 608</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 124          | \$ 71           | \$ 53           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,442        | \$ 1,184        | \$ 258          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ 220          | \$ -            | \$ 220          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 357          | \$ 207          | \$ 149          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 215          | \$ 137          | \$ 77           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 673          | \$ 303          | \$ 370          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 275          | \$ 168          | \$ 107          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,305</b> | <b>\$ 2,071</b> | <b>\$ 1,234</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## BES - South Oneonta Area - Fraser

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002297        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Fraser/ Delhi Solution is part of the NYSEG/RGE Bulk Electric System (BES) program. The objective of the NYSEG/RGE BES program is to identify and address system deficiencies on the portion of the BES owned by AVANGRID in compliance with mandatory reliability standards. The criteria and system performance requirements for the BES are provided in the North American Electric Reliability Corporation's (NERC) standard TPL-0011. Each transmission owner has an obligation to demonstrate through planning studies that its portion of the BES meets all mandatory NERC requirements. In cases where unacceptable reliability performance is detected, a documented Corrective Action Plan showing how these deficiencies will be mitigated must be developed. The Fraser Expansion and Delhi Removal Project is located in the southern portion of NYSEG's Oneonta district. Fraser is an existing 345/115 kV substation and is the strongest source into Oneonta's 115 kV system. Delhi is a 115/46 kV substation that is a 115 kV hub in the area and supplies several 115 kV interconnected distribution substations via two radial 115 kV lines. The project consists of a significant expansion of Fraser along with a complete removal of Delhi's 115 kV in order to improve reliability and address asset condition concerns.

#### Project Scope:

Fraser  
Expand the 345 kV to a 4-bay breaker-and-a-half  
Expand the 115 kV to a 4-bay breaker-and-a-half  
Build a new 46kV bus with bus-tie; terminate transformer winding on either side  
Install 2nd 345/115/46 kV 3-winding transformer  
Build 46 kV line 824 Tap to Delhi Co-op (3.5 Mile)  
Rebuild 115 kV line 916 Fraser – Delhi Segment (3.5 Mile)  
Fraser Reroutes - Move all 115kV lines from Delhi to Fraser (5 Mile) - L916, L917, L949, L919, L951  
Delhi  
Remove Delhi 115 kV substation switchyard  
Build new 46 kV line 841 from Fraser to Delhi 46 kV (5.5 Mile)  
Build a 46kV Bus with Tie-Breaker  
Replace two 12 kV Circuit Breakers  
Existing 115kV Lines 916, 917, 919, 949 and 951 are currently fed from Delhi substation. This project will split the L919 and 949 and new greenfield lines will be built into the new Fraser 115kV yard. Existing line 919 will be split into 919 to Oakdale and 917 to Andes. Existing line 949 will be split into 949 to Jennison and 916 to Axtell. Existing line 951 will be relocated from its current termination into the new 115kV yard. The total of the new line segments are approximately 4.5 miles long. This project will require approximately 16 miles of new transmission lines to be built or reconductored and will therefore require an amendment to the existing Article VII filing.

#### Project Benefits:

CEII starts [REDACTED]  
[REDACTED]  
[REDACTED] CEII\_ends

#### Project Risks and Mitigation Plan:

1. Cancellation of outages planned as per requirements : Mitigate by coordinating with relevant stakeholders in advance & schedule to reduce risks
2. Safety risks of working in a live substation : Mitigate by having strict safety system in place and with constant improvements from time to time
3. Investment plan changes leading to project pauses : Mitigate by ensuring funds are available for the firmed up project schedule



Several needs were identified on the Oneonta area that impacts the same vast underlying 46 kV subtransmission system. Due to these deficiencies, all of the alternatives in Oneonta require new sources to be brought in to the major 115 kV stations in the district. The full Oneonta alternative scope is listed below:

Expand the 115 kV bus at Colliers to a 3-bay breaker-and-a-half.

Tap 345 kV Line 40 and bring it in and out of the new station

Install two (2) new 115 kV lines from the new station to East Norwich.

Retire the 115 kV bus at Delhi and re-terminate the Delhi 115 kV lines into the expanded Fraser 115 kV bus.

This alternative was determined, by inspection, more costly and less feasible than the 115 kV solution and was not pursued further. The chosen alternative was selected as more cost effective and more feasible solution.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

| Capital Details:       | Total             | 2020             | 2021             | 2022             | 2023             | 2024             |  |  |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 28,654         | \$ 1,719         | \$ 3,037         | \$ 5,286         | \$ 8,317         | \$ 10,295        |  |  |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| # External Services    | \$ 77,826         | \$ 10,260        | \$ 15,430        | \$ 29,406        | \$ 15,393        | \$ 7,336         |  |  |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| # Internal, Labor      | \$ 1,711          | \$ 1,027         | \$ 197           | \$ 237           | \$ 137           | \$ 113           |  |  |
| # Internal, Overheads  | \$ 13,831         | \$ 2,122         | \$ 3,234         | \$ 4,925         | \$ 2,383         | \$ 1,166         |  |  |
| # Materials            | \$ 23,056         | \$ 4,771         | \$ 4,466         | \$ 8,988         | \$ 3,967         | \$ 865           |  |  |
| # Overheads - External | \$ 21,124         | \$ 3,113         | \$ 4,254         | \$ 7,327         | \$ 4,679         | \$ 1,751         |  |  |
| <b>Total</b>           | <b>\$ 166,201</b> | <b>\$ 23,011</b> | <b>\$ 30,618</b> | <b>\$ 56,170</b> | <b>\$ 34,876</b> | <b>\$ 21,527</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028        | 2029        | 2030        | 2031        |
|------------------------|-------------------|------------------|------------------|------------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 6,972          | \$ 4,953         | \$ 1,213         | \$ 806           | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 51,688         | \$ 20,729        | \$ 18,602        | \$ 12,357        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 3,426          | \$ 60            | \$ 2,022         | \$ 1,343         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 6,690          | \$ 2,026         | \$ 3,061         | \$ 1,603         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 25,353         | \$ 5,162         | \$ 12,132        | \$ 8,059         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 7,104          | \$ 1,895         | \$ 3,419         | \$ 1,791         | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 101,233</b> | <b>\$ 34,826</b> | <b>\$ 40,448</b> | <b>\$ 25,958</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## BES - Erie Street part of WBS UH-N0000581

### PROJECT INFORMATION

|                                   |                                         |                                                |                                           |                                    |
|-----------------------------------|-----------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002293        | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H1 2032 |

#### Project description:

Project Description & One-line: Erie St is a 115/34.5 kV substation with a straight bus configuration which is the main feed into the Lancaster 34.5 kV sub-transmission system. In 2018 Transmission Planning performed a comprehensive NERC TPL assessment. A fault on 115 kV Line 922 followed by a stuck breaker at Erie Street Substation results in the loss of 115/34.5 kV transformation at Erie Street and North Broadway Substations. This leaves the northern Lancaster 34.5 kV network to be fed radially from Pavement Road Substation. Under these conditions, voltage collapse in the surrounding area was observed.

#### Existing Configuration:

- 115 kV straight bus design

#### Asset Condition issues at this station

- Substation is approaching its end of life.
- Oil Circuit Breakers (poor condition and obsolete technology, ~50+yrs),
- Power Transformers (~ 50+yrs).
- Foundations (deteriorated).
- Corrosion of structural members

#### Project Scope:

- Rebuild the 115kV as a 3-bay Breaker-and-a-half (AIS)
- Install two 50 MVar 115 kV capacitors
- Replace 34.5kV AIS with 38kV GIS in a building
- Replace 4.8kV AIS with 15kV GIS in a building
- Replace two 115/34.5 kV transformers
- Replace two 34.5/4.8 kV transformers
- Replace one 34.5 kV 16.2MVar capacitor
- Replace two 4.8 kV 3.2MVar capacitors
- Replace Control House
- Reroute/Re-terminate existing 115kV, 34.5 kV and 4kV lines

#### Project Benefits:

This project will address the reliability and asset condition issues described below in the risks.

Terminating a new line into Erie St SS will mitigate all asset condition, and reliability deficiencies.

**Project Risks and Mitigation Plan:**

Risk 1 - Long-lead material procurements: In-service date highly dependent on material lead-times provided by power transformer, GIS, circuit-breaker, and control house vendors, currently reserving up to 4 years in advance. Susceptible to changes in global supply chain environment.

Mitigation: All long-lead major equipment can be promptly re-ordered upon project re activation, using specifications and clarifications from prior to project suspension.

Risk 2 - Coordination with Third-party Transmission utility at Remote-End interconnection points: NYSEG T-Lines have Remote-end connections with third-party utility. Commissioning with new substation will require coordination across utilities and work done external utility team at their site.

Mitigation: Contract external utility under Construction Reimbursement Agreement (CRA) to perform required works for Erie St substation compatibility with existing Remote-end stations.

-Projects group has recorded all prior lessons-learned from similar interconnection projects done with the help of external utility companies.

-Monthly, ongoing sync meeting with said external utility on all project interconnections. Good communication will be maintained throughout engineering, construction, and forecasting outages/worker utilization.

Risk 3 - Project suspension necessitating future re-work on engineering, procurement, and permitting upon re-activation: Due to previous project suspension, in early 2023, much of the existing material deliveries for Erie St have been re-allocated to other active projects. Engineering may no longer meet updated standards when project is re-activated. Permitting cycle to be restarted with municipalities

Mitigation: Prior to suspension, high-quality project documentation archived with complete status and background of permitting, procurement, engineering phases - ready to pickup where things were left off, upon project reactivation.

-NYSEG Spares program to order stock of transformers for future needs, without waiting for lead-time of new transformer order. Can possibly pull from Spares if/when Erie St. Project re-activated.

**Risk of No Action:**

Erie St. is a major source into a 34.5 kV network with serves roughly 200 MW of load. Voltage collapse or low voltage conditions can occur following:

[REDACTED]

**Project Alternatives:**

Due to the existing straight bus configuration at the Erie St Substation and its associated asset health concerns, no viable alternatives were identified [REDACTED]. All possible alternatives would involve a rebuild of the 115kV bus as bringing in new 115 kV sources into the existing straight bus design would not resolve the issue.

**Basis for Project Estimates**

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020        | 2021        | 2022        | 2023        | 2024             |  |  |
|------------------------|------------------|-------------|-------------|-------------|-------------|------------------|--|--|
| # AFUDC                | \$ 1,045         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,045         |  |  |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             |  |  |
| # External Services    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             |  |  |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             |  |  |
| # Internal, Labor      | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             |  |  |
| # Internal, Overheads  | \$ -344          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -344          |  |  |
| # Materials            | \$ -1,814        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -1,814        |  |  |
| # Overheads - External | \$ -398          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -398          |  |  |
| <b>Total</b>           | <b>\$ -1,511</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -1,511</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025            | 2026            | 2027            | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 4,754          | \$ 1,755        | \$ 51           | \$ 76           | \$ -             | \$ 1,220         | \$ 890           | \$ 761           |
| # CIAC                 | \$ -              | \$ -            | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 118,279        | \$ -            | \$ 907          | \$ 1,399        | \$ 63,145        | \$ 22,731        | \$ 16,423        | \$ 13,675        |
| # Internal - Non-AC    | \$ -              | \$ -            | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 4,998          | \$ -            | \$ 85           | \$ 126          | \$ -             | \$ 2,034         | \$ 1,484         | \$ 1,269         |
| # Internal, Overheads  | \$ 6,121          | \$ -            | \$ 128          | \$ 151          | \$ -             | \$ 2,231         | \$ 1,771         | \$ 1,841         |
| # Materials            | \$ 29,986         | \$ -            | \$ 508          | \$ 758          | \$ -             | \$ 12,205        | \$ 8,903         | \$ 7,612         |
| # Overheads - External | \$ 6,837          | \$ -            | \$ 143          | \$ 169          | \$ -             | \$ 2,492         | \$ 1,978         | \$ 2,056         |
| <b>Total</b>           | <b>\$ 170,975</b> | <b>\$ 1,755</b> | <b>\$ 1,821</b> | <b>\$ 2,679</b> | <b>\$ 63,145</b> | <b>\$ 42,913</b> | <b>\$ 31,449</b> | <b>\$ 27,213</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES - 981 Line Uprate

### PROJECT INFORMATION

|                                   |                                         |                                                |                                          |                                    |
|-----------------------------------|-----------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002287        | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

The Line 981 Uprate Project is part of the NYSEG/RGE Bulk Electric System (BES) program. The Line 981 Uprate Project is located in the Ithaca district of NYSEG's territory. The existing Line 981 is a 115 kV line that connects Etna in the North to Coddington in the southern portion of Ithaca. The project consists of uprating the line and improving relaying in order to improve reliability.

#### Project Scope:

Upgrade 115kV Line 981 - The capacity of Line 981 (E.Ithaca – Etna ST section) will be increased. This will be achieved by retiring approximately 3 miles of 336 kcm 26/7 Linnet ACSR from Etna ST until Structure 21 (Segment 1) and replacing it with a new High-Temp/Low-Sag ACCR conductor - Use 1192 ACSR1 conductor and OPGW from Etna to Coddington (6 Miles, Segments 1 and 3)

- Replace shieldwire from Etna to Coddington (6 Miles, Segments 1 and 3) with 7#7 Alumoweld
- Section from Etna to East Ithaca will be renamed Line 732
- Structures along the line will be modified or replaced as required with steel poles in order to meet the loading and clearance requirements
- The project scope does not impact the existing ROW configuration and structure replacements will be on the existing centerline. This project will require 3 miles of transmission line to be uprated and will not require an Article VII filing.

#### Project Benefits:

The capacity of Line 981 (E.Ithaca – Etna ST section) will be increased.

#### Project Risks and Mitigation Plan:

1. Public Opposition: There is a significant risk of opposition from landowners, universities, and the general public. The project is being constructed in a sensitive area with large college campuses, including Ithaca College, Cornell University, SUNY Cortland, and Tompkins Cortland Community College. To mitigate this risk, a project-specific public outreach plan has been developed. This plan aims to make information easily accessible and understandable, conduct face-to-face meetings with the public, municipalities, and elected officials, and provide opportunities for stakeholders to interact with project staff and subject matter experts (SMEs) to explain program elements and address concerns.
2. Changes in Design Standards, Regulations, and Codes: There is a risk that design standards, regulations, and codes may change due to the large pause between the end of engineering and the start of project construction. To mitigate this risk, all engineering drawings and standards will be reviewed by the owner's engineer and design firm prior to creating the Request for Proposal (RFP) for construction. This review process will ensure that the project complies with the latest standards and regulations.
3. Inadequate Material Storage Practices: Inadequate storage practices for materials, particularly steel structures, pose another major risk. The steel poles, which are ungalvanized, are currently sitting in Mexico awaiting transport due to the sudden pause in the project. To mitigate this risk, a thorough Factory Acceptance Test (FAT) must be completed prior to delivery and galvanization. This will ensure that the materials meet quality standards and are properly prepared for use in the project.

By proactively addressing these risks, the project team aims to minimize potential disruptions and ensure the successful completion of the project.

There are multiple contingencies that result in line 981 to become overloaded. If there is no action, there may be an increased risk of customer outages and an increased duration of these outages.

The only other viable alternative to the Line 981 uprate project would be to build a new parallel line to Line 998 or Line 981. A new line would require new structures, permitting, and substation work. This was seen as a much more expensive option and was not explored further. Selected Solution is Cost Effectiveness.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES - Border City / Haley

### PROJECT INFORMATION

|                                   |                                         |                                                |                                           |                                    |
|-----------------------------------|-----------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002289        | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards.

Border City 115/34.5 kV substation is located in the middle of NYSEG's Geneva district. Rebuild and capacitor bank addition is part of the Border city/Haley Road Solution. Both stations are 115/34.5 kV and feed into two separate 34.5 kV sub-transmission networks. The voltages and thermal loadings at these stations are heavily influenced by the Greenidge generator. The project consists of multiple aspects in order to improve reliability and address asset condition. The scope is listed below.

#### Asset Conditions

Substation is approaching end of useful life, incapable of accommodating reliability upgrades

Oil Circuit Breakers (poor condition and obsolete technology, ~50+yrs)

Power Transformers (~50+yrs)

Station suffered from poor drainage and has standing water after rain events

Station Control house has asbestos

Corrosion of structural steel

#### Project Scope:

Rebuild the station as a 115 kV 3-bay BAAH and the installation of two (2) 25 MVar 115 kV Cap Banks will address both reliability and asset condition needs.

- Install two 25 MVar 115 kV capacitors at Border City

- Rebuild the station as a 115 kV 3-bay BAAH GIS

- Replace 34.5kV AIS with 34.5kV GIS in a building

- Replace two 115/34 kV transformers

- Replace Control House

- Re-terminate the existing 115 and 34.5 kV lines into the rebuilt station

#### Project Benefits:

This project will address the reliability and assets condition issues described above. Rebuilding the station as a 115 kV 3-bay BAAH and the installation of two (2) 25 MVar 115 kV Cap Banks will address both reliability and asset condition needs.

With existing configuration of 115 kV straight bus design with bus tie breaker, Border City has a strong source from L977 and a weaker source from L979 and L969 is not a source if Greenidge is OOS. Substation has two voltage levels (115 and 34.5 kV) and following BES Violations can occur:

[REDACTED]

#### Project Risks and Mitigation Plan:

Risk 1 - Long-lead material procurements: In-service date highly dependent on material lead-times provided by power transformer, 115kV GIS, 34.5kV GIS, and control house vendors, currently reserving up to 4 years in advance. Susceptible to changes in global supply chain environment.

Mitigation: All long-lead major equipment can be promptly ordered upon project re-activation, and after taking another look at the project technical solution.

Risk 2 - 115kV GIS and 34kV GIS are planned - SF6-Free will be needed, necessitating longer procurement lead-time and 50% higher cost than originally planned SF6 GIS.

Mitigation: Need for GIS SF6-Free will be revisited in a technical review, before further project execution.

Risk 3 - Boundary of new substation overlaps with existing New York Department of Environmental Conservation (NYDEC) jurisdictional wetland per previous site surveys.

Mitigation: Perform new surveys to get updated data on whether or not project footprint still intersects with a wetland. If so, consider alternate project layout or site locations and further engage NYSEG permitting team with external stakeholders.

#### Risk of No Action:

The N-1 (single outage) loss of [REDACTED]

[REDACTED]

The alternative to the Border City project would require a new 115 kV source to be brought into Border City. This would also require a new switching station as well as a new 115 kV line that is at least 4 miles in length, due to the remoteness of the Geneva area from other 115 kV lines. This was deemed too expensive, compared to the capacitor project that would solve all the identified needs.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ 19        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 19        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 19</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 19</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total             | 2025         | 2026         | 2027         | 2028        | 2029             | 2030             | 2031        |
|------------------------|-------------------|--------------|--------------|--------------|-------------|------------------|------------------|-------------|
| # AFUDC                | \$ 1,652          | \$ 30        | \$ 1         | \$ 1         | \$ -        | \$ 1,620         | \$ -             | \$ -        |
| # CIAC                 | \$ -              | \$ -         | \$ -         | \$ -         | \$ -        | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 108,862        | \$ -         | \$ 15        | \$ 16        | \$ -        | \$ 24,282        | \$ 84,550        | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -         | \$ -         | \$ -         | \$ -        | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ 2,703          | \$ -         | \$ 2         | \$ 2         | \$ -        | \$ 2,700         | \$ -             | \$ -        |
| # Internal, Overheads  | \$ 2,966          | \$ -         | \$ 2         | \$ 2         | \$ -        | \$ 2,961         | \$ -             | \$ -        |
| # Materials            | \$ 16,219         | \$ -         | \$ 10        | \$ 10        | \$ -        | \$ 16,199        | \$ -             | \$ -        |
| # Overheads - External | \$ 3,313          | \$ -         | \$ 3         | \$ 2         | \$ -        | \$ 3,307         | \$ -             | \$ -        |
| <b>Total</b>           | <b>\$ 135,715</b> | <b>\$ 30</b> | <b>\$ 33</b> | <b>\$ 33</b> | <b>\$ -</b> | <b>\$ 51,069</b> | <b>\$ 84,550</b> | <b>\$ -</b> |

[illegible]



## BES - Coopers Corners

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002291        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>H1 2027 |

#### Project description:

The Coopers Corners Project is located in the Liberty district of NYSEG's territory. Coopers Corners is an important 345/115/34.5 kV substation feeding the 115 kV and 34.5 kV transmission systems in Liberty.

#### Existing Configuration:

115 kV straight bus design with bus tie breaker, Cooper's Corners is the only source into the Liberty district, Three voltage levels (345, 115, 34.5 kV)

#### Existing Need(s):

[REDACTED]

#### Project Scope:

- Expand 345kV with one breaker and a half (BAAH) AIS bay with one position
- Add 2 New 34kV breakers
- Install one new additional breaker to complete third 345kV BAAH bay
- Replace Transformer (B2) and re-terminate into previous Line 42 position
- Install one new 345/115 kV transformer (B5) and terminate in new 345kV bay
- Install new 345/115 kV transformers (B3)
- Install 345/115kV transformer (B2)
- Rebuild 115 kV as a 4-Bay Breaker-and-a-half (BAAH) GIS in a building.
- Install new 115/34.5 kV transformer (B4)
- Install new 115/34.5 kV transformer (B1)
- Replace the existing 34.5 kV grounding bank

#### Project Benefits:

[REDACTED]

Current scope was chosen because addressed both, reliability, and asset condition needs.

#### Project Risks and Mitigation Plan:

Risk 1 - 115kV GIS is planned - SF6-Free will be needed, necessitating longer procurement lead-time and 50% higher cost than originally planned SF6 GIS.

Mitigation: Project still needs to undergo Transmission Planning finalization of scope and full technical approval - in these stages, the needs for a GIS SF6 Free will be re-evaluated alongside other possible alternatives.

Risk 2 - Substantial upgrades and expansion to existing brown-field substation yard. Construction likely to impact to service to existing customer base during project outages and construction duration to allow for safe working conditions.

Mitigation: Project construction sequence will be phased such that partial energization of each voltage level is maintained. Project schedule will be coordinated with other projects and local operations to ensure remote-end substations can continue to operate in cases where power from Coopers Corners to remote-end is reduced and that Coopers Corners Distribution customers can continue to be fed by remote-end feeds during Coopers Corners outages.

Risk 3 - Need to add a 345/115kV transformer and replace (1) 345kV/115kV transformer due to asset condition. Will be technically difficult and costly to order these two transformers with matching characteristics to the other remaining 345kV transformers. Procurement lead-times will be long and costs likely to be higher than initial estimates due to inflation.

Mitigation: Save cost by replacing the third 345kV transformer at the same time, matching all three transformer characteristics at the factory. Bundle and order from the same manufacturer after competitive bid to receive the best price and mitigate inflated prices as much as possible. Consider bundling with or without the required 115/34.5kV transformer to achieve most efficient pricing from the market. Begin procurement process shortly after technical approval to mitigate long lead time.

\_\_\_\_\_

A potential alternative that was considered to the Coopers Corners solution would leave the 115 kV bus as a straight bus and add two additional bus-tie breakers. However, the 115 kV station would still be exposed to several N-1 (single outage) contingencies removing multiple 115 kV elements.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## BES - Frog Valley part of WBS UH-N0000581

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002294        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards.

#### System Overview

The electric system within the NYSEG serves approximately 905,000 electricity customers. The high forecasted load growth necessitates proactive grid expansion to address capacity constraints and support economic development. Forecasted load growth based on the NYISO Gold Book and internal forecasting indicates the following:

- Forecasted Winter Peak Load Growth: 3% by 2028 and 15% by 2034
- Forecasted Summer Peak Load Growth: 3% by 2028 and -2% by 2034

The Frog Valley Project is in the Lancaster district of NYSEG's territory, south of the city of Lancaster. Frog Valley is a 34.5 kV substation located in the 34.5 kV sub-transmission system that is remote from any strong 115 kV sources. The 34.5 kV network is served from three dispersed 115 kV sources at Cold Springs Road, Machias, and North Angola Substations.

#### Needs Assessment

Comprehensive studies identified wide range of reliability criteria violations (including thermal overloads, severe voltage violations or voltage collapse) which pose significant risks to the reliability of NYSEG's bulk transmission system. Summer and winter peak conditions were assessed. The TPL compliance assessment is focused on adherence to the performance criteria established in NERC TPL-001-5. It does not include an assessment of Asset Condition. BES projects from the TPL assessment are preliminarily scoped based on reliability-only needs, and scopes are later adapted to include mitigation for relevant asset condition needs and be right-sized to maximize local system capacity. [REDACTED]

[REDACTED] This project is proposing a reconfiguration of Frog Valley to prevent voltage collapse and a potential black-out from happening in the Gowanda area.

#### Project Scope:

The project consists of the following upgrades to improve reliability and asset condition concerns:

##### At Frog Valley:

- Install 1x10 MVar 34.5 kV STATCOM with associated breaker.
- Install 2 34.5 kV breakers on L500 and L501 terminals.
- Expand 34.5 kV bus as needed (straight bus).

#### Project Benefits:

The benefits of the project are:

- Compliance with NERC reliability standards
- Maintain or improve customer experience and satisfaction that improves SAIFI and CAIDI scores.

#### Project Risks and Mitigation Plan:

Based on the electrical configuration of the region, there has to be significant coordination among the necessary stakeholders to limit the number of customers that may be without power due to scheduled outage. The customers that are currently served by Frog Valley will have to be served from a different station while Frog Valley is undergoing its reconfiguration. A plan has to be in place to safely and reliably serve these customers for the duration of the Frog Valley project. If existing station transformers do not have capacity to serve Frog Valley's customers, a mobile station or other means should be available to provide service to these customers.

Taking no action could result in failure to comply with NERC TPL-001 standards which could result in penalties and increased scrutiny from regulatory bodies.

Taking no action could also impact the accomplishment of the State's CLCPA goals since there is likely insufficient capacity to support the electrification of large loads such as School Buses or fast-charging stations. This may result in more costs being borne by customers or electrification projects being delayed or abandoned.

There are a couple of alternatives to the Frog Valley project with varying degrees of complexity. One alternative is to distribute capacitors between Frog Valley, Ellington, and Randolph. This was found to be more expensive than the selected alternative. Additionally, a new 115 kV source into the Gowanda area could also solve the needs, however, due to the remoteness of the Gowanda area, this would require a 115 kV or 34.5 kV line that could be 20 miles or longer. As a result, cost estimates for this alternative were not developed.

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES - Fuller Hollow / Langdon

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002295        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H1 2035 |

#### Project description:

The Langdon Rd Project is part of the NYSEG/RGE Bulk Electric System (BES) program. Langdon Rd Project is located in the Southern portion of the Binghamton district of NYSEG's territory. Langdon Rd Substation is a currently existing substation, built in 1962 to accommodate 115 kV transmission, 34.5 kV sub-transmission and 12 kV distribution voltages. Langdon Rd Substation is one of the primary sources for Binghamton's 34.5 kV sub-transmission

network. Designed as a single straight bus with a 115 kV tie breaker, the station is operated in the normally closed position.

Key Transmission Elements:

- (2) 115 kV lines connected through disconnect switches to (2) 115/34.5 kV transformers connected through dedicated breakers.
- The 34.5 kV sub-transmission bus is connected to three (3) networked sub-transmission circuits and two (2) 34.5/12 kV distribution transformer banks.
- The 12 kV distribution bus is connected to three (3) distribution circuits.

Asset Conditions:

Deficiencies based on visual assessment. Obsolete or unsupported equipment at or near its end of life, poor health conditions, Several locations where foundations are in poor condition (e g cracking, spalling, etc.)

Several locations where the structures are in poor condition (e g corrosion, loss of galvanized coating, etc.)

34.5 kV and 12 kV oil breakers were determined to be in poor or very poor condition per AM 2017 /2019 Breaker Assessment.

MV 34.5/12 kV transformers have 50 years in service, 115 kV Bk 3 Transformer have 40 years in service.

Control house in poor condition with limited space to expand.

Obsolete electromechanical relays which are unsupported by the manufacturer.

Flooding risk (115 kV switchyard and substation access routes) according to the 100 yrs flood levels map.

#### Project Scope:

Langdon Rd

Re-build 115kV as a 3-bay Breaker-and-a-half (AIS)

Relocate existing 115/34.5kV transformer

Install new one 115/34.5kV transformer

Install new two 34.5/12kV transformer

Replace 34.5kV AIS with 38kV GIS in a building

Replace 4kV AIS with 15kV GIS in a building

Reroute/Re-terminate all existing 115kV, 34kV, 12kV Lines (4 Mile)

Build a new 115 kV line 735 from Fuller Hollow to Morgan Road (5.1 Mile)

Build a new 115kV line 936W from Morgan Road to Langdon Rd (3.5 Mile)

Join existing 115kV lines 937 and 936 between Fuller Hollow and Langdon Rd at Morgan Rd location and rename full line to Note:

This project is integrated part of Fuller Hollow SS -Langdon Road SS, and one new transmission Lin L727 . This solution will also require approximately 3 miles of transmission lines to be built and reconductored to bring the 939 line from Oakdale with Fuller Hollow and approximately 8.6 miles of new 115kV L727 transmission line to connect Langdon Rd with Fuller Hollow. Therefore, it will require an Article VII filing.

#### Project Benefits:

Thus project would resolve identified deficiencies and improve system reliability, such as:

Full rebuild provides 50 year life expectancy for entire station. Lowest construction complexity by permitting new station to be built prior to cutovers. No land purchase required (parcel owned by Avangrid) Away from flooding risk area.

**Project Risks and Mitigation Plan:**

Risk 1 - Easement acquisition and crossing agreements: Continued difficulty in voluntarily engaging landowner cooperation on most critical and most required easement region.

Mitigation: Continued efforts between Avangrid ELM, Public Outreach and Legal teams to contact landowner attorney. Legal escalation plan in place in case of continued non-cooperation

Risk 2 - Complex Construction and Outage Sequence with the goal of minimizing risk and maximizing continuity of service.

Mitigation: Developing and focusing on engineering for cutover packages and detailed outage plans. Schedules will be synchronized with all projects occurring simultaneously that are directly or indirectly related to the Fuller Hollow/ Langdon Road Solution project.

Risk 3 - Long-lead material procurements: In-service date highly dependent on material lead-times provided by power transformer, circuit-breakers, and control house vendors, currently reserving up to 4 years in advance. Susceptible to changes in global supply chain environment.

Mitigation: Maintaining ongoing, open dialogue with vendors for material forecasting. Started orders for most major equipment, earlier than usual in project life cycle.

**Risk of No Action:**

[REDACTED]

**Project Alternatives:**

Alternative 1 :

Full AIS BAAH Rebuild of 115 kV in new parcel across the road, leaving existing 34.5kV/12 kV structures with replacement of MV equipment: equipment:\$76.6M (+ 25%) Land purchase is required for project development (Willow Run Foods) Land acquisition could be done through a condemnation process for being this project an Article VII Possible construction constraints in a small portion of this parcel (adjacent to the river) due to the archaeological resources (from pre colonial Native Americans) that could be present in this area according to the most recent Archaeology Map 60 year old 34 5 kV/ 12 kV open air box structure design remains Aging 34 5 kV/ 12 kV structures/foundations 1962 bus work, and insulators Remaining outage risks include animal contact, lightning, contamination, etc. Construction sequence plan will require special measures to remove and install MV transformers due to the current location Increased O&M complexity associated with physically separate 34 5 12 kV and 115 kV yards ( troubleshooting, etc. Both 115 kV and 34 5 kV yards will be close to a flooding risk area. Access roads to the Substation in risk to be blocked by a flood event ..(FEMA 100 year flood zones Maps)

Alternative 3 :

Full AIS BAAH Rebuild of 115 kV & Medium Voltage GIS rebuild in new parcel across the road: \$83.4M (+ 25%) Land purchase is required for project development (Willow Run Foods) Land acquisition could be done through a condemnation process for being this project an Article VII Possible construction constraints in a small portion of this parcel (adjacent to the river) due to the archaeological resources (from pre colonial Native Americans) that could be present in this area according to the most recent Archaeology Map Both 115 kV and 34 5 kV yards will be close to a flooding risk area. Access roads to the Substation in risk to be blocked by a flood event per 100 year flood zones. Full rebuild provides 50 year life expectancy for entire station. Lowest construction complexity by permitting new station to be built prior to cutovers.

**Basis for Project Estimates**

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 102        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 102        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 102</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 102</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025          | 2026         | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|---------------|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 617           | \$ 174        | \$ 2         | \$ 36           | \$ 72           | \$ 45           | \$ 159          | \$ 129          |
| # CIAC                 | \$ -             | \$ -          | \$ -         | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 6,788         | \$ -          | \$ 38        | \$ 553          | \$ 1,105        | \$ 683          | \$ 2,431        | \$ 1,979        |
| # Internal - Non-AC    | \$ -             | \$ -          | \$ -         | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 738           | \$ -          | \$ 4         | \$ 60           | \$ 120          | \$ 74           | \$ 264          | \$ 215          |
| # Internal, Overheads  | \$ 921           | \$ -          | \$ 6         | \$ 72           | \$ 134          | \$ 81           | \$ 315          | \$ 312          |
| # Materials            | \$ 4,427         | \$ -          | \$ 25        | \$ 361          | \$ 721          | \$ 445          | \$ 1,585        | \$ 1,291        |
| # Overheads - External | \$ 1,029         | \$ -          | \$ 7         | \$ 80           | \$ 150          | \$ 91           | \$ 352          | \$ 349          |
| <b>Total</b>           | <b>\$ 14,521</b> | <b>\$ 174</b> | <b>\$ 82</b> | <b>\$ 1,161</b> | <b>\$ 2,303</b> | <b>\$ 1,419</b> | <b>\$ 5,107</b> | <b>\$ 4,275</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES - Klinekill RPR

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                     |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002296        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2030            | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards.

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, significant changes have been proposed to the originally planned PRJ-002296\_NE\_BES - Klinekill RPR project. These changes are driven by the forecasted load growth in the winter peak scenario. The newly proposed Klinekill project involves constructing a new 115kV transmission line and adding additional reactive power support devices.

#### East Birkshire Area Overview:

The East Birkshire area consists of two 115/34.5kV substations, Klinekill and Stephentown, and underlying 34.5kV network. Klinekill and Stephentown 115kV substations are the primary sources of power for the area. The electric system within the East Birkshire Area serves approximately 13,850 electricity customers, with a projected peak of 81 MW winter peak load.

#### Needs Assessment:

Due to the heavy load in the East Birkshire Area, [REDACTED]

[REDACTED] This necessitates the proposed enhancements to ensure reliable supply and compliance with NERC standards.

#### Project Scope:

The conceptual project, developed as part of the 2023 TPL-001 Compliance assessment, includes essential transmission upgrades to address identified needs within the next 10 years. The project is currently in the conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.

The conceptual project includes the following developments:

1. Klinekill substation upgrade
  - Install one (1) new 115/34.5kV transformer
  - Install one (1) new 20MVar 115kV shunt capacitor
2. Stephentown Reactive Power Support
  - Install one (1) new 10MVar 34.5kV shunt capacitor at Stephentown

#### Project Benefits:

**Reliability NYSEG:** Resolves a NERC TPL reliability violation. This violation represents a risk to NYSEG customers and equipment, and resolution provides a benefit to all customers in the region beyond the stations where upgrades are directly occurring.

**Asset Condition:** Equipment that is in poor, or very poor condition have exceeded their useful life and should be replaced to limit the risk of equipment-related outages. Such equipment are included for replacement or retirement in the conceptual solution. Site inspections will be performed to identify any additional asset condition needs.

**Capacity:** Creates a relatively large amount of capacity in the region. The existing reliability violations constrain the region's ability to accept significant load growth. This new tie strengthens the local network and supports capacity being gained (exact gain varies significantly by location).

#### Project Risks and Mitigation Plan:

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-of-way Acquisition: Securing the necessary land or easements for the new transmission line can be time-consuming and contentious. To mitigate this risk, NYSEG engages with landowners early in the process to negotiate easements and address concerns.



This project addresses system Needs that exist today. As long as these risks continue unmitigated, there is abnormal risk to customer reliability and equipment security. Additionally, until these Needs are resolved, they are restricting the capacity that is available for load growth in the relevant areas. Delaying these projects may suppress economic growth in the affected region.

Taking no action could also result in failure to comply with NERC TPL-001 standards which could result in penalties and increased scrutiny from regulatory bodies.

An alternative solution would be to bring a new line from Churchtown to Klinekill. Due to longer line length, this alternative solution is expected to have potential higher cost and social/environmental impact than the preferred solutions. Therefore, this alternative was not pursued further.

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES - Ten Mile River to

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002301        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2040 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. The Ten Mile River project scope is largely the same as previously proposed with exception that additional reactive power support is needed which improves voltage performance in the North Brewster Area .

PRJ-002301\_NE\_BES - Ten Mile River project was originally proposed as part of the 2018 NERC TPL-001 compliance studies. The Ten Mile River Project is located in the northern portion of the Brewster district of NYSEG's territory. The project includes constructing a 115 kV bus and installation of a 115/46 kV transformer at Ten Mile River, and building a new 115 kV transmission line from Pleasant Valley to Ten Mile River. This document focuses on the substation scope.

#### System Overview

The electric system within the NYSEG serves approximately 905,000 electricity customers. The high forecasted load growth necessitates proactive grid expansion to address capacity constraints and support economic development. Forecasted load growth based on the NYISO Gold Book and internal forecasting indicates the following:

- Forecasted Winter Peak Load Growth: 3% by 2028 and 15% by 2034
- Forecasted Summer Peak Load Growth: 3% by 2028 and -2% by 2034

#### Needs Assessment

Comprehensive studies identified wide range of reliability criteria violations (including thermal overloads, severe voltage violations or voltage collapse) which pose significant risks to the reliability of NYSEG's bulk transmission system. Summer and winter peak conditions were assessed. The TPL compliance assessment is focused on adherence to the performance criteria established in NERC TPL-001-5. It does not include an assessment of Asset Condition. BES projects from the TPL assessment are preliminarily scoped based on reliability-only needs, and scopes are later adapted to include mitigation for relevant asset condition needs and be right-sized to maximize local system capacity.

#### Project Scope:

The conceptual projects developed as part of the 2023 TPL-001 Compliance assessment includes transmission upgrades needed to address identified system needs within the next 10 years. The projects are currently in a conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.

The scope is listed below:

- Install one (1) new 115/46 kV transformer at Ten Mile River
- Install one (1) new +/- 36MVar dynamic reactive power support device (SVC or STATCOM) at Croton Falls

#### Project Benefits:

The primary driver of this project is to address reliability concerns within the NYSEG bulk transmission system due to the increased demand in the next 10 years.

**Reliability:** The project will enhance the reliability, capacity, and stability of the bulk transmission system. By upgrading infrastructure, adding reactive power support, and constructing new transmission lines, the projects ensure a more stable power supply and accommodate growing demand. They also provide operational flexibility, support regulatory compliance, and offer economic benefits by reducing outage-related costs.

**Asset Condition:** Equipment that is in poor, or very poor condition have exceeded their useful life and should be replaced to limit the risk of equipment-related outages. Such equipment are included for replacement or retirement in the conceptual solution. Site inspections will be performed to identify any additional asset condition needs.

**Capacity:** Creates a relatively large amount of capacity in the region. The existing reliability violations constrain the region's ability to accept significant load growth. This new tie strengthens the local network and supports capacity being gained (exact gain varies significantly by location).

**Project Risks and Mitigation Plan:**

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

**Risk of No Action:**

This project addresses system Needs that exist today. As long as these risks continue unmitigated, there is abnormal risk to customer reliability and equipment security. Additionally, until these Needs are resolved, they are restricting the capacity that is available for load growth in the relevant areas. Delaying these projects may suppress economic growth in the affected region.

Taking no action could also impact the accomplishment of the State's CLCPA goals since there is likely insufficient capacity to support the electrification of large loads such as School Buses or fast-charging stations. This may result in more costs being borne by customers or electrification projects being delayed or abandoned.

Taking no action could also result in failure to comply with NERC TPL-001 standards which could result in penalties and increased scrutiny from regulatory bodies.

**Project Alternatives:**

The alternative to Ten Mile River Project involved rebuilding Pawling as a 3-bay breaker-and-a-half station. A new 115 kV line would be built to Fishkill, as well as a new 115 kV line to Ten Mile River. This alternative solution was ultimately abandoned due to the cost being significantly higher and obtaining right-of-way to Fishkill seems infeasible.

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ 33        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 33        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 33</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 33</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025         | 2026        | 2027        | 2028        | 2029        | 2030            | 2031             |
|------------------------|------------------|--------------|-------------|-------------|-------------|-------------|-----------------|------------------|
| # AFUDC                | \$ 333           | \$ 53        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 87           | \$ 194           |
| # CIAC                 | \$ -             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             |
| # External Services    | \$ 14,863        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 4,606        | \$ 10,257        |
| # Internal - Non-AC    | \$ -             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             |
| # Internal, Labor      | \$ -             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             |
| # Internal, Overheads  | \$ 2,012         | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 543          | \$ 1,469         |
| # Materials            | \$ 9,254         | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2,868        | \$ 6,387         |
| # Overheads - External | \$ 1,945         | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 525          | \$ 1,421         |
| <b>Total</b>           | <b>\$ 28,408</b> | <b>\$ 53</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 8,628</b> | <b>\$ 19,727</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## BES - Sleight Road StatCom

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002302        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. The Sleight Road project primarily includes the construction of a new transmission line which improves reliability and capacity in a wide region around NYSEG's Geneva and RG&E's Lakeshore divisions.

#### System Overview

The electric system within the NYSEG serves approximately 905,000 electricity customers. The high forecasted load growth necessitates proactive grid expansion to address capacity constraints and support economic development. Forecasted load growth based on the NYISO Gold Book and internal forecasting indicates the following:

- Forecasted Winter Peak Load Growth: 3% by 2028 and 15% by 2034
- Forecasted Summer Peak Load Growth: 3% by 2028 and -2% by 2034

#### Needs Assessment

Comprehensive studies identified wide range of reliability criteria violations (including thermal overloads, severe voltage violations or voltage collapse) which pose significant risks to the reliability of NYSEG's bulk transmission system. Summer and winter peak conditions were assessed. The TPL compliance assessment is focused on adherence to the performance criteria established in NERC TPL-001-5. It does not include an assessment of Asset Condition. BES projects from the TPL assessment are preliminarily scoped based on reliability-only needs, and scopes are later adapted to include mitigation for relevant asset condition needs and be right-sized to maximize local system capacity.

#### Project Scope:

- Expand Sleight Road 115 kV bus with an additional 115 kV breaker and associated terminal equipment. [REDACTED]
- Expand Station 216 115 kV bus with an additional 115 kV breaker and associated terminal equipment. [REDACTED]
- Route and construct new 115 kV line between Sleight Road and Station 216. Approximately 13 miles, 1590 AAC. Make use of existing right of ways

#### Project Benefits:

Reliability NYSEG: Resolves three NERC TPL reliability violations. These violations represent a risk to NYSEG customers and equipment, and resolution provides a benefit to all customers in the region beyond the stations where upgrades are directly occurring.

Reliability RG&E: Builds towards resolution for RG&E's most severe single-contingency loss of load exposure. Additional scope would be required to fully eliminate this exposure, but this project significantly contributes to reducing risk and providing a foundation for future expansion.

Asset Condition: Equipment that is in poor, or very poor condition have exceeded their useful life and should be replaced to limit the risk of equipment-related outages. Such equipment are included for replacement or retirement in the conceptual solution. Site inspections will be performed to identify any additional asset condition needs.

Capacity: Creates a relatively large amount of capacity in the region. The existing reliability violations constrain the region's ability to accept significant load growth. This new tie strengthens the local network and supports capacity being gained (exact gain varies significantly by location).

#### Project Risks and Mitigation Plan:

Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

**Risk of No Action:**

This project addresses system Needs that exist today. As long as these risks continue unmitigated, there is abnormal risk to customer reliability and equipment security. Additionally, until these Needs are resolved, they are restricting the capacity that is available for load growth in the relevant areas. Delaying these projects may suppress economic growth in the affected region.

Taking no action could also impact the accomplishment of the State's CLCPA goals since there is likely insufficient capacity to support the electrification of large loads such as School Buses or fast-charging stations. This may result in more costs being borne by customers or electrification projects being delayed or abandoned.

**Project Alternatives:**

An alternative considered was the addition of a 34.5 kV STATCOM at Sleight Road. In previous studies, this solution was proposed and was expected to be sufficient to resolve the local voltage violations. However, with the updated load growth projections from the most recent TPL analysis, it became clear that the STATCOM would not fully resolve all of the violations in this region.

Variations of the preferred solution have been considered. Expanding Sleight Road and/or Station 216 to a breaker-and-a-half configuration is expected to increase cost, but provides additional benefits to the local area for future growth. A thorough cost/benefits analysis will be performed on the specific variations of the 115 kV bus arrangements to maximize the project's efficiency.

Additional scope was proposed at Station 216 to add a 2nd 115/34.5 kV transformer because of a reliability need identified in an independent study. That scope was omitted from this project to maintain clarity between system needs and their associated solutions. However, depending on funding availability at time of execution, adding this scope to the project may result in minimizing cost as compared to executing two separate projects.

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ 14        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 14        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 14</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 14</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025         | 2026        | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|------------------|--------------|-------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 893           | \$ 22        | \$ -        | \$ 112           | \$ 176           | \$ 235           | \$ 214           | \$ 133           |
| # CIAC                 | \$ -             | \$ -         | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 46,185        | \$ -         | \$ -        | \$ 5,950         | \$ 9,346         | \$ 12,469        | \$ 11,351        | \$ 7,070         |
| # Internal - Non-AC    | \$ -             | \$ -         | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 568           | \$ -         | \$ 1        | \$ 1             | \$ 122           | \$ 202           | \$ 241           | \$ -             |
| # Internal, Overheads  | \$ 5,481         | \$ -         | \$ 0        | \$ 701           | \$ 1,043         | \$ 1,366         | \$ 1,358         | \$ 1,013         |
| # Materials            | \$ 28,757        | \$ -         | \$ -        | \$ 3,705         | \$ 5,819         | \$ 7,763         | \$ 7,067         | \$ 4,402         |
| # Overheads - External | \$ 5,399         | \$ -         | \$ 0        | \$ 678           | \$ 1,029         | \$ 1,355         | \$ 1,357         | \$ 979           |
| <b>Total</b>           | <b>\$ 87,282</b> | <b>\$ 22</b> | <b>\$ 2</b> | <b>\$ 11,148</b> | <b>\$ 17,535</b> | <b>\$ 23,391</b> | <b>\$ 21,588</b> | <b>\$ 13,597</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## New 115 kV Baker Hill Substation

### PROJECT INFORMATION

|                                   |                                         |                                               |                                          |                                    |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002307        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2035 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards.

This project is integrated part of BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are separate project definition. New 115/46 kV substation located approximately three (3) miles northwest of the existing 46 kV Pierce Ave substation along the existing 345 kV NYPA ROW.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. The pre-conceptual was developed as part of the 2018 TPL-001 includes essential transmission and distribution upgrades to address identified needs. The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed. The selected solution consists of a new 115/46 kV substation located approximately 4.5 Miles directly east of the existing 46 kV Morris substation. Two bay BAAH 115/46 kV substation to act as 115 kV tie point between Northeastern and Northwestern Oneonta, Requires 1x10MVar capacitor on 115 kV as well as 1x115/46 kV transformer 46 kV bus will only have one line going to the existing Morris Substation

Two bay BAAH 115/46 kV substation  
New 2 Bay 115kV with 5 breakers, BAAH with 40ka SC  
New 46kV Bus with 31.5ka SC  
46 kV bus will have two lines; one to Morris, one to Pierce Ave  
1x30MVar capacitor on 115 kV  
1x115/46 kV 50 MVA transformer

This project is integrated part of Solution BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are separate project definition.

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission. As a result,

The new 115/46 kV Baker Hill Substation and associated 115/46 kV line projects will aid in the mitigation of initiating reliability needs.

#### Project Risks and Mitigation Plan:

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) design changes, construction and outage sequences, land acquisitions, permitting, long lead items procurement, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.



### Multiple contingency (and contingency pairs)

The new 115/46 kV Baker Hill Substation and

Alternative is to build New Morris Substation: A new 115/46 kV substation located approximately 4.5 Miles directly east of the existing 46 kV Morris substation. \$83.8M (+200/-50%). Two bay BAAH 115/46 kV substation to act as 115 kV tie point between Northeastern and Northwestern Oneonta. Requires 1x10MVar capacitor on 115 kV as well as 1x115/46 kV transformer. 46 kV bus will only have one line going to the existing Morris Substation. This alternative was dismissed as a non-viable option due to permitting, complexity, and environmental impact.

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023         | 2024        |  |  |
|------------------------|--------------|-------------|-------------|-------------|--------------|-------------|--|--|
| # AFUDC                | \$ 4         | \$ -        | \$ -        | \$ 0        | \$ 2         | \$ 2        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # External Services    | \$ 2         | \$ -        | \$ -        | \$ 2        | \$ -         | \$ -        |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # Internal, Labor      | \$ 20        | \$ -        | \$ -        | \$ -        | \$ 20        | \$ -        |  |  |
| # Internal, Overheads  | \$ 3         | \$ -        | \$ -        | \$ 0        | \$ 3         | \$ -        |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # Overheads - External | \$ 10        | \$ -        | \$ -        | \$ 0        | \$ 10        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 39</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 3</b> | <b>\$ 34</b> | <b>\$ 2</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026        | 2027          | 2028            | 2029          | 2030            | 2031            |
|------------------------|-----------------|---------------|-------------|---------------|-----------------|---------------|-----------------|-----------------|
| # AFUDC                | \$ 354          | \$ 146        | \$ -        | \$ 23         | \$ 64           | \$ 5          | \$ 58           | \$ 58           |
| # CIAC                 | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -          | \$ -            | \$ -            |
| # External Services    | \$ 3,194        | \$ -          | \$ -        | \$ 356        | \$ 987          | \$ 70         | \$ 888          | \$ 893          |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -          | \$ -            | \$ -            |
| # Internal, Labor      | \$ 347          | \$ -          | \$ -        | \$ 39         | \$ 107          | \$ 8          | \$ 97           | \$ 97           |
| # Internal, Overheads  | \$ 431          | \$ -          | \$ -        | \$ 46         | \$ 120          | \$ 8          | \$ 115          | \$ 141          |
| # Materials            | \$ 2,083        | \$ -          | \$ -        | \$ 232        | \$ 644          | \$ 46         | \$ 579          | \$ 583          |
| # Overheads - External | \$ 481          | \$ -          | \$ -        | \$ 52         | \$ 134          | \$ 9          | \$ 129          | \$ 157          |
| <b>Total</b>           | <b>\$ 6,889</b> | <b>\$ 146</b> | <b>\$ -</b> | <b>\$ 747</b> | <b>\$ 2,056</b> | <b>\$ 145</b> | <b>\$ 1,866</b> | <b>\$ 1,929</b> |

[illegible]

## BES - NY.Healey Road

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005768        | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

In NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. Haley Road 115/34.5 kV substation is located in the middle of NYSEG's Geneva district. [REDACTED]

These projects are located in the middle of NYSEG's Geneva district. Both stations are 115/34.5 kV and feed into two separate 34.5 kV sub-transmission networks. The voltages and thermal loadings at these stations are heavily influenced by the Greenidge generator. The project consists of multiple aspects in order to improve reliability and address asset condition. The scope is listed below.

#### Project Scope:

Haley Road capacitor bank addition is an integrated part of Border City/Haley Road Solution  
- Install two 25 MVar 115 kV capacitors with Circuit breakers

#### Project Benefits:

#### Project Risks and Mitigation Plan:

Risk 1 - Long-lead material procurements: In-service date highly dependent on material lead-times provided by 115kV Circuit Breakers, currently reserving up to 2 years in advance. Susceptible to changes in global supply chain environment.

Mitigation: All long-lead major equipment can be promptly ordered upon project re-activation, and after taking another look at the project technical solution.

Risk 2 - 115kV Circuit Breakers are planned - SF6-Free will be needed, necessitating longer procurement lead-time and 50% higher cost than originally planned SF6.

Mitigation: Need for SF6-Free will be revisited in a technical review, before further project execution.

#### Risk of No Action:

Capacitor solution developed in order to maintain BES reliability [REDACTED]

#### Project Alternatives:

No alternative was explored as the preferred solution only involves the addition of shunt capacitors. Solution is the more cost effective and solving all identified needs with minimal scope.

#### Basis for Project Estimates

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ 17        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 17        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 17</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 17</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025         | 2026         | 2027            | 2028            | 2029            | 2030            | 2031        |
|------------------------|-----------------|--------------|--------------|-----------------|-----------------|-----------------|-----------------|-------------|
| # AFUDC                | \$ 335          | \$ 28        | \$ 1         | \$ 69           | \$ 70           | \$ 114          | \$ 53           | \$ -        |
| # CIAC                 | \$ -            | \$ -         | \$ -         | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        |
| # External Services    | \$ 4,715        | \$ -         | \$ 14        | \$ 1,059        | \$ 1,077        | \$ 1,746        | \$ 819          | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -         | \$ -         | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        |
| # Internal, Labor      | \$ 513          | \$ -         | \$ 1         | \$ 115          | \$ 117          | \$ 190          | \$ 89           | \$ -        |
| # Internal, Overheads  | \$ 585          | \$ -         | \$ 2         | \$ 137          | \$ 131          | \$ 208          | \$ 106          | \$ -        |
| # Materials            | \$ 3,075        | \$ -         | \$ 9         | \$ 690          | \$ 702          | \$ 1,139        | \$ 534          | \$ -        |
| # Overheads - External | \$ 653          | \$ -         | \$ 3         | \$ 153          | \$ 146          | \$ 233          | \$ 119          | \$ -        |
| <b>Total</b>           | <b>\$ 9,877</b> | <b>\$ 28</b> | <b>\$ 30</b> | <b>\$ 2,224</b> | <b>\$ 2,244</b> | <b>\$ 3,630</b> | <b>\$ 1,721</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## BES Fuller Hollow + L939 + L952 + RR

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                     |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007367        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2026             | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

The Fuller Hollow Project is part of the NYSEG/RGE Bulk Electric System (BES) program and is located in the Southern portion of the Binghamton district of NYSEG's territory. The existing Fuller Hollow Substation is a 115/12.5 kV station feeding the Southern tier of Binghamton's 12.5 kV sub-transmission network. This project proposes to expand Fuller Hollow SS nearby its existing location. Morgan Road SS will remain at its existing site. This project solves a system issue determined by the Avangrid Brightline BES program.

Existing configuration:

Single, undesirable Straight bus

One (1) 115/12.5kV Power Transformer

Asset Condition: Structural deficiencies based on visual assessment. Obsolete or unsupported equipment at or near its end of life, poor health conditions. Several locations where foundations are in poor condition (e.g. cracking, spalling, etc.) Several locations where the structures are in poor condition (e.g. corrosion, loss of galvanized coating, etc.)

#### Project Scope:

Fuller Hollow

- Re-build 115 kV station as a 4-bay Breaker-and-a-half AIS
- Install 11 115kV Breakers (SF6 Free Breakers)
- Install two 115/12 kV transformers
- Install 15kV GIS Gear - (SF6 Free GIS)
- Install dedicated GIS Building with 15kV Controls
- Install new 115kV Control House

Re-routes include

Fuller Hollow SS Scope

L937 Existing Line Fuller Hollow to Morgan will have 5.1 miles rebuilt, and will be renamed as 935

L937 Existing Line Fuller hollow to Castle Garden will be re-routed and terminated to New Fuller Hollow SS (~0.3 miles)

L936 Existing segment of L952 from Goudey (Existing str 952-4) to New Fuller Hollow SS will be rebuilt. The line segment from str 952-4 until str 1 of L939 located near to existing Goudey SS will be built as part of new Westover SS project (existing L939 will become part of L936). The scope of the project From str 11 until Substation frame in the new 115kV yard at Oakdale SS is included as part of STAR project scope.

L952 Currently runs between Laurel Lake - Goudy/Westover. Now L952 will terminate at new Fuller Hollow SS.

Note:

This project is an integrated part of Fuller Hollow SS -Langdon Road SS, and one new transmission Line 727 . This Solution will require approximately 3 miles of transmission lines to be built and reconducted to bring the 939 line from Oakdale with Fuller Hollow and approximately 8.6 miles of new 115kV L727 transmission line to connect Langdon Rd with Fuller Hollow. Therefore, it will require an Article VII filing.

#### Project Benefits:

This project solves a system issue determined by the Avangrid Brightline BES program. The new BAAH Rebuilds will aid in the mitigation of initiating reliability needs. Resolves all reliability and asset condition needs. Lower construction and outage complexity.

#### Project Risks and Mitigation Plan:

Risk 1 - Easement acquisition and crossing agreements: Continued difficulty in voluntarily engaging landowner cooperation on most critical and most required easement region.

Mitigation: Continued efforts between Avangrid ELM, Public Outreach and Legal teams to contact landowner attorney. Legal escalation plan in place in case of continued non-cooperation

Risk 2 - Complex Construction and Outage Sequence with the goal of minimizing risk and maximizing continuity of service.

Mitigation: Developing and focusing on engineering for cutover packages and detailed outage plans. Schedules will be synchronized with all projects occurring simultaneously that are directly or indirectly related to the Fuller Hollow/ Langdon Road Solution project.

Risk 3 - Long-lead material procurements: In-service date highly dependent on material lead-times provided by power transformer, circuit-breakers, and control house vendors, currently reserving up to 4 years in advance. Susceptible to changes in global supply chain environment.

Mitigation: Maintaining ongoing, open dialogue with vendors for material forecasting. Started orders for most major equipment, earlier than usual in project life cycle.

Various asset condition concerns in Langdon

This alternative solution did not address all the identified reliably needs in the area and was therefore deemed a non-viable alternative and not recommended. The alternative to the Fuller Hollow and Langdon Rd Projects involves the following: Expand 115 kV bus at Fuller Hollow to 4 breaker ring bus configuration. Tap Line 952 into and out of Fuller Hollow. Build a new 3 breaker ring bus near Northside Substation Tap Line 943 into and out of the new station Construct a new 0.5 mile line from the new station to Northside Remove a 30 MVar capacitor bank from Morgan Rd and replace with a 30 MVar STATCOM Re-designate the line section from Fuller Hollow to Morgan Rd as Line 935 Selected option was evaluated with different substation locations and its configurations where most techno-commercial option was selected.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026         | 2027            | 2028          | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|--------------|-----------------|---------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 443           | \$ -        | \$ 2         | \$ 119          | \$ 18         | \$ 46           | \$ 151          | \$ 106          |
| # CIAC                 | \$ -             | \$ -        | \$ -         | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 6,786         | \$ -        | \$ 36        | \$ 1,819        | \$ 272        | \$ 712          | \$ 2,322        | \$ 1,624        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -         | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 738           | \$ -        | \$ 4         | \$ 198          | \$ 30         | \$ 77           | \$ 252          | \$ 177          |
| # Internal, Overheads  | \$ 990           | \$ -        | \$ 6         | \$ 255          | \$ 36         | \$ 92           | \$ 325          | \$ 276          |
| # Materials            | \$ 4,426         | \$ -        | \$ 24        | \$ 1,187        | \$ 177        | \$ 464          | \$ 1,515        | \$ 1,059        |
| # Overheads - External | \$ 1,103         | \$ -        | \$ 7         | \$ 284          | \$ 40         | \$ 102          | \$ 362          | \$ 308          |
| <b>Total</b>           | <b>\$ 14,486</b> | <b>\$ -</b> | <b>\$ 80</b> | <b>\$ 3,861</b> | <b>\$ 573</b> | <b>\$ 1,494</b> | <b>\$ 4,928</b> | <b>\$ 3,551</b> |

[illegible]

## BES - Cold Springs

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007225        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2029            | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards.

#### System Overview

The electric system within the NYSEG serves approximately 905,000 electricity customers. The high forecasted load growth necessitates proactive grid expansion to address capacity constraints and support economic development. Forecasted load growth based on the NYISO Gold Book and internal forecasting indicates the following:

- Forecasted Winter Peak Load Growth: 3% by 2028 and 15% by 2034
- Forecasted Summer Peak Load Growth: 3% by 2028 and -2% by 2034

The Cold Springs Project is in the Lancaster district of NYSEG's territory, south of the city of Lancaster. Cold Springs is a 115/34.5 kV with a single 115/34.5 kV transformer. The 34.5 kV network is served from three 115 kV sources at Cold Springs, Machias, and North Angola Substations.

#### Needs Assessment

Comprehensive studies identified wide range of reliability criteria violations (voltage collapse) which pose significant risks to the reliability of NYSEG's bulk transmission system. Summer and winter peak conditions were [REDACTED]. The TPL compliance assessment is focused on adherence to the performance criteria established in NERC TPL-001-5. It does not include an assessment of Asset Condition. BES projects from the TPL assessment are preliminarily scoped based on reliability-only needs, and scopes are later adapted to include mitigation for relevant asset condition needs and be right-sized to maximize local system capacity. There are contingencies that results in voltage collapse on the 34.5 kV in the surrounding area. This project is proposing to add a STATCOM at Cold Springs to help maintain local system voltages.

#### Project Scope:

The project consists of the following upgrades to improve reliability and asset condition concerns:

##### At Cold Springs:

- Install 1x10 MVar 34.5 kV STATCOM with associated breaker.
- Expand 34.5 kV bus as needed (straight bus).

#### Project Benefits:

The benefits of the project are:

- Compliance with NERC reliability standards
- Maintain or improve customer experience and satisfaction that improves SAIFI and CAIDI scores.

#### Project Risks and Mitigation Plan:

Based on the electrical configuration of the region, there has to be significant coordination among the necessary stakeholders to limit the number of customers that may be without power due to scheduled outage. The customers that are currently served by Cold Springs will have to be served from a different station while Cold Springs is undergoing its reconfiguration. A plan has to be in place to safely and reliably serve these customers for the duration of the Cold Springs project. If existing station transformers do not have capacity to serve Cold Springs' customers, a mobile station or other means should be available to provide service to these customers.

**Risk of No Action:**

Taking no action could result in failure to comply with NERC TPL-001 standards which could result in penalties and increased scrutiny from regulatory bodies.

These projects address system Needs that exist today. As long as these risks continue unmitigated, there is abnormal risk to customer reliability and equipment security. Additionally, until these Needs are resolved, they are restricting the capacity that is available for load growth in the relevant areas. Delaying these projects may suppress economic growth in the affected region.

Taking no action could also impact the accomplishment of the State's CLCPA goals since there is likely insufficient capacity to support the electrification of large loads such as School Buses or fast-charging stations. This may result in more costs being borne by customers or electrification projects being delayed or abandoned.

**Project Alternatives:**

There are a couple of alternatives to the Cold Springs project with varying degrees of complexity. One alternative is to distribute capacitors between Cold Springs, Frog Valley, Ellington, and Randolph. This was found to be more expensive than the selected alternative. Additionally, a new 115 kV source into the Gowanda area could also solve the needs, however, due to the remoteness of the Gowanda area, this would require a 115 kV or 34.5 kV line that could be 20 miles or longer. As a result, cost estimates for this alternative were not developed.

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029            | 2030             | 2031          |
|------------------------|------------------|-------------|-------------|-------------|-------------|-----------------|------------------|---------------|
| # AFUDC                | \$ 232           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 58           | \$ 170           | \$ 4          |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -          |
| # External Services    | \$ 12,280        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 3,097        | \$ 8,996         | \$ 187        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -          |
| # Internal, Labor      | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -          |
| # Internal, Overheads  | \$ 1,422         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 335          | \$ 1,060         | \$ 27         |
| # Materials            | \$ 7,646         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,928        | \$ 5,601         | \$ 116        |
| # Overheads - External | \$ 1,375         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 324          | \$ 1,025         | \$ 26         |
| <b>Total</b>           | <b>\$ 22,954</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 5,743</b> | <b>\$ 16,852</b> | <b>\$ 359</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## BES - Ten Mile to Pleasant Valley New 115 kV Line

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007226        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2029            | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. The Ten Mile River project scope is largely the same as previously proposed with exception that additional reactive power support is needed which improves voltage performance in the North Brewster Area .

PRJ-002301\_NE\_BES - Ten Mile River project was originally proposed as part of the 2018 NERC TPL-001 compliance studies. The Ten Mile River Project is located in the northern portion of the Brewster district of NYSEG's territory. The project includes constructing a 115 kV bus and installation of a 115/46 kV transformer at Ten Mile River, and building a new 115 kV transmission line from Pleasant Valley to Ten Mile River. This document focuses on the 115 kV transmission line scope.

#### System Overview

The electric system within the NYSEG serves approximately 905,000 electricity customers. The high forecasted load growth necessitates proactive grid expansion to address capacity constraints and support economic development. Forecasted load growth based on the NYISO Gold Book and internal forecasting indicates the following:

- Forecasted Winter Peak Load Growth: 3% by 2028 and 15% by 2034
- Forecasted Summer Peak Load Growth: 3% by 2028 and -2% by 2034

#### Needs Assessment

Comprehensive studies identified wide range of reliability criteria violations (including thermal overloads, severe voltage violations or voltage collapse) which pose significant risks to the reliability of NYSEG's bulk transmission system. Summer and winter peak conditions were assessed. The TPL compliance assessment is focused on adherence to the performance criteria established in NERC TPL-001-5. It does not include an assessment of Asset Condition. BES projects from the TPL assessment are preliminarily scoped based on reliability-only needs, and scopes are later adapted to include mitigation for relevant asset condition needs and be right-sized to maximize local system capacity.

#### Project Scope:

The conceptual projects developed as part of the 2023 TPL-001 Compliance assessment includes transmission upgrades needed to address identified system needs within the next 10 years. The projects are currently in a conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.

The line scope is listed below:

- Build a new 115 kV Line from Pleasant Valley to Ten Mile River (16 miles)
- Build a new 115 kV line termination at Pleasant Valley and Ten Mile Substations

#### Project Benefits:

The primary driver of this project is to address reliability concerns within the NYSEG bulk transmission system due to the increased demand in the next 10 years.

**Reliability:** The project will enhance the reliability, capacity, and stability of the bulk transmission system. By upgrading infrastructure, adding reactive power support, and constructing new transmission lines, the projects ensure a more stable power supply and accommodate growing demand. They also provide operational flexibility, support regulatory compliance, and offer economic benefits by reducing outage-related costs.

**Asset Condition:** Equipment that is in poor, or very poor condition have exceeded their useful life and should be replaced to limit the risk of equipment-related outages. Such equipment are included for replacement or retirement in the conceptual solution. Site inspections will be performed to identify any additional asset condition needs.

**Capacity:** Creates a relatively large amount of capacity in the region. The existing reliability violations constrain the region's ability to accept significant load growth. This new tie strengthens the local network and supports capacity being gained (exact gain varies significantly by location).

**Project Risks and Mitigation Plan:**

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

**Risk of No Action:**

This project addresses system Needs that exist today. As long as these risks continue unmitigated, there is abnormal risk to customer reliability and equipment security. Additionally, until these Needs are resolved, they are restricting the capacity that is available for load growth in the relevant areas. Delaying these projects may suppress economic growth in the affected region.

Taking no action could also impact the accomplishment of the State's CLCPA goals since there is likely insufficient capacity to support the electrification of large loads such as School Buses or fast-charging stations. This may result in more costs being borne by customers or electrification projects being delayed or abandoned.

Taking no action could also result in failure to comply with NERC TPL-001 standards which could result in penalties and increased scrutiny from regulatory bodies.

**Project Alternatives:**

The alternative to Ten Mile River Project involved rebuilding Pawling as a 3-bay breaker-and-a-half station. A new 115 kV line would be built to Fishkill, as well as a new 115 kV line to Ten Mile River. This alternative solution was ultimately abandoned due to the cost being significantly higher and obtaining right-of-way to Fishkill seems infeasible.

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Total                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029             | 2030             | 2031             |
|------------------------|------------------|-------------|-------------|-------------|-------------|------------------|------------------|------------------|
| # AFUDC                | \$ 432           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 134           | \$ 141           | \$ 156           |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 22,891        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 7,127         | \$ 7,475         | \$ 8,288         |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ 2,840         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 772           | \$ 881           | \$ 1,187         |
| # Materials            | \$ 14,253        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 4,438         | \$ 4,654         | \$ 5,161         |
| # Overheads - External | \$ 2,746         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 746           | \$ 852           | \$ 1,148         |
| <b>Total</b>           | <b>\$ 43,160</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 13,218</b> | <b>\$ 14,002</b> | <b>\$ 15,941</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## BES - Klinekill to Falls Park New 115 kV Line

### PROJECT INFORMATION

|                                   |                                         |                                              |                                          |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007227        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2028            | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, the need for a number of new system upgrades was identified for the Bulk Electric System (BES) within the NYSEG service territory. These critical transmission upgrades are driven by the need to address higher forecasted winter peak loads, which were not forecasted in previous NERC TPL studies. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. Collectively, these projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards.

As part of NYSEG's 2023 NERC TPL-001-5 compliance assessment, significant changes have been proposed to the originally planned PRJ-002296\_NE\_BES - Klinekill RPR project. These changes are driven by the forecasted load growth in the winter peak scenario. The newly proposed Klinekill project involves constructing a new 115kV transmission line and adding additional reactive power support devices.

#### East Birkshire Area Overview:

The East Birkshire area consists of two 115/34.5kV substations, Klinekill and Stephentown, and underlying 34.5kV network. Klinekill and Stephentown 115kV substations are the primary sources of power for the area. The electric system within the East Birkshire Area serves approximately 13,850 electricity customers, with a projected peak of 81 MW winter peak load.

#### Needs Assessment:

Due to the heavy load in the East Birkshire Area, [REDACTED] This necessitates the proposed enhancements to ensure reliable supply and compliance with NERC standards.

#### Project Scope:

The conceptual project, developed as part of the 2023 TPL-001 Compliance assessment, includes essential transmission upgrades to address identified needs within the next 10 years. The project is currently in the conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.

The conceptual project includes the following developments:

1. Construct a new 115 kV transmission line from Klinekill to Falls Park (approximately 7.5 miles).

#### Project Benefits:

**Reliability NYSEG:** Resolves a NERC TPL reliability violation. This violation represents a risk to NYSEG customers and equipment, and resolution provides a benefit to all customers in the region beyond the stations where upgrades are directly occurring.

**Asset Condition:** Equipment that is in poor, or very poor condition have exceeded their useful life and should be replaced to limit the risk of equipment-related outages. Such equipment are included for replacement or retirement in the conceptual solution. Site inspections will be performed to identify any additional asset condition needs.

**Capacity:** Creates a relatively large amount of capacity in the region. The existing reliability violations constrain the region's ability to accept significant load growth. This new tie strengthens the local network and supports capacity being gained (exact gain varies significantly by location).

#### Project Risks and Mitigation Plan:

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-of-way Acquisition: Securing the necessary land or easements for the new transmission line can be time-consuming and contentious. To mitigate this risk, NYSEG engages with landowners early in the process to negotiate easements and address concerns.

This project addresses system Needs that exist today. As long as these risks continue unmitigated, there is abnormal risk to customer reliability and equipment security. Additionally, until these Needs are resolved, they are restricting the capacity that is available for load growth in the relevant areas. Delaying these projects may suppress economic growth in the affected region.

Taking no action could also result in failure to comply with NERC TPL-001 standards which could result in penalties and increased scrutiny from regulatory bodies.

An alternative solution would be to bring a new line from Churchtown to Klinekill. Due to longer line length, this alternative solution is expected to have potential higher cost and social/environmental impact than the preferred solutions. Therefore, this alternative was not pursued further.

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES TL 727 Langdon Road to Fuller Hollow

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                     |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007366        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2026             | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

NYSEG Transmission Line 727 is a proposed new 115kV line between Fuller Hollow SS and Langdon Road SS. This project is an integrated part of the Fuller Hollow SS -Langdon Road SS Project Solution. This solution will require approximately 8.6 miles of new 115kV L727 transmission line to connect Langdon Rd with Fuller Hollow.

The Fuller Hollow Projects is part of the NYSEG/RGE Bulk Electric System (BES) program. The Fuller Hollow Project are located in the Southern portion of the Binghamton district of NYSEG's territory. Fuller Hollow is a 115/12.5 kV substation feeding the Southern tier of Binghamton's 12.5 kV sub-transmission network. Fuller Hollow SS is under proposal to be expanded. Morgan Road SS will remain at its existing site. This project solves a system issue determined by the Avangrid Brightline BES program.

Langdon Rd Projects is part of the NYSEG/RGE Bulk Electric System (BES) program. Langdon Rd Project is located in the Southern portion of the Binghamton district of NYSEG's territory. Langdon Rd is a 115/34.5/12 kV substation.

#### Project Scope:

Build a new 115kV transmission line from Fuller Hollow SS to Langdon Road SS named New 115kV L727.

Approximately 8.6-miles length within NYSEG's Binghamton Division.

Use 1192 kcmil ACSR conductor and Optical Ground Wire (OPGW) with 72 strands.

Use of Light Duty Steel poles for the majority of the structures.

The structures are direct embedded and guyed where possible.

#### Project Benefits:

Full rebuild provides 50 year life expectancy for entire station. Lowest construction complexity by permitting new station to be built prior to cutovers. No land purchase required (parcel owned by Avangrid) away from flooding risk area.

#### Project Risks and Mitigation Plan:

Risk 1 - Crossings of active roadways.

Mitigation: Non-reclose orders on the electric facilities as well as guard structures should be considered where the new build crosses a roadway

Risk 2 - Project suspension necessitating possible future re-work on engineering. Project has only completed Pre-Conceptual engineering and will take more time to finalize direction of technical solution

Mitigation: Prior to suspension, high-quality project documentation archived with complete status and background of permitting, procurement, engineering phases - ready to pickup where things were left off, upon project reactivation.

Risk 3 - Some areas with minor environmental concerns while constructing nearby to streams and wetlands. Construction near active roadways

Mitigation: Special geotechnical consideration for soil erosion should be considered where the planned route is navigating an active stream.

#### Risk of No Action:

#### Project Alternatives:

The new line between Fuller Hollow SS -Langdon Road SS named a New 115kV TL 727 resolves all reliability concerns; no other Alternatives were explored.

#### Basis for Project Estimates

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026         | 2027          | 2028            | 2029            | 2030            | 2031          |
|------------------------|-----------------|-------------|--------------|---------------|-----------------|-----------------|-----------------|---------------|
| # AFUDC                | \$ 216          | \$ -        | \$ 1         | \$ 13         | \$ 65           | \$ 68           | \$ 50           | \$ 18         |
| # CIAC                 | \$ -            | \$ -        | \$ -         | \$ -          | \$ -            | \$ -            | \$ -            | \$ -          |
| # External Services    | \$ 3,311        | \$ -        | \$ 12        | \$ 207        | \$ 1,004        | \$ 1,046        | \$ 768          | \$ 275        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -         | \$ -          | \$ -            | \$ -            | \$ -            | \$ -          |
| # Internal, Labor      | \$ 360          | \$ -        | \$ 1         | \$ 22         | \$ 109          | \$ 114          | \$ 83           | \$ 30         |
| # Internal, Overheads  | \$ 452          | \$ -        | \$ 2         | \$ 29         | \$ 132          | \$ 134          | \$ 107          | \$ 47         |
| # Materials            | \$ 2,159        | \$ -        | \$ 8         | \$ 135        | \$ 655          | \$ 682          | \$ 501          | \$ 179        |
| # Overheads - External | \$ 503          | \$ -        | \$ 2         | \$ 32         | \$ 147          | \$ 150          | \$ 120          | \$ 52         |
| <b>Total</b>           | <b>\$ 7,001</b> | <b>\$ -</b> | <b>\$ 26</b> | <b>\$ 439</b> | <b>\$ 2,112</b> | <b>\$ 2,194</b> | <b>\$ 1,629</b> | <b>\$ 601</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## N58495 - BES TL 842 - Baker Hill to Pierce Avenue 46 kV

### PROJECT INFORMATION

|                                   |                                         |                                               |                                          |                                     |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003537        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2029            | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is integrated part of Baker Hill Substation is a 115/46 kV Solution which is separate project definition

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. It would facilitate satisfying several previously identified Bulk Electric System (BES) reliability needs detailed in prior studies including the 2018 North American Electric Reliability Corporation (NERC) BES Assessment and its subsequent updates.

The New 46 kV L842 Pierce to Baker Hill project is integrated part of BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are separate project definitions. New 115/46 kV substation located approximately three (3) miles northwest of the existing 46 kV Pierce Ave substation along the existing 345 kV NYPA ROW.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. The pre-conceptual was developed as part of the 2018 TPL-001 includes essential transmission and distribution upgrades to address identified needs. The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.. This project is integrated part of Solution BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are separate project definitions.

- New 46 kV line from Pierce - Baker Hill (light duty steel).

6.8-mile 46 kV line within NYSEG's Oneonta Division.

- For this project, using wood tangents would only

- (LD Steel 85 ft. H2 vs 85 ft. H2 Douglas Fir)

- Steel poles on foundation were selected for angle and dead-end structures because eliminating guy wires will lessen the environmental impact, lessen the visual impact on abutters and potentially aid in an expedient Article VII review.

- From Pierce Substation the transmission line parallels NY-7 interstate. Then the line parallels the existing NYPA 345kV Lines 40 and 41 to Baker Hill Substation.

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

#### Project Risks and Mitigation Plan:

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) permitting, design changes, long lead items procurement, construction and outage sequences, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.



**Risk of No Action:**

[REDACTED]

Selected Solution

Alternatives: The new 115/46 kV Baker Hill Substation and associated 115/46 kV line projects will aid in the mitigation of initiating reliability needs

**Project Alternatives:**

Alternative 1: Build a new 46 kV transmission line from Pierce to Baker Hill. Use 477 ACSR conductor and OPGW. Use wood poles for tangent structures. Use self supported steel poles on foundation for angle and dead-end structures. Cost \$25.9M (+50/-25%) For this project, using wood tangents would only save approximately \$220K in materials. (LD Steel 85 ft. H2 vs 85 ft. H2 Douglas Fir) Steel poles on foundation were selected for angle and dead-end structures because eliminating guy wires will lessen the environmental impact, lessen the visual impact on abutters and potentially aid in an expedient Article VII review.

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022         | 2023         | 2024        |  |  |
|------------------------|--------------|-------------|-------------|--------------|--------------|-------------|--|--|
| # AFUDC                | \$ 10        | \$ -        | \$ -        | \$ 0         | \$ 5         | \$ 5        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -         | \$ -         | \$ -        |  |  |
| # External Services    | \$ 61        | \$ -        | \$ -        | \$ 46        | \$ 15        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -         | \$ -         | \$ -        |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -         | \$ -         | \$ -        |  |  |
| # Internal, Overheads  | \$ 7         | \$ -        | \$ -        | \$ 5         | \$ 2         | \$ -        |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -         | \$ -         | \$ -        |  |  |
| # Overheads - External | \$ 12        | \$ -        | \$ -        | \$ 9         | \$ 4         | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 90</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 61</b> | <b>\$ 24</b> | <b>\$ 5</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029         | 2030            | 2031            |
|------------------------|-----------------|-------------|-------------|-------------|-------------|--------------|-----------------|-----------------|
| # AFUDC                | \$ 180          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2         | \$ 106          | \$ 72           |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         | \$ -            | \$ -            |
| # External Services    | \$ 2,762        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 36        | \$ 1,627        | \$ 1,099        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         | \$ -            | \$ -            |
| # Internal, Labor      | \$ 300          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 4         | \$ 177          | \$ 119          |
| # Internal, Overheads  | \$ 389          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 4         | \$ 211          | \$ 173          |
| # Materials            | \$ 1,801        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 23        | \$ 1,061        | \$ 717          |
| # Overheads - External | \$ 434          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 5         | \$ 236          | \$ 194          |
| <b>Total</b>           | <b>\$ 5,867</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 74</b> | <b>\$ 3,418</b> | <b>\$ 2,374</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## N58495 - BES TL 843 - Baker Hill to Morris 46kV

### PROJECT INFORMATION

|                                   |                                         |                                               |                                          |                                     |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003536        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is integrated part of East Norwich Substation is a 115/46 /34.5 kV Solution which is separate project definition

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. It would facilitate satisfying several previously identified Bulk Electric System (BES) reliability needs detailed in prior studies including the 2018 North American Electric Reliability Corporation (NERC) BES Assessment and its subsequent updates.

This project is integrated part of BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are separate project definition. New 115/46 kV substation located approximately three (3) miles northwest of the existing 46 kV Pierce Ave substation along the existing 345 kV NYPA ROW.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. The pre-conceptual was developed as part of the 2018 TPL-001 includes essential transmission and distribution upgrades to address identified needs. The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.. This project is integrated part of Solution BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are separate project definition.

New 46 kV line from Morris - Baker Hill (wood tangent +steel angle/dead-ends). 477 ACSR w/ OPGW

-9.4-mile 46 kV line within NYSEG's Oneonta Division

- For this project, using wood tangents would only

- (LD Steel 85 ft. H2 vs 85 ft. H2 Douglas Fir)

- Steel poles on foundation were selected for angle and deadend structures because eliminating guy wires will lessen the environmental impact, lessen the visual impact on abutters and potentially aid in an expedient Article VII review

From Morris Substation, the proposed transmission line would head east on new Right Of Way (ROW) for about 1.5 miles. The proposed transmission line then parallels State Route 23 for approximately 1 mile. From here, the proposed transmission line would head southeast on new ROW for about 3.5 miles. The line then follows the NYPA 345 kV ROW until it reaches the new Baker Hill Substation

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

#### Project Risks and Mitigation Plan:

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) design changes, permitting, construction and outage sequences, procurement, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

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Alternatives: The new 115/46 kV Baker Hill Substation and associated 115/46 kV line projects will aid in the mitigation of initiating reliability needs.

Alternative 1: Build a new 46 kV transmission line from Morris to Baker Hill. Use 477 ACSR conductor and OPGW. Use wood poles for tangent structures. Use self supported steel poles on foundation for angle and dead-end structures. Cost \$29.4M (+50/-25%) For this project, using wood tangents would only save approximately \$310K in materials. (LD Steel 85 ft. H2 vs 85 ft. H2 Douglas Fir) Steel poles on foundation were selected for angle and dead-end structures because eliminating guy wires will lessen the environmental impact, lessen the visual impact on abutters and potentially aid in an expedient Article VII review

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

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[illegible]

1. **Identify the problem.** The first step is to identify the problem. In this case, the problem is that the company is not meeting its sales targets.

## New 115 kV Line from Baker Hill to Colliers

### PROJECT INFORMATION

|                                   |                                         |                                               |                                          |                                     |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003538        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2026            | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

In NYSEG's NERC TPL-001 assessment, needs for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is an integrated part of 115/46/4.8 kV Colliers Substation Rebuild Solution, which is a separate project definition.

The Colliers Project Solution is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. It would facilitate satisfying several previously identified Bulk Electric System (BES) reliability needs detailed in prior studies including the 2018 North American Electric Reliability Corporation (NERC) BES Assessment and its subsequent updates. – The scope of this individual project consists in the construction of a new 115kV Line (L754) from the new Colliers Substation to the new Baker Hill Substation running generally east to west in the Towns of Milford and Oneonta, with a distance of 8.5 miles.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers.

The pre-conceptual design was developed as part of the 2018 TPL-001, which includes essential transmission and distribution upgrades to address identified needs. The project is currently in the pre-conceptual design stage; the scope and schedule will be refined as detailed engineering activities are performed.

Build a new 115 kV transmission line from Colliers to Baker Hill.

Approximately 8.5 miles length within NYSEG's Oneonta Division.

Serves to connect the new Colliers and new Baker Hill Substations.

Use 1192 kcmil ACSR conductor and Optical Ground Wire (OPGW) with 72 strands.

Use of Light Duty Steel poles for the majority of the structures.

The structures are direct embedded and guyed where possible.

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the Southern, Eastern, and Western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

Selected alternatives together introduce new 115 kV and 46 kV sources into Oneonta to mitigate reliability needs.

#### Project Risks and Mitigation Plan:

Risk 1 - Crossing of multiple active roadways. The need for some working pads over the streams has been identified.

Mitigation: Consider costs associated with forested wetland conversion. Non-reclose orders on the electric facilities as well as guard structures should be considered where the new build crosses a roadway.

Risk 2 - Project suspension necessitating possible future re-work on engineering. Project has only completed Pre-Conceptual engineering and will take more time to finalize direction of technical solution.

Mitigation: Prior to suspension, high-quality project documentation archived with complete status and background of permitting, procurement, engineering phases - ready to pickup where things were left off, upon project reactivation.

Risk 3 - Multiple crossings over other third-party utilities.

Mitigation: Overhead crossings or parallelism with assets that does not belong to NYSEG should be addressed with the respective owners in order to determine if additional permits are required.

#### Risk of No Action:



## New 115 kV Line from Baker Hill to Fraser

### PROJECT INFORMATION

|                                   |                                         |                                               |                                          |                                     |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003540        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is integrated part of East Norwich Substation is a 115/46 /34.5 kV Solution which is sepearate project defination

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. It would facilitate satisfying several previously identified Bulk Electric System (BES) reliability needs detailed in prior studies including the 2018 North American Electric Reliability Corporation (NERC) BES Assessment and its subsequent updates. Construction of the new 115kV Line 729 from the Fraser Substation in the Town of Delhi to the new Baker Hill Substation running generally southeast to northwest in the Towns of Delhi, Hamden, Franklin, Otego and Oneonta, a distance of 19.21 miles;

This project is integrated part of BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are sepearate project defination. New 115/46 kV substation located approximately three (3) miles northwest of the existing 46 kV Pierce Ave substation along the existing 345 kV NYPA ROW.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. The pre-conceptual was developed as part of the 2018 TPL-001 includes essential transmission and distribution upgrades to address identified needs The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.. This project is integrated part of Solution BES TL 729 Baker Hill to Fraser 115 kV; Morris 46-4.8 kV Substation Upgrades; 46kV Pierce Ave SS; BES TL 843 Baker Hill To Morris 46kV; and BES TL 842 Baker Hill to Pierce Avenue 46 kV Solution, which are sepearate project defination.

- 115 kV line from Fraser - Baker Hill (Steel direct embed).
- 19.3-mile 115 kV line within NYSEG's Oneonta Division.
- Use 1192 ACSR1 conductor and OPGW.
- Use Light Duty steel poles for tangent structures.
- Deadends and angles are self-supported steel poles on foundation.

- 3X CCVT all the single-phase foundations, structure at fraser SS
- 3X Surge Arresters all are single phase foundations & structure at Fraser SS

- Steel poles on foundation were selected for angle and deadend structures because eliminating guy wires will lessen the environmental impact, lessen the visual impact on abutters and potentially aid in an expedient Article VII review.

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

**Project Risks and Mitigation Plan:**

(1) Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues. Mitigation measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

(2) Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope. To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) permitting, construction and outage sequences, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

**Risk of No Action:**

Selected Solution  
Alternatives: The new 115/46 kV Baker Hill Substation and associated 115/46 kV line projects will aid in the mitigation of initiating reliability needs

**Project Alternatives:**

Build a new 115 kV transmission line from Fraser to Baker Hill. Use 1192 ACSR1 conductor and OPGW. Use Light Duty steel poles for all structures. All structures are direct embedded and guyed where possible. New conductor rating (MVA) is [REDACTED] ISD: 2029. Cost \$65.0 M (+50/-25%) Using guyed light duty steel poles for angles and deadends reduces project costs by approximately \$21.4 M when compared to self-supported steel poles. Internal crews can maintain guys and anchors whereas qualified inspectors and specialty contractors are needed to maintain and repair foundations.

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2020        | 2021        | 2022          | 2023         | 2024         |  |  |
|------------------------|---------------|-------------|-------------|---------------|--------------|--------------|--|--|
| # AFUDC                | \$ 42         | \$ -        | \$ -        | \$ 3          | \$ 18        | \$ 21        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -         |  |  |
| # External Services    | \$ 236        | \$ -        | \$ -        | \$ 210        | \$ 26        | \$ -         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -         |  |  |
| # Internal, Overheads  | \$ 26         | \$ -        | \$ -        | \$ 23         | \$ 3         | \$ -         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -         |  |  |
| # Overheads - External | \$ 45         | \$ -        | \$ -        | \$ 39         | \$ 6         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 350</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 275</b> | <b>\$ 54</b> | <b>\$ 21</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 350           | \$ -        | \$ -        | \$ 42           | \$ 59           | \$ 86           | \$ 113          | \$ 50           |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 5,368         | \$ -        | \$ -        | \$ 643          | \$ 909          | \$ 1,312        | \$ 1,735        | \$ 769          |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 583           | \$ -        | \$ -        | \$ 70           | \$ 99           | \$ 143          | \$ 189          | \$ 84           |
| # Internal, Overheads  | \$ 697           | \$ -        | \$ -        | \$ 83           | \$ 111          | \$ 156          | \$ 225          | \$ 121          |
| # Materials            | \$ 3,501         | \$ -        | \$ -        | \$ 420          | \$ 593          | \$ 855          | \$ 1,131        | \$ 501          |
| # Overheads - External | \$ 778           | \$ -        | \$ -        | \$ 93           | \$ 123          | \$ 175          | \$ 251          | \$ 135          |
| <b>Total</b>           | <b>\$ 11,276</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,352</b> | <b>\$ 1,894</b> | <b>\$ 2,726</b> | <b>\$ 3,644</b> | <b>\$ 1,661</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## New 115 kV Line from Baker Hill to East Norwich

### PROJECT INFORMATION

|                                   |                                         |                                               |                                          |                                     |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003539        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>Jan-1900 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is integrated part of East Norwich Substation is a 115/46 /34.5 kV Solution which is sepearate project defination

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers. It would facilitate satisfying several previously identified Bulk Electric System (BES) reliability needs detailed in prior studies including the 2018 North American Electric Reliability Corporation (NERC) BES Assessment and its subsequent updates.

Construction of the new 115kV Line 755 from the East Norwich Substation to the new Baker Hill Substation running generally west to east in the Towns of Norwich, New Berlin, Butternuts, Morris, Otego and Oneonta, a distance of 21.85 miles.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers.

The pre-conceptual was developed as part of the 2018 TPL-001 includes essential transmission and distribution upgrades to address identified needs The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed.

The selected solution consists of the complete rebuild of the existing East Norwich Substation. This project is integrated part of East Norwich Substation is a 115/46/34.5/4.8 kV Solution which is separate project definition

- New 115 kV line from E. Norwich - Baker Hill
- 21.8-mile 115 kV line within NYSEG's Oneonta Division.
- Use 1192 ACSR1 conductor and OPGW.
- Use Light Duty steel poles for all structures.
- All structures are direct embedded and guyed where possible.

New conductor rating (MVA) is [REDACTED]

- Project increases available headroom on the system.21.8-mile 115 kV line within NYSEG's Oneonta Division.
- Serves to connect the existing East Norwich and new Baker Hill Substations.
- The proposed 115 kV transmission line route parallels the existing NYSEG gas Right Of Way (54% of the route) as much as possible. Using guyed light duty steel poles for angles and dead ends reduces project costs by approximately \$27.4 M when compared to self-supported steel poles. Internal crews can maintain guys and anchors whereas qualified inspectors and specialty contractors are needed to maintain and repair foundations.

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

[REDACTED]

Deliverability: Addressing the underlining reliability needs, results in additional system headroom, and allows for an increase in renewable penetration. Selected Solution Alternatives: The new BAAH Rebuilds of Colliers and East Norwich will aid in the mitigation of initiating reliability needs. The new BAAH Rebuilds of Colliers and East Norwich. will aid in the mitigation of initiating reliability needs. Resolves all reliability and asset condition needs. Lower cost alternative. Slightly higher cost alternative. Lower construction and outage complexity. Easier Permitting and lower environmental impact (Art 7 Project) Lower Visual Impact Faster delivery timeline.

### Project Risks and Mitigation Plan:

Risk 1 - Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues.

Mitigation: Measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

Risk 2 - Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope.

Mitigation: To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs..

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) permitting, construction and outage sequences, long lead items procurement, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

**Risk of No Action:**

Deliverability: Addressing the underlining reliability needs, results in additional system headroom, and allows for an increase in renewable penetration..

## Project Alternatives:

Alternative 1: Build a new 115 kV transmission line from East Norwich to Baker Hill. Use 1192 ACSR1 conductor and OPGW. Use Light Duty steel poles for tangent structures. Dead ends and angles are self-supported steel poles on foundation. New conductor rating (MVA) is [REDACTED] [REDACTED] (ISD: 2029. Cost \$118.4 M (+50/-25%) Steel poles on foundation were selected for angle and dead-end structures because eliminating guy wires will lessen the environmental impact, lessen the visual impact on abutters and potentially aid in an expedient Article VII review.

## Basis for Project Estimates

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022          | 2023         | 2024        |  |  |
|------------------------|---------------|-------------|-------------|---------------|--------------|-------------|--|--|
| # AFUDC                | \$ 37         | \$ -        | \$ -        | \$ 2          | \$ 17        | \$ 19       |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -        |  |  |
| # External Services    | \$ 183        | \$ -        | \$ -        | \$ 183        | \$ 13        | \$ -13      |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -        |  |  |
| # Internal, Labor      | \$ 20         | \$ -        | \$ -        | \$ -          | \$ 20        | \$ -        |  |  |
| # Internal, Overheads  | \$ 23         | \$ -        | \$ -        | \$ 20         | \$ 4         | \$ -2       |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -          | \$ -         | \$ -        |  |  |
| # Overheads - External | \$ 44         | \$ -        | \$ -        | \$ 34         | \$ 13        | \$ -3       |  |  |
| <b>Total</b>           | <b>\$ 308</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 238</b> | <b>\$ 67</b> | <b>\$ 2</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029            | 2030            | 2031          |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|-----------------|---------------|
| # AFUDC                | \$ 128          | \$ -        | \$ -        | \$ 3          | \$ 22         | \$ 44           | \$ 32           | \$ 27         |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |
| # External Services    | \$ 1,962        | \$ -        | \$ -        | \$ 52         | \$ 334        | \$ 673          | \$ 492          | \$ 412        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |
| # Internal, Labor      | \$ 213          | \$ -        | \$ -        | \$ 6          | \$ 36         | \$ 73           | \$ 53           | \$ 45         |
| # Internal, Overheads  | \$ 256          | \$ -        | \$ -        | \$ 7          | \$ 41         | \$ 80           | \$ 64           | \$ 65         |
| # Materials            | \$ 1,280        | \$ -        | \$ -        | \$ 34         | \$ 218        | \$ 439          | \$ 321          | \$ 269        |
| # Overheads - External | \$ 286          | \$ -        | \$ -        | \$ 7          | \$ 45         | \$ 90           | \$ 71           | \$ 73         |
| <b>Total</b>           | <b>\$ 4,125</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 108</b> | <b>\$ 695</b> | <b>\$ 1,398</b> | <b>\$ 1,034</b> | <b>\$ 890</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Compliance Program - NYSEG

### PROJECT INFORMATION

|                                       |                                         |                                              |                               |                                    |
|---------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                 | <b>Project ID:</b><br>PRJ-004588        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Digital Grid | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This project is dedicated to implementing effective solutions to ensure strict compliance with NERC (North American Electric Reliability Corporation) standards. Its primary objective is to identify, prevent, and mitigate potential non-compliance issues that may affect the reliability and security of the electrical system.

The project specifically addresses critical standards, including PRC-002, PRC-004, PRC-005, PRC-006, PRC-023, PRC-025, PRC-026, PRC-027, CIP, NPCC Directories, and FAC-008.

#### Project Scope:

The 2025 project scope specifically focuses on mitigating PRC-005 compliance concerns and addressing relay thermal limitations, potentially related to PRC-023 compliance issues at the following stations

- Hancock | L955-1: Upgrade electromechanical relays to SEL-411L, SEL-451 and GE-L90 (three total)
- State Street | L972 and L976: Replace electromechanical bus bar relays to a new GE-B30 to improve relay thermal limitation. Replace failed RFL GARD device for PRC-005 compliance
- Erie Street | L926: Replace failed RFL 6745 teleprotection equipment with a new RFL device.
- Hillside and South Owego | L962: Replace teleprotection equipment to a new RFL device in order to reestablish communication with remote end (East Sayre )
- Hinman Road | L908: Replace failed 56K MODEM teleprotection equipment to a new 56K MODEM to meet PRC-005 compliance
- Montour Falls | T1-42: Replace electromechanical burned relays to SEL-411L microprocessor relay.
- Delhi | L951: Upgrade electromechanical relays to GE-L90 microprocessor relays.

~~Note: These project scopes are limited to addressing NERC Compliance requirements and relays that thermally limit transmission line operation~~

#### Project Benefits:

The benefits of this project include enhanced reliability and operational security of the electrical grid, as proactive compliance efforts significantly reduce the risk of outages and system disturbances. Additionally, by addressing thermal limitations on transmission lines through targeted relay upgrades, the project will directly contribute to increasing transmission capacity. This improvement facilitates greater power flow flexibility, accommodating higher loads, and supporting the integration of renewable energy resources. Furthermore, by mitigating compliance risks, the project helps avoid potential penalties and regulatory sanctions, contributing to operational continuity and reducing overall financial risks for the organization.

#### Project Risks and Mitigation Plan:

Potential risks associated with the project include technical difficulties during implementation, such as compatibility issues with existing equipment or unexpected system outages during upgrades. Additionally, there are risks related to delays caused by supply chain disruptions or availability of critical components, as well as potential regulatory changes that may necessitate mid-project adjustments.

To mitigate these risks, the project will implement rigorous pre-assessment processes to identify and address compatibility issues early on. Comprehensive contingency plans and robust project scheduling will ensure minimal disruption to operations. Regular communication and coordination with suppliers and stakeholders will help anticipate and manage supply chain constraints. Lastly, the project will maintain close collaboration with regulatory bodies to quickly adapt to any changes in compliance requirements.

**Risk of No Action:**

Risks associated with taking no action include increased probability of non-compliance issues, potentially resulting in regulatory penalties, increased system disturbances, operational disruptions, and limitations on transmission capacity, negatively impacting service reliability and integration capability.

**Project Alternatives:**

Alternatives evaluated included a complete upgrade of the protection and control system, and delaying implementation of certain upgrades pending future substation modernization projects. After careful evaluation, these alternatives were not selected due to higher associated costs and longer implementation timeframes. The chosen solution represents the optimal balance, effectively resolving compliance concerns and transmission line limitations in a cost-efficient manner within a short period of time, aligning with current regulatory standards.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 99            | \$ -            | \$ 15           | \$ 16           | \$ 16           | \$ 17           | \$ 17           | \$ 18           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 6,469         | \$ 2,200        | \$ 660          | \$ 680          | \$ 700          | \$ 721          | \$ 743          | \$ 765          |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 993           | \$ -            | \$ 153          | \$ 158          | \$ 163          | \$ 168          | \$ 173          | \$ 178          |
| # Internal, Overheads  | \$ 911           | \$ 182          | \$ 135          | \$ 110          | \$ 106          | \$ 107          | \$ 120          | \$ 150          |
| # Materials            | \$ 3,276         | \$ -            | \$ 507          | \$ 522          | \$ 537          | \$ 553          | \$ 570          | \$ 587          |
| # Overheads - External | \$ 1,073         | \$ 177          | \$ 166          | \$ 135          | \$ 131          | \$ 132          | \$ 148          | \$ 185          |
| <b>Total</b>           | <b>\$ 12,822</b> | <b>\$ 2,558</b> | <b>\$ 1,637</b> | <b>\$ 1,621</b> | <b>\$ 1,653</b> | <b>\$ 1,698</b> | <b>\$ 1,771</b> | <b>\$ 1,883</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III

### PROJECT INFORMATION

|                                   |                                            |                                              |                                           |                                    |
|-----------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>UH-N0000606-NYSEG-ET | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance    | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.. As of the January 2025, there are a total of 40 circuits, containing 951 work locations to be completed and it is expected to complete in 2034.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.



NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020             | 2021             | 2022            | 2023            | 2024             |  |  |
|------------------------|------------------|------------------|------------------|-----------------|-----------------|------------------|--|--|
| # AFUDC                | \$ 4,872         | \$ 1,312         | \$ 718           | \$ 585          | \$ 949          | \$ 1,308         |  |  |
| # CIAC                 | \$ -             | \$ -             | \$ -             | \$ -            | \$ -            | \$ -             |  |  |
| # External Services    | \$ 33,910        | \$ 11,895        | \$ 9,214         | \$ 4,579        | \$ 1,441        | \$ 6,781         |  |  |
| # Internal - Non-AC    | \$ 231           | \$ 7             | \$ 4             | \$ 62           | \$ 121          | \$ 37            |  |  |
| # Internal, Labor      | \$ 330           | \$ 24            | \$ 45            | \$ 53           | \$ 54           | \$ 154           |  |  |
| # Internal, Overheads  | \$ 4,535         | \$ 1,476         | \$ 1,343         | \$ 524          | \$ 242          | \$ 949           |  |  |
| # Materials            | \$ 1,050         | \$ 542           | \$ 79            | \$ 29           | \$ 362          | \$ 38            |  |  |
| # Overheads - External | \$ 7,202         | \$ 2,424         | \$ 1,910         | \$ 879          | \$ 487          | \$ 1,502         |  |  |
| <b>Total</b>           | <b>\$ 52,129</b> | <b>\$ 17,680</b> | <b>\$ 13,312</b> | <b>\$ 6,711</b> | <b>\$ 3,657</b> | <b>\$ 10,769</b> |  |  |

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ 201          | \$ -17        | \$ 31         | \$ 33         | \$ 35         | \$ 37         | \$ 40         | \$ 42         |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 2,664        | \$ 487        | \$ 308        | \$ 328        | \$ 349        | \$ 372        | \$ 397        | \$ 423        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ -252         | \$ -408       | \$ 22         | \$ 23         | \$ 25         | \$ 27         | \$ 28         | \$ 30         |
| # Internal, Overheads  | \$ 210          | \$ 37         | \$ 29         | \$ 25         | \$ 25         | \$ 26         | \$ 30         | \$ 39         |
| # Materials            | \$ 579          | \$ 486        | \$ 13         | \$ 14         | \$ 15         | \$ 16         | \$ 17         | \$ 18         |
| # Overheads - External | \$ -29          | \$ -236       | \$ 35         | \$ 30         | \$ 30         | \$ 31         | \$ 36         | \$ 46         |
| <b>Total</b>           | <b>\$ 3,372</b> | <b>\$ 348</b> | <b>\$ 438</b> | <b>\$ 452</b> | <b>\$ 478</b> | <b>\$ 509</b> | <b>\$ 547</b> | <b>\$ 598</b> |

[illegible]

## NERC Alert Priority III-NYSEG-Line 929

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007314        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 929 Line is in NYSEG's Oneonta Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2026. The current scope entails 10 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 936

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007315        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 936 Line is in NYSEG's Binghamton Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2026. The current scope entails 8 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure o meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 991

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007331        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 991 Line is in NYSEG's Brewster Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2025. The current scope entails 7 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure o meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 951

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007318        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 951 Line is in NYSEG's Oneonta Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2026. The current scope entails 15 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure o meet the clearance issues.



NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 261          | \$ -        | \$ 261          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,175        | \$ -        | \$ 1,175        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 61           | \$ -        | \$ 61           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 247          | \$ -        | \$ 247          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,175        | \$ -        | \$ 1,175        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 251          | \$ -        | \$ 251          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,170</b> | <b>\$ -</b> | <b>\$ 3,170</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NERC Alert Priority III-NYSEG-Line 969

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007322        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2029 | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 969 Line is in NYSEG's Geneva Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2029. The current scope entails 8 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 116          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 116          | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 1,140        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,140        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 81           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 81           | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 85           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 85           | \$ -        | \$ -        |
| # Materials            | \$ 42           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 42           | \$ -        | \$ -        |
| # Overheads - External | \$ 101          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 101          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,566</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,566</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NERC Alert Priority III-NYSEG-Line 973

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007324        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2029 | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 973 Line is in NYSEG's Auburn Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2029. The current scope entails 57 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 974

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007325        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2027 | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 974 Line is in NYSEG's Ithaca Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2027. The current scope entails 52 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027             | 2028        | 2029        | 2030        | 2031        |
|------------------------|------------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 922           | \$ -        | \$ -        | \$ 922           | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 9,067         | \$ -        | \$ -        | \$ 9,067         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 644           | \$ -        | \$ -        | \$ 644           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 737           | \$ -        | \$ -        | \$ 737           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 337           | \$ -        | \$ -        | \$ 337           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 876           | \$ -        | \$ -        | \$ 876           | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 12,584</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 12,584</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NERC Alert Priority III-NYSEG-Line 975

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007326        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2028 | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 975 Line is in NYSEG's Ithaca Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2028. The current scope entails 70 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.



NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 979

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007328        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2029 | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 979 Line is in NYSEG's Geneva Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2029. The current scope entails 14 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 994

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007332        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2026 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 994 Line is in NYSEG's Brewster Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2026. The current scope entails 12 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 164          | \$ -        | \$ 164          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,609        | \$ -        | \$ 1,609        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 114          | \$ -        | \$ 114          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 166          | \$ -        | \$ 166          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 60           | \$ -        | \$ 60           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 197          | \$ -        | \$ 197          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,309</b> | <b>\$ -</b> | <b>\$ 2,309</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NERC Alert Priority III-NYSEG-Line 998

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007335        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2027 | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 998 Line is in NYSEG's Ithaca Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2027. The current scope entails 30 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure o meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NERC Alert Priority III-NYSEG-Line 958

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007320        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2029 | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 958 Line is in NYSEG's Elmira Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2030. The current scope entails 39 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure o meet the clearance issues.



NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 682          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 682          | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 6,714        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 6,714        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 477          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 477          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 501          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 501          | \$ -        | \$ -        |
| # Materials            | \$ 250          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 250          | \$ -        | \$ -        |
| # Overheads - External | \$ 596          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 596          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 9,221</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 9,221</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NERC Alert Priority III-NYSEG-Line 964

### PROJECT INFORMATION

|                                   |                                         |                                              |                               |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-007321        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>0                   | <b>Start Date:</b><br>H1 2029 | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

In response to the October 7, 2010 NERC Recommendation to Industry: Consideration of Actual Field Conditions in Determination of Facility Ratings, AVANGRID owned RG&E, NYSEG and CMP were under a federal mandate to inspect all of its bulk power system transmission lines to determine if "clearance issues" exist and to fix them. These bulk lines included the 230kV and 345kV and select 115kV Priority I & II lines in 2010 and any issues were corrected by 2014. In December of 2012, the Federal Energy Regulatory Commission (FERC) approved a new definition of the bulk power system to include most lines at 115kV. Now that the definition of bulk power has changed, all AVANGRID owned electric utilities are under the same federal mandate to inspect transmission lines over 100kV and determine if clearance issues exist. All 115kV transmission lines not completed in the NERC Alert Priority I & II scope, completed by 2014, will be evaluated to determine how many points of interest will require correction. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements. This project is NERC Alert Priority III - NYSEG and the team is fixing the clearance issues on 115kV lines in NYSEG divisions of Auburn, Binghamton, Brewster, Elmira, Geneva, Hornell, Ithaca, Lancaster, Liberty, Mechanicsville, Oneonta, Plattsburgh. The project started with 79 lines totaling 1229 miles. Out of those 79 miles, 8 lines were completed and TECO'd, some became their own full line rebuild projects and others became CLCPA Phase I and Phase II scope of work. To date, there are a total of 40 circuits, containing 951 work locations to be completed. SOW entails of replacing complete structures or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions.

#### Project Scope:

NERC Alert Priority III - NYSEG team will be working to correct the point of interests. Corrections mean increasing the ground to conductor clearances to meet standards. Increasing clearances will be accomplished mostly by performing structure replacements or cross arms/braces, insulators, hardware, guy anchors, and adjusting wire tensions. The 964 Line is in NYSEG's Elmira Division, and all clearance issues determined by the NERC Alert Priority III design team will be resolved in 2030. The current scope entails 11 planned work location on the line.

#### Project Benefits:

The project was initiated by NERC Compliance department. The primary benefit of NERC Alert Priority III - NYSEG will be that it will meet the regulatory and compliance needs. Many of the structures that NERC team replaces are very old with heavy woodpecker damages and pole top completely rotten or are part of Transmission Line Deficiency scope of work. This increases the reliability.

#### Project Risks and Mitigation Plan:

The top risks on this project are 1)Weather 2)Outage 3)Standards (Some of the materials in the standard do not actually work on site) 4)Terrain (Rocky terrain).

##### Mitigation Plan:

- 1) Weather: As per ECC's recommendation, NERC team plans their work mostly in Spring and Fall as during winter and summer months the power usage is more and we can't get any Outage.
- 2) Outage: NERC team meets with ECC and asks for the recommendation on which Line looks best to take NRA/DNO. Plus, nothing can be done about sudden outage cancellations.
- 3) Standards: NERC team is working on this as a process improvement. NERC team lets standards team know on what design standards are not constructable.
- 4) Terrain: To mitigate the terrain risk, we order cross plate anchors and rock anchors to use whenever needed.

#### Risk of No Action:

The project was initiated by NERC Compliance department and is a federal mandate to complete this project to solve the clearance issues. The consequences if the project is not undertaken is that clearance issues will not be mitigated. If the clearance issues are not mitigated, this could potentially reduce the rating of the transmission line.

#### Project Alternatives:

This is a compliance requirement so fixing the clearance issue is mandatory.

- 1) The team is performing a study where some of the lines can be de-rated and by de-rating, we can meet the clearance issues between the ground and conductor.
- 2) Some of the lines are such that out of 100% of the structures, due to NERC compliance, NERC team will have to replace over 40% of the total structures. Planning group is going to study those lines and assess the assets and determine if these lines can be a part of full rebuild projects.
- 3) Some of the lines which were part of NERC SOW are now part of CLCPA full rebuild. These lines will be rebuild with LDS poles.
- 4) Also, NERC team is collaborating with Transmission Line Deficiency team (TLD) as many poles are part of TLD's SOW as well.
- 5) For the rest, NERC team does the structure replacement or tighten the tension and strengthen the infrastructure to meet the clearance issues.

NERC Alert Priority III - NYSEG team recently worked on L945/709 and replaced 40 structures. NERC team is using those quotes, invoices, and contracts as the basis of an estimate because that is the best it can get. All the NERC Alert Priority III - NYSGE lines are 115kV and on similar terrain. NERC team also improves the cost plan if the quotes lower or increase.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 134          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 134          | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 1,315        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,315        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 93           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 93           | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 98           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 98           | \$ -        | \$ -        |
| # Materials            | \$ 49           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 49           | \$ -        | \$ -        |
| # Overheads - External | \$ 117          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 117          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,806</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,806</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## BES - Wagner Hill

### PROJECT INFORMATION

|                                                           |                                         |                                              |                                          |                                       |
|-----------------------------------------------------------|-----------------------------------------|----------------------------------------------|------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>PRJ-002298        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Projects                         | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>12/31/2034         | <b>In-Service Date:</b><br>12/31/2034 |

#### Project description:

In 2018 Transmission Planning performed a comprehensive NERC TPL assessment. The Bath 115/34.5 kV Substation acts as a source into the center of a portion of the Elmira 34.5 kV network, which runs from West Erie Ave to Bath to Flat Street 115/34.5 kV Substations. Any contingency event which results in the loss of 115/34.5 kV transformation at Bath substation will eliminate Bath as a source into this portion of the network. Without the support from Bath at its center, voltage collapse in the surrounding area occurs.

#### Project Scope:

Tap 230 kV Line 68 into and out of a new 3-breaker ring bus substation called Wagner Hill. Install a new 230/115/34.5 kV transformer at Wagner Hill and construct two (2) new 34.5 kV circuits from Wagner Hill to Bath substation.

#### Project Benefits:

To comply with the requirements of the North American Electric Reliability Corporation (NERC) TPL-001-4 standard, The AVANGRID Networks Operating Companies – Central Maine Power (CMP), New York State Electric & Gas (NYSEG), Rochester Gas & Electric (RGE), United Illuminating (UI), and Maine Electric Power Company (MEPCO) – must conduct both near-term and long-term transmission system planning assessments including steady state, dynamic stability, and short circuit analyses. These studies assess the reliability of the AVANGRID Bulk Electric System (BES) based the system's ability to satisfy the performance requirements of TPL-001-4 when subjected to a prescribed set of planning events. If the BES is determined to be unable to satisfy the TPL-001-4 performance requirements, a Corrective Action Plan (CAP) must be developed to ensure the continued reliability of the BES.

#### Project Risks and Mitigation Plan:

The Wagner Hill and Bath Project involves greenfield substation construction, transmission line interconnection work on an existing 230 kV source, installation of a new 230/115/34.5 kV transformer, and expansion of the existing Bath 34.5 kV facilities. As with any multi-element transmission project, key execution risks include equipment procurement lead times, construction sequencing and outage coordination, site and geotechnical conditions, environmental and land-use constraints, and interface risks associated with modifications to in-service transmission assets. A primary project risk is the timely procurement and delivery of long-lead equipment, particularly the power transformer, high-voltage breakers, protection and control panels, and associated major station materials. This risk is mitigated through early engineering definition, advance procurement planning, vendor engagement, and schedule management focused on critical-path equipment. Additional project risks include unforeseen subsurface or site-development conditions at the new substation location and constructability constraints associated with building two new 34.5 kV circuits between Wagner Hill and Bath. These risks are mitigated through pre-construction site investigations, constructability reviews, route validation, and incorporation of appropriate engineering and cost contingencies.

**Risk of No Action:**

Without this project, the Bath area reliability deficiency would remain unresolved. Loss of Bath transformation under contingency conditions would continue to expose the Elmira-area 34.5 kV network to unacceptable voltage degradation and potential voltage collapse, resulting in elevated BES reliability and customer outage risk.

**Project Alternatives:**

Alternatives evaluated included a new 115 kV supply from Wagner Hill to Bath with a larger rebuild of Bath station, as well as non-wires alternatives. The 115 kV alternative was not selected due to Bath yard space limitations, greater complexity, and higher cost. Non-wires alternatives were not feasible due to the magnitude and certainty of load relief required to mitigate the contingency-driven voltage collapse condition would not provide an equivalent reliability solution.

**Basis for Project Estimates**

The estimate reflects the anticipated costs for engineering, material procurement, construction labor, civil/site work, protection and control, testing and commissioning, project management, and required outage implementation activities. Where detailed design information is not yet fully developed, appropriate allowances and contingencies have been applied to address estimating uncertainty consistent with the project's level of scope definition.

The estimate also reflects the expectation that the new 34.5 kV line construction can be completed without an Article VII filing, which reduces regulatory schedule and cost exposure relative to larger transmission line projects requiring more extensive siting approvals. However, the estimate remains subject to refinement as detailed engineering progresses and additional information becomes available regarding final equipment selection, site conditions, routing details, constructability requirements, outage sequencing, and market conditions affecting labor and material pricing.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total        | 2021        | 2022        | 2023        | 2024         | 2025         |  |  |
|------------------------|--------------|-------------|-------------|-------------|--------------|--------------|--|--|
| # AFUDC                | \$ 90        | \$ -        | \$ -        | \$ -        | \$ 33        | \$ 57        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| # External Services    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 90</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 33</b> | <b>\$ 57</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total         | 2026         | 2027          | 2028          | 2029        | 2030        |             |             |
|------------------------|---------------|--------------|---------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 199        | \$ 59        | \$ 67         | \$ 74         | \$ -        | \$ -        |             |             |
| # CIAC                 | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        |             |             |
| # External Services    | \$ 188        | \$ -         | \$ 64         | \$ 124        | \$ -        | \$ -        |             |             |
| # Internal - Non-AC    | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        |             |             |
| # Internal, Labor      | \$ 2          | \$ -         | \$ 1          | \$ 1          | \$ -        | \$ -        |             |             |
| # Internal, Overheads  | \$ 13         | \$ -         | \$ 5          | \$ 8          | \$ -        | \$ -        |             |             |
| # Materials            | \$ 9          | \$ -         | \$ 7          | \$ 2          | \$ -        | \$ -        |             |             |
| # Overheads - External | \$ 13         | \$ -         | \$ 5          | \$ 8          | \$ -        | \$ -        |             |             |
| <b>Total</b>           | <b>\$ 424</b> | <b>\$ 59</b> | <b>\$ 149</b> | <b>\$ 216</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

## BES SS Colliers

### PROJECT INFORMATION

|                                                           |                                         |                                              |                                           |                                     |
|-----------------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>PRJ-005794        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects                         | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>6/20/2016           | <b>In-Service Date:</b><br>1/1/2036 |

#### Project description:

In NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is an integrated part of 115KV L754 Colliers to Baker Hill project solution.

#### Existing Configuration:

NYSEG's Colliers Substation is a 115/46/4.8 kV station originally built in 1939 with a total of Five (5) key transmission elements. The station was originally built to provide a step-up location for the existing hydro plant located at the site. This hydro generator is still in operation today. The 115 kV portion of the station is configured in an undesirable straight/transfer bus design which interconnects two (2) transmission lines and two (2) 115/46 kV transformers. The 46 kV is also configured in an undesirable straight/transfer bus configuration with two (2) transmission lines and a single grounding transformer

#### Asset Condition:

Half of the 115 and a majority of the 46 & 4.8 kV breakers (6 of 8) are in poor condition

(2) 115/46 kV transformers are fixed tap (i.e. non-load-tap-changing) transformers with exterior signs of corrosion.

115/4.8 kV transformer is made of single phase units with no LTC and is 71 years old.

115/4.16 kV transformer is made of single phase units with no LTC and is 82 years old.

Control house has limited space and contains a majority of relays which are obsolete electromechanical type and are unsupported by the manufacturer.

The 46 and 4.8 kV foundations and structures at Colliers can be classified as poor condition and should be replaced as a part of any major substation upgrade.

The substation yard is adjacent to the Susquehanna River headwaters and spillway and existing yard is bordered by the 500-year flood zone.

The existing station is physically configured as a straight bus and is not expandable to a BAAH.

Existing 4.8 kV circuits are at the limit of their capacity

#### Project Scope:

The pre-conceptual design was developed as part of the 2018 TPL-001, which includes essential transmission and distribution upgrades to address identified needs. The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed. The selected solution consists of the complete rebuild of the existing Colliers Substation approximately 1 mile west of the current location along the existing NYSEG transmission ROW.

A three (3) bay 115 kV AIS BAAH & a 46 kV AIS straight bus with a tie breaker and a single 12.5 kV AIS bus

Install 8 SF6 Free Breakers

Install 10MVar 115kV CapBank

Install 2x 50MVA 115/46kV Transformer

Install 2x 14MVA 46kV/12.5kV Transformer

Upgrade the one (1) 4.8 kV circuit to two (2) new 12.5 kV circuits for a total of 8 miles with two new tie points and stepdown banks on the spur lines

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission. As a result,

Selected alternatives together introduce new

This project addresses the underlining reliability needs, results in additional system headroom, and allows for an increase in renewable penetration. The new BAAH Rebuilds of Colliers and East Norwich will aid in the mitigation of initiating reliability needs.

#### Project Risks and Mitigation Plan:

**Risk 1 - Inability to support load growth while the project is in development.** Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues.

**Mitigation:** Measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications, if reliability criteria violations are forecasted to occur prior to project completion.

**Risk 2 - Right-sizing:** One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope.

**Mitigation:** To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) land acquisitions, permitting, long lead items procurement, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

**Risk of No Action:**

**Project Alternatives:**

Alternative 1: A three (3) bay 115 kV GIS BAAH & a 46 kV GIS straight bus with a tie breaker and a single 12.5 kV GIS bus) Uses all non-standard equipment and sizes. Higher construction and outage complexity. Significant site grading required along with the possible need for a two story GIS building Congested Design with little room for future expansion

**Basis for Project Estimates**

The basis for the cost estimate is an order of magnitude cost that was determined based on the scope of the project. Estimates were unitized on a per-asset and per-mile basis based on multiple sources, including the analysis of historical costs for similar activities and projects at NYSEG. Project estimates will be updated and refined as the project progresses and more detailed information becomes available.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2021        | 2022        | 2023        | 2024          | 2025         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ 282        | \$ -        | \$ -        | \$ -        | \$ 105        | \$ 177       |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ -86        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -86       |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ -9         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -9        |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Overheads - External | \$ -14        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -14       |  |  |
| <b>Total</b>           | <b>\$ 172</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 105</b> | <b>\$ 67</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total            | 2026          | 2027            | 2028            | 2029            | 2030            |             |             |
|------------------------|------------------|---------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 377           | \$ 5          | \$ 55           | \$ 76           | \$ 156          | \$ 85           |             |             |
| # CIAC                 | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |             |             |
| # External Services    | \$ 5,773         | \$ 83         | \$ 837          | \$ 1,161        | \$ 2,392        | \$ 1,301        |             |             |
| # Internal - Non-AC    | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |             |             |
| # Internal, Labor      | \$ 628           | \$ 9          | \$ 91           | \$ 126          | \$ 260          | \$ 141          |             |             |
| # Internal, Overheads  | \$ 774           | \$ 15         | \$ 117          | \$ 152          | \$ 308          | \$ 182          |             |             |
| # Materials            | \$ 3,765         | \$ 54         | \$ 546          | \$ 757          | \$ 1,560        | \$ 849          |             |             |
| # Overheads - External | \$ 863           | \$ 16         | \$ 131          | \$ 170          | \$ 343          | \$ 203          |             |             |
| <b>Total</b>           | <b>\$ 12,179</b> | <b>\$ 183</b> | <b>\$ 1,775</b> | <b>\$ 2,441</b> | <b>\$ 5,018</b> | <b>\$ 2,761</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

## BES SS East Norwich

### PROJECT INFORMATION

|                                                           |                                         |                                              |                                           |                                     |
|-----------------------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>PRJ-005795        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Projects                         | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>1/0/1900            | <b>In-Service Date:</b><br>1/0/1900 |

#### Project description:

NYSEG's NERC TPL-001 assessment, the need for a number of new system upgrades were identified for the Bulk Electric System (BES) within the NYSEG service territory. The projects include enhancing substation infrastructure, adding reactive power support, and constructing new transmission lines. These projects aim to improve the reliability, capacity, and stability of the NYSEG bulk transmission system, ensuring it can meet the increased demand and maintain compliance with NERC TPL-001 standards. This project is integrated part of BES TL 755 115KV Baker Hill to East Norwich Solution which is separate project definition

#### Existing Configuration:

East Norwich Substation is a 115/46/34.5/4.8 kV station originally built in 1941 with a total of six (6) key transmission elements. The 115 kV portion of the station is configured in an undesirable straight/transfer bus design which interconnects three (3) transmission lines, two (2) 115/46 kV transformers and one 115/34.5 kV transformer. The 46 kV is also configured in an undesirable straight/transfer bus configuration with two (4) transmission lines and a single grounding transformer. Half of the 115 and a majority of the 46 kV breakers are in poor condition<sup>1</sup> Due to the criticality of the 46 kV breakers these will be replaced as part of the NYSEG breaker replacement program.

#### Asset Condition:

The two (2) 115/46 kV transformers are fixed tap (i.e. non-load-tap-changing) transformers with exterior signs of corrosion and are 68 years old. The 115/34.5 kV transformer is made of single phase units with LTC and is 46 years old. The Control house has limited space and contains a majority of relays which are obsolete electromechanical type and are unsupported by the manufacturer. The 46 kV foundations and structures at East Norwich can be classified as fair to poor condition. The four (4) spalled/cracked 46 kV column footings should be repaired as a part of any major substation upgrade. The substation yard is adjacent to the Chenango River and existing yard is bordered by the 100 & 500-year flood zones. The existing station is physically configured as a straight bus and is not expandable to a BAAH.

#### Project Scope:

The Project is a multi-value solution which addresses reliability and resiliency needs while also providing a means of integrating increased renewable energy resources for delivery to New York customers.

The pre-conceptual was developed as part of the 2018 TPL-001 includes essential transmission and distribution upgrades to address identified needs The project is currently in the pre-conceptual stage; the scope and schedule will be refined as detailed engineering activities are performed. The selected solution consists of the complete rebuild of the existing East Norwich Substation. This project is integrated part of BES TL 755 115KV Baker Hill to East Norwich Solution which is separate project definition

#### Rebuild A (4) bay 115 kV GIS BAAH

2x115kv/46 50MVA Power Transformers  
115/34.5kV 1x33MVA Distribution Transformer  
Eight 115kV Circuit Breakers  
One 46kV Circuit Breaker

Uses 115 kV GIS. Lower construction and outage complexity. Easier Permitting and lower environmental impact (Art 7 Project) Lower Visual Impact Faster delivery timeline.

#### Project Benefits:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

Deliverability: Addressing the underlining reliability needs, results in additional system headroom, and allows for an increase in renewable penetration. Selected Solution Alternatives: The new BAAH Rebuilds of Colliers and East Norwich will aid in the mitigation of initiating reliability needs. The new BAAH Rebuilds of Colliers and East Norwich. will aid in the mitigation of initiating reliability needs. Resolves all reliability and asset condition needs. Lower cost alternative. Slightly higher cost alternative. Lower construction and outage complexity. Easier Permitting and lower environmental impact (Art 7 Project) Lower Visual Impact Faster delivery timeline.

#### Project Risks and Mitigation Plan:

Risk 1 - Inability to support load growth while the project is in development. Delays in addressing load growth could lead to capacity constraints, resulting in worsening voltage violations and reliability issues.

Mitigation: Measures to minimize these risks include monitoring load growth closely and to develop operational contingency plans and/or implement short-term system modifications if reliability criteria violations are forecasted to occur prior to project completion.

Risk 2 - Right-sizing: One concern is that the cost-efficiency of projects can be severely impacted if a relatively new project must be re-worked in a way that results in redundancies or an overhaul of prior developed scope.

Mitigation: To minimize underbuilding risk, NYSEG designed the project such that project components were either right-sized, or were scalable, to be sufficient to satisfy expected system needs for at least 20 years (i.e., 2044). Right-sizing solutions for future load growth is an effective method for mitigating underbuilding risk in instances where (1) there is limited space for adding additional facilities and (2) the incremental cost of installing higher-capacity equipment does not materially increase total project costs.

Further assessment of project-specific risks is performed during the comprehensive solution assessment, which is required as part of the internal budget approval process. Typical project risks that are evaluated include (but are not limited to) permitting, construction and outage sequences, long lead items procurement, ground water monitoring, soil contamination, traffic control, energized equipment, and working in confined spaces.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Risk of No Action:</b><br><div></div>                                                                                                                                                                                                                                                                                                                                                                                                            |
| Deliverability: Addressing the underlining reliability needs, results in additional system headroom, and allows for an increase in renewable penetration.                                                                                                                                                                                                                                                                                           |
| <b>Project Alternatives:</b><br>Alternative 1: A three (3) bay 115 kV GIS BAAH & a 46 kV GIS straight bus with a tie breaker and a single 12.5 kV GIS bus: \$92.2 M (+50/-25%) Uses all standard equipment and sizes. Lower cost alternative. Higher construction and outage complexity.                                                                                                                                                            |
| <b>Basis for Project Estimates</b> <ul style="list-style-type: none"><li>• AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.</li><li>• Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.</li></ul> |

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2021        | 2022        | 2023        | 2024          | 2025          |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ 435        | \$ -        | \$ -        | \$ -        | \$ 162        | \$ 274        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ -68        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -68        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -7         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -7         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -11        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -11        |  |  |
| <b>Total</b>           | <b>\$ 348</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 162</b> | <b>\$ 186</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total           | 2026          | 2027            | 2028            | 2029            | 2030            |             |             |
|------------------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 262          | \$ 8          | \$ 43           | \$ 43           | \$ 50           | \$ 117          |             |             |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |             |             |
| # External Services    | \$ 4,022        | \$ 128        | \$ 665          | \$ 665          | \$ 764          | \$ 1,800        |             |             |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |             |             |
| # Internal, Labor      | \$ 437          | \$ 14         | \$ 72           | \$ 72           | \$ 83           | \$ 196          |             |             |
| # Internal, Overheads  | \$ 553          | \$ 23         | \$ 93           | \$ 87           | \$ 98           | \$ 252          |             |             |
| # Materials            | \$ 2,623        | \$ 84         | \$ 434          | \$ 434          | \$ 498          | \$ 1,174        |             |             |
| # Overheads - External | \$ 617          | \$ 25         | \$ 104          | \$ 97           | \$ 110          | \$ 281          |             |             |
| <b>Total</b>           | <b>\$ 8,515</b> | <b>\$ 282</b> | <b>\$ 1,412</b> | <b>\$ 1,399</b> | <b>\$ 1,602</b> | <b>\$ 3,820</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **RG&E Electric Compliance**

## BES - Line 949 115 kV Line Addition

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-002310        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The New 115 kV Line 949 Project is part of the NYSEG/RGE Bulk Electric System (BES) program. The New 115 kV Line 949 Project is planned to be built in the western part of Rochester in RG&E's territory. Line 949 will connect Station 418 to Station 48.

#### Project Scope:

The project will require building a new line to improve reliability and will also address some asset condition concerns. The scope is listed below:

Build a new 115 kV line from ST 418 to ST 48 (Line 949, 6.7 Miles)

Station 418, build 115kV termination

Station 48, build 115kV termination

Station 48, replace one 115 kV tie breaker and two 115kV switches

This project will require 6.7 miles of new transmission line construction amendment to the existing related Article VII was filed in February of 2020.

#### Project Benefits:

The Project is needed for RG&E to continue to ensure reliable service to customers in its Western Division. Specifically, constructing a transmission line to connect Station 48 and Station 418

#### Project Risks and Mitigation Plan:

**EM&CP Approval:** This project is an Article VII project which includes receiving approval from the NYS Public Service Commission to perform construction. The EMCP is an all encompassing document that details how we will perform the work, while simultaneously adhering the rules and regulations of the NYS DPS and NYS DEC. A delayed EMCP approval can delay the Construction Kick-Off leading to a change in the allocated CAPEX spend for the current and future years of the project. **Mitigation:** We had a few meetings with the DPS Staff prior to our submission, to have our work pre-reviewed and make sure we are providing a quality EMCP set. We have received only a handful of comments from Staff, and our actively updating our set, to meet the standard necessary for approval.

**Railroad Permits:** This project is paralleling two railroad tracks (CSX & GWRR). There is a risk identified with acquiring the necessary railroad construction permits, to perform the work along the tracks. The L949 is within a tight space, with limited work area when paralleling the tracks. In addition there is a risk to the construction schedule if these permits are not acquired on time. Which would also lead to a change in the allocated CAPEX spend for the current and future years of the project. **Mitigation** includes working with the engineering vendor EMA, to complete the interference studies. Also, while working with both railroad companies to receive approval of our plans and acquire the permits. We have also halted the delivery of the steel poles which would be erected close to the tracks. Comments received from EMA have mentioned that structure heights may need to change when paralleling the tracks. In order to prevent a re-work after delivery, we have worked with the steel vendor TAPP, to halt the delivery until we have a confirmed plan with the railroad companies.

**Other Co-Located Utilities:** This project has a few co-located utilities that parallel or cross the L949 route. Examples would include fiber lines, water/sewer mains, and gas lines. There are associated safety risks with improperly identified utilities during construction. **Mitigation:** We have been in contact with all utilities (i.e. Verizon, Sprint, Windstream, Monroe County Sewer, and more) to make sure we have any special construction methods incorporated into our EM&CP Plans. As well as confirming we have all agreements in place with those companies. DigSafe calls will be made prior to any drilling/digging during construction to have all utilities staked out along the ROW.

#### Risk of No Action:

The alternative to the Line 949 project (from Station 418 to Station 48) would to instead bring the line from Station 48 to Station 67. This would also be able to adequately solve the reliability need, however, this option was not explored further because the distance from Station 67 to Station 48 is significantly farther with no material benefit in electrical performance

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES - 947 Line Upgrade

### PROJECT INFORMATION

|                                   |                                         |                                               |                                           |                                    |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-002286        | <b>Charge Code:</b><br>Electric Transmission  | <b>Project Sponsor:</b><br>Carrier, Devin | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

The Line 947 Uprate Project is part of the NYSEG/RGE Bulk Electric System (BES) program. The Line 947 Uprate Project is located in western Rochester in RG&E's territory. Line 947 is a 115 kV line that connects Station 418 to Station 113, Station 113 to Spencerport and then Spencerport to Station 70. The project consists of a line uprate to improve reliability, the scope will require approximately 12.0 Miles of transmission line to be reconducted for Line 947 and will require a joint Article VII filing with lines 945, 946 and 917. These other three 115 kV transmission lines in the Corridor (Lines 917 - 3.5 Miles, 945 - 4.0 Miles, and 946 - 4.1 Miles) are in poor condition and have separate project definitions.

#### Project Scope:

Line 947 is a 115 kV line that connects Station 418 to Station 113, Station 113 to Spencerport and then Spencerport to Station 70.

- The scope will require approximately 12.0 Miles of transmission line
- Use 1192.5 ACSR conductor
- New conductor rating (MVA) is [REDACTED]
- 218 structures to be replaced with Steel Monopoles
- Replacement of four (4) line disconnect switches and strain bus section at St 070

#### Project Benefits:

The Project will correct these transmission system deficiencies by upgrading the 115kV lines reinforcing the bulk electric supply, and ensuring reliable service under the N-1 and N-1-1 contingency loss of other bulk electric system elements. Several contingencies on the bulk electric system result in a system topology [REDACTED]

[REDACTED] The 2018 Asset Management Assessment identified that the 115 kV lines 946, 945, and 917 from Station 418 to Station 7 are in poor condition. Line 947 is rated as fair.

#### Project Risks and Mitigation Plan:

1. Spencerport School District Re-Route: One significant risk is the potential dissatisfaction of the Spencerport School District with the proposed micro-reroute around their campus. The engineering and legal teams are actively working on solutions to address the school's concerns while minimizing the impact on surrounding landowners. Ensuring the school district's approval is crucial to avoid delays.
2. Parkland Alienation: The project requires parkland alienation for the micro-reroute through Heritage Park, which is a time-consuming process. If this process is not completed by next year, it could delay the construction start. To mitigate this risk, the team is collaborating with Government Affairs to submit a bill this year, aiming for it to be signed by the governor in 2026. This proactive approach is intended to secure the necessary approvals in a timely manner.
3. Construction Challenges in Populated Areas: Constructing the line through heavily populated areas in and around Rochester, NY, presents significant risks. A detailed construction sequence plan is essential to manage these challenges effectively. Additionally, a robust project outreach plan is necessary to ensure the public is well-informed about the project's impacts. Engaging with the community and maintaining transparent communication will help mitigate potential disruptions and foster public support.

By addressing these risks proactively, the project team aims to navigate potential obstacles and ensure a smooth progression towards the construction phase.

#### Risk of No Action:

There are multiple contingencies that result in line 947 to become overloaded. Furthermore, if age is used as an indicator of condition, this transmission line is more likely to have outages than a transmission line of a newer vintage. If there is no action, there may be an increased risk of customer outages and an increased duration of these outages. [REDACTED]



There were two electrically viable alternatives to the Line 947 Uprate project. The first was to rebuild Station 48 115 kV as 5-bay breaker-and-a-half station. The second was to build a parallel line to line 947 from Station 418 to Station 70. By inspection, both of these alternatives would be more expensive than the proposed line 947 uprate. Selected Solution Rationale: This was the most robust electrical performing solution, that can most accommodate future load growth and/or the increased penetration of renewable energy resources.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## BES NY.L946

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-007368        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2026             | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

The Line 946 Project is part of the NYSEG/RGE Bulk Electric System (BES) program. The Line 946 Project is located in western Rochester in RG&E's territory. Line 946 is a 115 kV line that connects Station 71 and Station 70 .The project consists of assets to improve reliability, the scope will require approximately 4.1 Miles of transmission line to be reconductored for Line 946 and will require a joint Article VII filing for 947, 945, 946 and 917. These other three 115 kV transmission lines in the Corridor (Lines 917 - 3.5 Miles, 945 - 4.0 Miles, and 947 - 12.0 Miles) are also integrated part of same solution these lines are in poor condition and have seperate project definition .

#### Asset Condition:

Average pole installation year is 1967 (in service ~50 years); Majority of poles are Cedar; Majority of poles are Strength Class 3 or 2. ; Conductor installed in 1955. (In service 65 years); 110 structures inspected in the field of which 108 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection the Line 946 structures, it is concluded the majority of the poles in the line (98%) are in a poor condition.

#### Project Scope:

Line 946 is a 115 kV line that connects Station 71 and Station 70  
- The scope will require approximately 4.1 Miles of transmission line  
- Use 1192.5 ACSR conductor  
[REDACTED]  
- Approximately 110 structures to be replaced with Steel Monopoles

#### Project Benefits:

The Project will correct these transmission system deficiencies by upgrading the 115kV lines reinforcing the bulk electric supply, and ensuring reliable service under the N-1 and N-1-1 contingency loss of other bulk electric system elements. [REDACTED]  
[REDACTED]

#### Project Risks and Mitigation Plan:

- Parkland Alienation:** The project requires parkland alienation for the micro-reroute through Heritage Park for L947, which is a time-consuming process. If this process is not completed by next year, it could delay the construction start of the whole solution including L946. To mitigate this risk, the team is collaborating with Government Affairs to submit a bill this year, aiming for it to be signed by the governor in 2026. This proactive approach is intended to secure the necessary approvals in a timely manner.
- Outages on an Overloaded System:** Given the critical nature of this group of lines in delivering power to a large part of the Rochester area, and the existing multiple contingencies that could lead to L947 becoming overloaded, securing outages for this project could be challenging. The winter weather in Rochester, NY, further complicates obtaining outages during this season. To mitigate this risk, a detailed construction sequence with a comprehensive outage breakdown must be developed. Frequent communication with the ECC will be crucial to avoid outage cancellations, which could significantly delay construction
- Construction Challenges in Populated Areas:** Constructing the line through heavily populated areas in and around Rochester, NY, presents significant risks. A detailed construction sequence plan is essential to manage these challenges effectively. Additionally, a robust project outreach plan is necessary to ensure the public is well-informed about the project's impacts. Engaging with the community and maintaining transparent communication will help mitigate potential disruptions and foster public support.

By addressing these risks proactively, the project team aims to navigate potential obstacles and ensure a smooth progression towards the construction phase.

Majority of poles for L946 are Strength Class 3 or 2 ; Conductor installed in 1955. (In service 65 years); 110 structures inspected in the field of which 108 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection the Line 946 structures, it is concluded the majority of the poles in the line (98%) are in a poor condition.

There are multiple contingencies that result in line 947 to become overloaded. Furthermore, if age is used as an indicator of condition, these transmission lines are more likely to have outages than a transmission line of a newer vintage. If there is no action, there may be an increased risk of customer outages and an increased duration of these outages.

No alternative solutions were explored because 110 structures were inspected in the field, and 108 of them were classified as being in poor condition due to visible deterioration (non-intrusive analysis). Based on the inspection of Line 946 structures, it was concluded that the line is high risk and would need to be replaced.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026          | 2027          | 2028            | 2029             | 2030          | 2031        |
|------------------------|------------------|-------------|---------------|---------------|-----------------|------------------|---------------|-------------|
| # AFUDC                | \$ 904           | \$ -        | \$ 13         | \$ 28         | \$ 108          | \$ 728           | \$ 27         | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -          | \$ -          | \$ -            | \$ -             | \$ -          | \$ -        |
| # External Services    | \$ 13,857        | \$ -        | \$ 204        | \$ 434        | \$ 1,652        | \$ 11,159        | \$ 408        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -          | \$ -          | \$ -            | \$ -             | \$ -          | \$ -        |
| # Internal, Labor      | \$ 1,506         | \$ -        | \$ 22         | \$ 47         | \$ 180          | \$ 1,213         | \$ 44         | \$ -        |
| # Internal, Overheads  | \$ 946           | \$ -        | \$ 20         | \$ 39         | \$ 128          | \$ 734           | \$ 25         | \$ -        |
| # Materials            | \$ 9,037         | \$ -        | \$ 133        | \$ 283        | \$ 1,077        | \$ 7,277         | \$ 266        | \$ -        |
| # Overheads - External | \$ 1,929         | \$ -        | \$ 42         | \$ 79         | \$ 261          | \$ 1,496         | \$ 52         | \$ -        |
| <b>Total</b>           | <b>\$ 28,179</b> | <b>\$ -</b> | <b>\$ 435</b> | <b>\$ 911</b> | <b>\$ 3,405</b> | <b>\$ 22,606</b> | <b>\$ 823</b> | <b>\$ -</b> |

[illegible]

## BES NY.L917

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-007370        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2026             | <b>In-Service Date:</b><br>H2 2031 |

#### Project description:

The Line 917 Project is part of the NYSEG/RGE Bulk Electric System (BES) program. The Line 917 Project is located in western Rochester in RG&E's territory. Line 917 is a 115 kV line that connects Station 7 and Station 69. It has tapped station 93. The project consists of a assets to improve reliability, the scope will require approximately 3.6 Miles of transmission line to be reconductored for Line 917 and will require a joint Article VII filing for 947, 945, 946 and 917. These other three 115 kV transmission lines in the Corridor (Lines 946 - 4.1 Miles, 945 - 4.0 Miles, and 947 - 12.0 Miles) are also integrated part of same solution these lines are in poor condition and have seperate project defination .

#### Asset Condition:

Average pole installation year is 1971 (in service ~50 years) Majority of poles are Cedar Majority of poles are Strength Class 3 or 2. Conductor installed in 1955, 1960 and 1976. Average years since installation is 60 years. 38 structures inspected in the field of which 28 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection of over half of the Line 917 structures, assume at least 74%of the poles in the line are in a poor condition.

#### Project Scope:

Line 917 is a 115 kV line that connects Station 7 and Station 69. It has tapped station 93.

- The scope will require approximately 3.6 Miles of transmission line
- Use 1192.5 ACSR conductor

- Approximately 28 structures to be replaced with Steel Monopoles

#### Project Benefits:

The Project will correct these transmission system deficiencies by upgrading the 115kV lines reinforcing the bulk electric supply, and ensuring reliable service under the N-1 and N-1-1 contingency loss of other bulk electric system elements.

#### Project Risks and Mitigation Plan:

1. Outages on an Overloaded System: Given the critical nature of this group of lines in delivering power to a large part of the Rochester area, and the existing multiple contingencies that could lead to L947 becoming overloaded, securing outages for this project could be challenging. The winter weather in Rochester, NY, further complicates obtaining outages during this season. To mitigate this risk, a detailed construction sequence with a comprehensive outage breakdown must be developed. Frequent communication with the ECC will be crucial to avoid outage cancellations, which could significantly delay construction

2. Construction Challenges in Populated Areas: Constructing the line through heavily populated areas in and around Rochester, NY, presents significant risks. A detailed construction sequence plan is essential to manage these challenges effectively. Additionally, a robust project outreach plan is necessary to ensure the public is well-informed about the project's impacts. Engaging with the community and maintaining transparent communication will help mitigate potential disruptions and foster public support.

3. Construction Around Least Bittern Mating Season: Studies along the L917 corridor have identified the presence of the state-threatened Least Bittern. To protect this species, construction must be avoided during their mating season, which spans from April 23rd to August 15th. This poses a risk as outages are most easily obtained during this period, increasing the likelihood of outage cancellations for the L917 portion of the project. To mitigate this risk, it is essential to develop a detailed construction sequence with a comprehensive outage breakdown. Additionally, a Least Bittern Protection Plan must be created 6 months prior to construction.

By addressing these risks proactively, the project team aims to navigate potential obstacles and ensure a smooth progression towards the construction phase.

Majority of poles are Strength Class 3 or 2. Conductor installed in 1955, 1960 and 1976. Average years since installation is 60 years. 38 structures inspected in the field of which 28 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection of over half of the Line 917 structures, assume at least 74% of the poles in the line are in a poor condition.. This Project is integrated part of Uprating of L947 conductor and single, and , multiple contingencies There are multiple contingencies that result in line 947 to become overloaded. Furthermore, if age is used as an indicator of condition, these transmission lines are more likely to have outages than a transmission line of a newer vintage. If there is no action, there may be an increased risk of customer outages and an increased duration of these outages.

No other solutions were explored as 38 structures were inspected in the field, of which 28 were classified as being in poor condition due to visible deterioration (non-intrusive analysis). Based on the inspection of the Line 917 structures, it is concluded that the majority of the poles (74%) are in poor condition and need to be replaced.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026          | 2027          | 2028            | 2029          | 2030             | 2031            |
|------------------------|------------------|-------------|---------------|---------------|-----------------|---------------|------------------|-----------------|
| # AFUDC                | \$ 843           | \$ -        | \$ 30         | \$ 16         | \$ 144          | \$ 28         | \$ 362           | \$ 263          |
| # CIAC                 | \$ -             | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -             | \$ -            |
| # External Services    | \$ 12,932        | \$ -        | \$ 458        | \$ 252        | \$ 2,207        | \$ 430        | \$ 5,553         | \$ 4,032        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -             | \$ -            |
| # Internal, Labor      | \$ 1,406         | \$ -        | \$ 50         | \$ 27         | \$ 240          | \$ 47         | \$ 604           | \$ 438          |
| # Internal, Overheads  | \$ 867           | \$ -        | \$ 46         | \$ 22         | \$ 171          | \$ 28         | \$ 343           | \$ 256          |
| # Materials            | \$ 8,434         | \$ -        | \$ 299        | \$ 164        | \$ 1,439        | \$ 280        | \$ 3,621         | \$ 2,630        |
| # Overheads - External | \$ 1,769         | \$ -        | \$ 93         | \$ 46         | \$ 349          | \$ 58         | \$ 700           | \$ 523          |
| <b>Total</b>           | <b>\$ 26,252</b> | <b>\$ -</b> | <b>\$ 976</b> | <b>\$ 529</b> | <b>\$ 4,550</b> | <b>\$ 871</b> | <b>\$ 11,184</b> | <b>\$ 8,143</b> |

[illegible]

## BES NY.L945

### PROJECT INFORMATION

|                                   |                                         |                                              |                                           |                                    |
|-----------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-007369        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2026             | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

The Line 945 Project is part of the NYSEG/RGE Bulk Electric System (BES) program. The Line 945 Project is located in western Rochester in RG&E's territory. Line 945 is a 115 kV line that connects Station 69 and Station 71 .The project consists of a assets to improve reliability, the scope will require approximately 3.0 Miles of transmission line to be reconducted for Line 945 and will require a joint Article VII filing for 947, 945, 946 and 917. These other three 115 kV transmission lines in the Corridor (Lines 917 - 4.1 Miles, 946 - 4.0 Miles, and 947 - 12.0 Miles) are also integrated part of same solution these lines are in poor condition and have seperate project definition.

#### Asset Condition:

Average pole installation year is 1971 (in service ~50 years) Majority of poles are Cedar with Strength Class 3 or 2. Conductor installed in 1955. (In service 65 years) 53 structures inspected in the field of which 48 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection 90%of the Line 945 structures, assume the majority of the poles in the line are in a poor condition.

#### Project Scope:

Line 945 is a 115 kV line that connects Station 69 and Station 71  
- The scope will require approximately 3.0 Miles of transmission line  
- Use 1192.5 ACSR conductor  
- Approximately 48 structures to be replaced with Steel Monopoles

#### Project Benefits:

The Project will correct these transmission system deficiencies by upgrading the 115kV lines reinforcing the bulk electric supply, and ensuring reliable service under the N-1 and N-1-1 contingency loss of other bulk electric system elements.

#### Project Risks and Mitigation Plan:

1. Parkland Alienation: The project requires parkland alienation for the micro-reroute through Heritage Park for L947, which is a time-consuming process. If this process is not completed by next year, it could delay the construction start of the whole solution including L945. To mitigate this risk, the team is collaborating with Government Affairs to submit a bill this year, aiming for it to be signed by the governor in 2026. This proactive approach is intended to secure the necessary approvals in a timely manner.
2. Outages on an Overloaded System: Given the critical nature of this group of lines in delivering power to a large part of the Rochester area, and the existing multiple contingencies that could lead to L947 becoming overloaded, securing outages for this project could be challenging. The winter weather in Rochester, NY, further complicates obtaining outages during this season. To mitigate this risk, a detailed construction sequence with a comprehensive outage breakdown must be developed. Frequent communication with the ECC will be crucial to avoid outage cancellations, which could significantly delay construction
3. Construction Challenges in Populated Areas: Constructing the line through heavily populated areas in and around Rochester, NY, presents significant risks. A detailed construction sequence plan is essential to manage these challenges effectively. Additionally, a robust project outreach plan is necessary to ensure the public is well-informed about the project's impacts. Engaging with the community and maintaining transparent communication will help mitigate potential disruptions and foster public support.

By addressing these risks proactively, the project team aims to navigate potential obstacles and ensure a smooth progression towards the construction phase.

#### Risk of No Action:

Average pole installation year is 1971 (in service ~50 years) Majority of poles are Cedar Majority of poles are Strength Class 3 or 2. Conductor installed in 1955. (In service 65 years) 53 structures inspected in the field of which 48 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection 90%of the Line 945 structures in a poor condition.

This Project is intergral part of Uprating L947 conductor. There are multiple contingencies that result in line 947 to become overloaded. Furthermore, if age is used as an indicator of condition, these transmission lines are more likely to have outages than a transmission line of a newer vintage. If there is no action, there may be an increased risk of customer outages and an increased duration of these outages.

No other solution was explored as 53 structures inspected in the field of which 48 classified with poor condition due to visible deterioration of the structure (non-intrusive analysis) Based on inspection of Line 945 structures, it is concluded the majority of the poles in the line (90%) are in a poor condition and need to be replaced.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026            | 2027          | 2028            | 2029            | 2030             | 2031        |
|------------------------|------------------|-------------|-----------------|---------------|-----------------|-----------------|------------------|-------------|
| # AFUDC                | \$ 637           | \$ -        | \$ 33           | \$ 14         | \$ 103          | \$ 55           | \$ 433           | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -            | \$ -             | \$ -        |
| # External Services    | \$ 9,772         | \$ -        | \$ 502          | \$ 209        | \$ 1,573        | \$ 850          | \$ 6,638         | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -            | \$ -             | \$ -        |
| # Internal, Labor      | \$ 1,062         | \$ -        | \$ 55           | \$ 23         | \$ 171          | \$ 92           | \$ 721           | \$ -        |
| # Internal, Overheads  | \$ 657           | \$ -        | \$ 50           | \$ 19         | \$ 122          | \$ 56           | \$ 411           | \$ -        |
| # Materials            | \$ 6,373         | \$ -        | \$ 328          | \$ 136        | \$ 1,026        | \$ 554          | \$ 4,329         | \$ -        |
| # Overheads - External | \$ 1,340         | \$ -        | \$ 102          | \$ 38         | \$ 249          | \$ 114          | \$ 837           | \$ -        |
| <b>Total</b>           | <b>\$ 19,841</b> | <b>\$ -</b> | <b>\$ 1,070</b> | <b>\$ 439</b> | <b>\$ 3,243</b> | <b>\$ 1,722</b> | <b>\$ 13,369</b> | <b>\$ -</b> |

[illegible]

## RG&E FERC 2222

### PROJECT INFORMATION

|                                                                     |                                         |                                                |                                        |                                    |
|---------------------------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                                | <b>Project ID:</b><br>PRJ-003773        | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Jones, Paul | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Model &<br>Advanced Operations | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Jan-2024         | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This is a mandatory project based on FERC (Federal Energy Regulatory Commission) Order 2222. FERC 2222 requires RTOs (Regional Transmission Organizations) (including NYISO (New York Independent System Operator) and ISO-NE (Independent System Operator New England)) to allow aggregations of DERs (Distributed Energy Resources) to participate in wholesale markets as single resources. FERC Order 2222 is mandated to be in place by the end of 2026. NYISO has been approved by FERC to stand up an interim market, which is live as of 4/16/24. This requires Avangrid to stand-up processes in New York first in order to be compliant with this timing. ISO-NE will be developing their requirements in 2025, which would move much of our CMP and UI efforts into 2026.

This FERC order will create a whole new class of customer/supplier, with needs for communications/relations, billing, dispute resolution, etc. This can create challenges that will grow as market participation grows. This project will require the establishment of new business process models, along with system changes, such as, SAP, databases, automation and websites. This order applies to all Avangrid Electrical Operating Companies: NYSEG, RGE, CMP, and UI. The requirements will differ by ISO (NYISO and ISO-NE), but the project will leverage similarities across all Avangrid Operating Companies where possible.

#### Project Scope:

In 2024, the project focused on creation of TO-BE process models to support FERC Order 2222 for NYISO. In 2025 and 2026, the project will focus on system changes to support automation of the new process, which will include process automation, database enhancements, and SAP Billing changes. Another critical component is the setup of the communication link between the aggregators and our ECCs (Energy Control Centers), which will require hardware, licensing and platform support. Project support is planned for manual billing, SAP billing updates, coordinator role, change management and process modeling. The in service date for full compliancy is 12/31/2026.

High level breakdown of budget:

- HW/SW: Setup of Aggregator communication link to ECC; Process Automation through Salesforce; SAP Billing changes
- External: Contractor engagement for manual billing, SAP billing updates, process automation and project support
- Internal Labor: Core Team engaged and numerous subject matter experts allocated to the project

#### Project Benefits:

As this is a mandatory FERC Order, the main benefit is to be compliant with this order. FERC Order 2222 is creating a market for DER (Dist Energy Resources) Aggregation.

Other benefits include:

- Compliance with both FERC 2222 Order and NYISO wholesale market, therefore no risk of non-compliance issues or fines
- Determination of best approach for establishing communication link between aggregator and our ECC, to be used for all OpCo's
- FERC Order 2222 will provide aggregation of DERs, and allow for dispatching. With the dispatching of Demand Response, this will be new with this order and of great benefit to rate payers.
- Establishment of this new interim market for NY, prior to full FERC Order 2222 timing of 12/31/26, will provide increased internal knowledge and experience with this new market and how to manage it
- Planning for SAP billing changes while NYISO market still minimal, will reduce manual billing efforts once FERC Order 2222 is fully compliant
- Enabling additional clean, energy DER resources to enter the wholesale market. These additional clean, renewable resources will aid in meeting NYS environmental goals and reduce GHG emissions.
- Implementation of this order may increase reliability as aggregations respond to load on the grid, such as, reducing load during peak times and providing generation.



**Project Risks and Mitigation Plan:**

1)Process Ownership: This FERC order creates an organizational risk, as these processes are new to our organization and it's not clear which area will be responsible. The team has identified the need for a new coordinator role to manage this process. Other areas impacted leverage existing processes, however, there is concern around the volume of enrollments and how this will grow over time, and being organizationally ready for this growth, if it occurs. This impacts the project as the coordinator needs to be identified early for engagement and training. Without clear ownership, it's difficult to get decisions on key topics. The team has created a task force to address this risk and bring a recommendation to leadership for decision. As a contingency, the project has identified an area and resource to support NYISO's interim market.

2)Duplicative Compensation: With this new wholesale market, there is a potential for resources to receive duplicative compensation. The FERC order states that if a DER participates in both retail and wholesale markets, market rules must prevent it from being compensated twice for the same service. The team has been working with the New York Joint Utilities to create a matrix that defines the various compensation programs and which ones a resource can participate in. The project will continue to refine this matrix to provide clear direction to resources on compensation and will work with NYISO as appropriate for guidance.

3)Interval Meter Requirement: NYISO requires a customer to have an interval meter to participate in the DER Aggregation program. In New York, MV90 meters will need to be used, because although the NY AMI meter project is underway, the AMI meters will not provide interval data functionality needed for bill settlement. The MV90 meters require a dedicated landline, which can potentially add cost to customers. The team is working to assure MV90 meters are available for this requirement. And there is a separate project in 2025 to add AMI interval meter functionality to SAP.

4)Manual Billing: Due to NYISO timing for start of enrollments, the immediate focus is on a manual billing process in order to fulfill billing of new aggregations anticipated in early 2025. The billing department has very limited resources to perform manual billing for these customers, so the project is working to bring on contractors to perform this work. Additionally, the project is planning to update SAP so that DERA billing will be automated.

**Risk of No Action:**

Regulatory Penalties and Reputation Risk: FERC Order 2222 is a mandatory regulation which mandates compliance by 12/31/2026. Additionally, NYSEG and RGE are within NYISO's territory and are required to follow NYISO's market design in response to FERC Order 2222. NYISO has created an interim market that went live in April 2024, which NYSEG and RGE are required to comply with. Non-compliance to either FERC Order 2222 or NYISO can cause reputational risk. Non-compliance can result in significant fines and penalties from regulatory bodies. There's also the risk of complaints from aggregators and customers, who may view our non-compliance as a roadblock to market participation.

**Project Alternatives:**

FERC Order 2222 mandates RTOs (Regional Transmission Organizations) to allow aggregations of DERs (Distributed Energy Resources) to participate in wholesale markets as single resources. While compliance with this order is mandated, there are no direct alternatives to meeting the specific requirements of FERC 2222. Due to the quick timing of the NYISO interim market, the project had to focus on manual efforts to support this new market, and determine technical specifications for establishing a communication link between our ECC and aggregators. Moving forward, the project will work on system solutions to automate these manual processes.

**Basis for Project Estimates**

The project cost estimates were driven by key project requirements and project team activities. The initial efforts on this project engaged internal personnel, and hardware/software expenses for building a required communication link. Internal efforts will continue through 2026, and external services are planned for project support (such as manual billing), creating a system to automate processes, and code SAP billing changes. We are working to gather vendor quotes, and have based some estimates on past project experiences. Additional project support costs (AFUDC/Internal and External Overheads) were also considered based on prior/known budget outcomes. Careful review of actual expenditures and a reconsideration of project estimates, overheads, and labor for the purpose of reforecasting are routinely conducted by the project team.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 35         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 35         |  |  |
| # Internal - Non-AC    | \$ 128        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 128        |  |  |
| # Internal, Labor      | \$ 0          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 165</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 165</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 173          | \$ 48         | \$ 125          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,468        | \$ 564        | \$ 904          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 187          | \$ 87         | \$ 100          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 52           | \$ -          | \$ 52           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 122          | \$ -          | \$ 122          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,001</b> | <b>\$ 699</b> | <b>\$ 1,303</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## FERC 881 Regulatory Compliance RGE

### PROJECT INFORMATION

|                                                                  |                                         |                                              |                                       |                                    |
|------------------------------------------------------------------|-----------------------------------------|----------------------------------------------|---------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                             | <b>Project ID:</b><br>PRJ-003647        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Jorge AITH | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Model & Advanced Operations | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Dec-2023        | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

FERC Order 881 mandates the comprehensive implementation of Ambient Adjusted Ratings (AARs) to optimize transmission line capacity based on forecasted weather conditions, specifically ambient air temperature. This represents a significant shift from RG&E current methodology, which relies on static ratings adjusted seasonally.

The new approach requires real-time updates to transmission line ratings, at least on an hourly basis, considering ambient air temperature and diurnal heating effects. AARs will be mandatory for all Bulk Electric System (BES) circuits.

The objective of this project is to ensure full compliance with FERC Order 881 across RG&E by December 2028. This includes the development and deployment of systems and processes to facilitate real-time rating adjustments, ensuring enhanced transmission line efficiency and reliability.

#### Project Scope:

##### Implementation of FERC Order 881

##### AAR Calculations:

Develop and integrate systems for real-time Ambient Adjusted Ratings (AARs) calculations.  
Ensure accurate and timely updates based on ambient air temperature and diurnal heating effects.

##### How will AAR be calculated:

**Hourly Calculation:** AARs will be determined at the beginning of each hour for both real-time and forecasted ratings.

**Day/Night Adjustments:** Ratings will consider solar heating during the day and cooler temperatures at night. Previously, day and night adjustments were not factored in, and solar heating was assumed to be constant throughout the day.

**Seasonal Ratings:** RG&E will implement 4 seasonal line ratings for extended transmission service.

This approach aims to improve the accuracy and transparency of transmission line ratings, potentially reducing congestion costs and enhancing reliability.

##### EMS Enhancements:

Upgrade the Energy Management System (EMS) to support real-time AARs.  
Implement necessary software and hardware enhancements for seamless integration.  
Siemens Spectrum 4.75  
This will involve developing communication protocols with the NYISO, which will serve as the data collection and retrieval platform for all NY Transmission Operators.

##### Training:

Conduct comprehensive vendor supported training programs for staff on the new AAR methodology and EMS enhancements.  
Team that are going to get training would be:  
1. Rating & Modeling Group  
2. Transmission Operators  
3. Outage Planning  
4. Transmission Planning

##### Increase in Transmission Line Capacity/Reduce Congestion:

Optimize transmission line capacity to handle increased loads efficiently.  
Implement strategies to reduce congestion and improve overall system reliability.

##### Coordination with NYISO:

Ensure compliance with reporting requirements by sending real-time AAR data to New York Independent System Operator.  
Establish protocols for regular communication and data sharing with NYISO to facilitate system-wide coordination and reliability.  
This will involve developing communication protocols with the NYISO, which serves as the data collection and retrieval platform for all NY Transmission Operators.

##### Professional Services for Integration:

Hire professional services specializing in system integration to assist with the deployment of AAR calculation software vendor and EMS enhancements.  
Ensure the integration of new systems into existing infrastructure, leveraging expert knowledge and experience.

##### New Software Needs:

Additional softwares that would be needed in terms of FERC 881 Project Support:  
Facilities Software: A software that would help to correlated multiple databases for NYISO and EMS.

#### Project Benefits:

**Enhanced Transmission Line Efficiency:**

**Optimized Capacity:** By using Ambient Adjusted Ratings (AARs), transmission lines can operate within their reasonable limits, especially during favorable weather conditions. This maximizes the utilization of existing infrastructure.

**Dynamic Adjustments:** Hourly generated data will help to get updates based on ambient air temperature and diurnal heating effects ensure that transmission line ratings are always within the reasonable limits of operations, reducing the risk of overloading and improving overall efficiency.

**Improved System Reliability:**

**Reduced Congestion:** By optimizing transmission line capacity, the system can handle increased loads more effectively, reducing congestion and the likelihood of bottlenecks.

**Regulatory Compliance:**

**Adherence to FERC Order 881:** Implementing the required changes ensures full compliance with FERC Order 881, avoiding potential penalties and regulatory issues.

**Cost Savings:**

**Operational Efficiency:** Improved efficiency and reduced congestion lead to lower operational costs and better resource allocation.

**Environmental Benefits:****Enhanced Data and Analytics:**

The integration of new software and systems will provide hourly generate AAR data and insights, potentially enabling better decision-making and proactive management of the electric grid. Enhanced data collection and processing capabilities allow for advanced analytics, helping to identify trends, predict issues, and optimize operations.

**Improved Coordination with NYISO:**

**Seamless Data Sharing:** Hourly generated AAR data sent to NYISO.

**Enhanced Communication:** Regular communication and data sharing protocols with NYISO to facilitate compliance with FERC and quicker response times to potential issues.

**Project Risks and Mitigation Plan:****1. EMS Enhancement Delays****Risk Mitigation:**

**Regular Progress Reviews:** Conduct frequent progress reviews to identify and address potential delays early.

**Resource Allocation:** Ensure adequate resources are allocated to the project to avoid bottlenecks.

**2. Missed Requirements****Risk Mitigation:**

**Requirements Management:** Use a robust requirements management tool to track and verify all requirements.

**Stakeholder Engagement:** Engage stakeholders regularly to ensure all requirements are captured and understood.

**Review and Validation:** Conduct regular reviews and validation sessions to ensure all requirements are met.

**Risk of No Action:****Regulatory Penalties:**

**Fines and Sanctions:** Non-compliance with FERC Order 881 can result in significant fines and sanctions imposed by the Federal Energy Regulatory Commission (FERC). These penalties can be substantial and impact the financial health of the company.

**Legal Actions:** Failure to comply may lead to legal actions, including lawsuits and enforcement actions by regulatory bodies, which can be costly and time-consuming

**Project Alternatives:**

FERC Order 881 mandates the use of Ambient Adjusted Ratings (AARs) for transmission lines to ensure real-time optimization based on weather conditions. While compliance with this order is required, there are no direct alternatives to meeting the specific requirements of FERC 881.

**Basis for Project Estimates**

The project cost estimates were aggregated from the costs of internal and inter-company labor, discrete scopes by selected Professional Service Vendors (external resources), materials including hardware and software licensing costs, and additional project support costs. These estimates are derived from the analysis of historical data on internal labor costs for known activities (estimated hours), and budgetary quotes from suppliers for necessary hardware and software. Additional project support costs (AFUDC/Internal and External Overheads) were also considered based on prior/known budget outcomes and cost estimation tools provided by the Project Management Office. Careful review of actual expenditures and a reconsideration of project estimates, overheads, and labor for the purpose of reforecasting are routinely conducted by the project team.

**FINANCIAL INFORMATION**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ 17         | \$ -        | \$ -        | \$ -        | \$ 2          | \$ 15         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ 628        | \$ -        | \$ -        | \$ -        | \$ 49         | \$ 580        |  |  |
| # Internal - Non-AC    | \$ 222        | \$ -        | \$ -        | \$ -        | \$ 66         | \$ 155        |  |  |
| # Internal, Labor      | \$ 15         | \$ -        | \$ -        | \$ -        | \$ 2          | \$ 13         |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 883</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 119</b> | <b>\$ 763</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 388          | \$ 107          | \$ 281          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,881        | \$ 995          | \$ 886          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 341          | \$ 140          | \$ 201          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 125          | \$ 68           | \$ 57           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 297          | \$ 149          | \$ 148          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,032</b> | <b>\$ 1,458</b> | <b>\$ 1,574</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## BES - Station 056 Reconfiguration

### PROJECT INFORMATION

|                                          |                                         |                                              |                                           |                                       |
|------------------------------------------|-----------------------------------------|----------------------------------------------|-------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric | <b>Project ID:</b><br>PRJ-002309        | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Projects        | <b>Rate Case Category</b><br>Compliance | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>4/1/2019            | <b>In-Service Date:</b><br>12/31/2025 |

#### Project description:

Station 56 Project is part of the BES Program at RG&E.

As covered in the 2018 Avangrid NERC Transmission Planning Report - Station 56 is an existing 115/34.5/12 kV substation in Rochester area. There are three trunks feeding the substation, Trunk 23 (Station 82 to Station 121), Trunk 24 (Station 122 to National Grid Mortimer) & Trunk 25 (Station 122 to National Grid Mortimer). There are two 115/34.5 kV transformers, 1T (connecting with Trunk 24) and 2T (connecting with Trunk 23), and two 115 / 12 kV transformers supplied by 12 kV bus connecting with Trunk 23 and Trunk 25. With current configuration, a [multiple contingency scenario] would result voltage collapse on 34.5 kV system and violate NERC stability requirement. To solve the voltage collapse problem, Transformer 1T will be terminated on Trunk 23 tap and Transformer 2T will be terminated on 115 kV bus supplied by Trunk 24 in and out of Station 56, which will provide redundant feed to Station 56 in case of loss of any side supply on Trunk 24.

#### Project Scope:

Station 56 is an existing 115/34.5/12 kV substation in Rochester area. With the current configuration, a multiple contingency scenario would result in voltage collapse on 34.5 kV system and violate NERC stability requirement. Transformer 1T will be terminated on Trunk 23 tap and Transformer 2T will be terminated on 115 kV bus supplied by Trunk 24 in and out of Station 56, which will provide redundant feed to Station 56 in case of loss of any side supply on Trunk 24. The work includes Conduct short circuit study, bus force calculation study, lightning study and yard lighting study.

- Design foundations and trenching for the new equipment to be installed.
- Design ground grid and roadway for the yard expansion.
- Design new 115kV three substation positions on the south west side of the substation, 115 kV Trunk 24E, 115 kV Trunk 24W, 115 kV transformer 2 and a new 115kV busbar. • Grading and retaining wall construction. • Relocation of MV line. • Install new 115 kV equipment: three (3) circuit breakers, five (5) disconnector switches, five (5) CCVT's and six (6) lightning arresters. • Build and Install two (2) A – frames for 115 kV lines., Swap of existing 115 kV trunk 24 and trunk 23 connections at the 115/34 kV side of the substation (South west side).
- Fence and driveway relocation on the south west side of substation. • Install Control and Protection A and B Systems for the expansion. • Existing station service transformers will be changed as per AC Calculation document 56-DD-006. Two new 167kVA transformers will be installed to supply power to substation.

#### Project Benefits:

To comply with the requirements of the North American Electric Reliability Corporation (NERC) TPL-001-4 standard, The AVANGRID Networks Operating Companies – Central Maine Power (CMP), New York State Electric & Gas (NYSEG), Rochester Gas & Electric (RGE), United Illuminating (UI), and Maine Electric Power Company (MEPCO) – must conduct both near-term and long-term transmission system planning assessments including steady state, dynamic stability, and short circuit analyses. These studies assess the reliability of the AVANGRID Bulk Electric System (BES) based on the system's ability to satisfy the performance requirements of TPL-001-4 when subjected to a prescribed set of planning events. If the BES is determined to be unable to satisfy the TPL-001-4 performance requirements, a Corrective Action Plan (CAP) must be developed to ensure the continued reliability of the BES.

#### Project Risks and Mitigation Plan:

The primary project risks are associated with execution of a substation reconfiguration at an energized BES facility, including outage coordination, equipment installation sequencing, integration of new 115 kV positions and buswork, relocation of existing facilities, and implementation of new control and protection systems. Additional execution risks include completion of civil work required for yard expansion, including foundations, trenching, grading, retaining wall construction, roadway work, and fence/driveway relocation, as well as procurement and installation of major station equipment. These risks are mitigated through completion of the required system and design studies, detailed engineering of civil and electrical modifications, coordinated outage planning, and staged construction/commissioning consistent with the defined scope of the Station 56 reconfiguration.

**Risk of No Action:**

If no action is taken, Station 56 will remain in its current configuration, under which a multiple-contingency condition could result in loss of 115/34.5 kV transformation and voltage collapse on the 34.5 kV system. The project justification identifies that the driving contingency is the possibility of loss of the Trunk 23 and Trunk 24, which leaves the surrounding 34.5 kV network radially served and results in unacceptable system performance. As documented, this condition create a BES reliability concern and requires implementation of a corrective action.

**Project Alternatives:**

The recommended alternative is the Station 56 reconfiguration that brings Trunk 24 in and out of the station and swaps the transformer terminations to improve source redundancy and system performance under contingency conditions. The principal station alternative identified in the supporting documentation was a full breaker-and-a-half rebuild consisting of approximately five bays, with Trunks 23, 24, and 25 all brought in and out and the remaining elements placed in dedicated bays. This alternative was not recommended due to its significantly greater scope and cost relative to the reliability needs currently being addressed. Non-wires alternatives were also considered; however, because the identified issue is driven by multiple critical contingencies that result in voltage collapse, the amount of load relief required would be substantial and was determined not to be a feasible or cost-effective solution

**Basis for Project Estimates**

Project estimates are based on the currently defined scope for the Station 56 reconfiguration, including required engineering studies, civil/site work, 115 kV yard expansion, new buswork and line positions, major equipment installation, control and protection systems, station service modifications, and construction/commissioning activities. The supporting whitepaper identifies the estimate structure by major cost categories including overheads, contingency, permits and land, labor, engineering, materials and equipment, and construction/commissioning. The estimate is therefore founded on the presently identified scope elements and equipment quantities for the selected reconfiguration, with the documented total project estimate carrying an accuracy range of +50% / - 25%.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2021        | 2022        | 2023        | 2024          | 2025          |  |  |
|------------------------|-----------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ 539          | \$ -        | \$ -        | \$ -        | \$ 539        | \$ 0          |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ -124         | \$ -        | \$ -        | \$ -        | \$ -207       | \$ 83         |  |  |
| # Internal - Non-AC    | \$ 0            | \$ -        | \$ -        | \$ -        | \$ 0          | \$ -          |  |  |
| # Internal, Labor      | \$ 409          | \$ -        | \$ -        | \$ -        | \$ 218        | \$ 191        |  |  |
| # Internal, Overheads  | \$ 76           | \$ -        | \$ -        | \$ -        | \$ 49         | \$ 27         |  |  |
| # Materials            | \$ 5            | \$ -        | \$ -        | \$ -        | \$ -7         | \$ 11         |  |  |
| # Overheads - External | \$ 276          | \$ -        | \$ -        | \$ -        | \$ 169        | \$ 107        |  |  |
| <b>Total</b>           | <b>\$ 1,181</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 762</b> | <b>\$ 419</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

[illegible]

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |





# **NYSEG Electric**

## **Electric Clean Energy**

## CLCPA Phase-1 Line 962 Rebuild

### PROJECT INFORMATION

|                       |                           |                       |                         |                         |
|-----------------------|---------------------------|-----------------------|-------------------------|-------------------------|
| <b>OpCo:</b>          | <b>Project ID:</b>        | <b>Charge Code:</b>   | <b>Project Sponsor:</b> | <b>Project Type:</b>    |
| NYSEG                 | UH-N0000702-NYSEG-ET      | Electric Transmission | Fairchild, Jon          | Project                 |
| <b>Business Area:</b> | <b>Rate Case Category</b> | <b>Project Stage:</b> | <b>Start Date:</b>      | <b>In-Service Date:</b> |
| Projects              | Electric Clean Energy     | IP4 Change            | H1 2025                 | H2 2029                 |

#### Project description:

Rebuild the existing 35-mile 115 kV line with 1192 Bunting ACSR conductor on an offset with light duty steel monopole structures. Modify terminal bay at South Owego. Modify terminal bay at Hillside.

#### Project Scope:

Rebuild 34.4 miles of 115 kV Transmission Line on an offset parallel to existing line. This includes 10 miles of Line 962 from South Owego to the newly located Lounsberry Station, and 24.4 miles of existing Line 962 to be renamed Line 750 from New Lounsberry Station to Watercure Station. The Line 750 will also connect at North Waverly Station and Chemung Station. 1192 Bunting ACSR and OPGW static wire will be utilized. Direct embed weathering steel monopoles and selected drilled pier foundations will be employed. Wood poles will be utilized for temporary lines in areas where an offset is not feasible. A brace post design will be implemented.

The proposed upgrade at North Waverly Station will be a new 3-way transmission line switch on a steel monopole. Project also consists of Distribution circuits 178 & 179 reroutes (~1 mile) in selected areas.

#### Project Benefits:

Rebuild the 115 kV Line 962 on an offset to the existing line with higher rated 1192 Bunting ACSR. AVANGRID standard 1192 Bunting ACSR creates the most headroom at a minimal cost increase versus smaller AVANGRID standard conductors in a full rebuild scenario. This headroom will allow for (renewable) generator interconnections anywhere along the line. Optical ground wire (OPGW) is included in this alternative to provide an enhanced future communication path for protection and control system upgrades. Light Duty steel poles were selected over wood poles for this alternative because they provide a more durable, longer lasting pole at a minimal impact to the total project cost of less than 1%. Transmission and distribution industry data indicates that steel poles have a 20 year longer lifespan than wood poles (60 years for steel vs. 40 years for wood). Additionally, wood poles are susceptible to insects and woodpeckers, where steel poles are not. The AVANGRID resiliency standard also states that all dead-end structures shall be steel pole construction. The line would be rebuilt with light duty steel poles in a davit arm delta configuration. Angle and dead-end structures would employ the use of guy wires. Guys and anchors were selected for this alternative because they provide structural support at a low upfront cost and modest future maintenance cost. This alternative would address all aging infrastructure on Line 962 and the new transmission line would be built in accordance with current AVANGRID standards. This alternative is especially favorable in that it allows much of the work to occur on an offset to the existing Line 962 thus limiting outages and meets to resolve the needs of the Project.

#### Project Risks and Mitigation Plan:

Outage constraints: Line cannot be taken out of service for extended periods because of criticality and lack of sectionalizing.  
Mitigation: Build on an offset.

#### Risk of No Action:

The NYSEG Line 962 is a 115kV line of approximately 35 miles connecting Hillside and South Owego Substations. The line is also passing through North Waverly, Lounsberry, and Chemung Substations. The Line consists of parallel set of 4/0 Penguin ACSR conductors; one was installed in 1929 and the other one was installed on the opposite side of the towers in 1958. The conductors are supported with 233 total structures; 194 steel lattice towers installed circa 1927, 35 wood poles and 4 steel structures. The conductor on the wood pole H-frame structures is 336 Oriole ACSR (limiting element) installed in 1957. More than 90% of the transmission line is configured with these conductor types. Line 962 is part of the NYISO/PJM electrical interface with a connection between the NYISO and PJM systems at the NYSEG North Waverly switching station. Line 962 directly serves over 3,000 NYSEG customers from the Lounsberry and Chemung substations as well as direct 115kV service to the Stagecoach natural gas storage facility. Line 962 cannot be taken out of service for extended periods because of criticality and lack of sectionalizing. In December 2020, an undetermined transient fault resulted in a 3000 customer outage. In January 2018, an overhead equipment failure caused an outage, affecting over 1800 customers. The 2020 CLCPA Study found deliverability needs with regards to Line 962.

The expected headroom benefit for this individual line rebuild is approximately 125MW.

**Project Alternatives:**

Preferred Option: Rebuild on an Offset with 1192 Bunting ACSR

**Alternative 1: Reconductor with 477 ACCR**

Aluminum Conductor Composite Reinforced (ACCR) wire is a high temperature, low sag conductor. ACCR is a smart technology designed to replace ACSR or ACSS on existing structures at the same tensions and clearances, giving the transmission line up to twice the ampacity. This solution alternative consists of reconductoring Line 962 with higher rated [REDACTED]

[REDACTED] In-kind structure replacements would be used to mitigate clearance violations, structural deficiencies, and any known asset condition issues in order to minimize any increased loading on existing to remain adjacent structures. This alternative assumes that any existing structures (1927 vintage) remain in-service if there are no known asset condition issues.

Why not chosen: Extended outage not feasible.

**Basis for Project Estimates**

Estimate accuracy: +/- 25% accuracy, 25% contingency

Design accuracy: 70% to allow Article 7 filing

Design: The current design includes structure types, spans, and reroutes to avoid residential areas. The design was informed by wetland delineation, SHPO, and species surveys. The center line shifted to avoid encroachments. Self-supporting structures to avoid guys in lands used as agricultural. The cost estimate has been updated to include current design quantities plus current framework values for material costs and construction labor costs. The current design includes the following structures:

- 154 Tangent (Light Duty Steel, Single Circuit, Install cold)
- 15 Tangent (Wood Pole, Temporary line, Install hot)
- 6 Angle (Light Duty Steel, Guyed, Single Circuit, Install cold)
- 15 Angle (Wood Pole Guyed, Temporary line, Install hot)
- 65 Dead-end (Steel Self-Supporting, replace cold)
- 3 Dead-end (Light Duty Steel, Guyed, Replace hot)
- 2 Switch Structures (Steel Self Supporting, 3-way switch, Install cold)

New ROW required: Based on survey, 24 acres of new corridor required plus the potential acquisition of 4 additional properties. The cost estimate assumes that clearing is required on half of existing ROW plus the new ROW for approximately 190 acres. Matting assumption is rural with a mix of upland and wetland, 2000 mats required per mile.

Additional: The project is expecting a complex construction sequence because outages not available on this line and there is an inability to sectionalize. This will require construction to remain on schedule and run many activities in parallel. Since 2019, Project has spent \$5.7m in engineering, environmental studies, and permitting efforts to prepare for Article VII filing. In service date originally assumed in 2028 is now anticipated for 2030.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020            | 2021          | 2022          | 2023            | 2024            |  |  |
|------------------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 850          | \$ 70           | \$ 128        | \$ 137        | \$ 207          | \$ 308          |  |  |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            |  |  |
| # External Services    | \$ 3,034        | \$ 1,009        | \$ 316        | \$ 387        | \$ 453          | \$ 869          |  |  |
| # Internal - Non-AC    | \$ 483          | \$ 32           | \$ 27         | \$ 22         | \$ 97           | \$ 304          |  |  |
| # Internal, Labor      | \$ 217          | \$ 0            | \$ -          | \$ 14         | \$ 80           | \$ 122          |  |  |
| # Internal, Overheads  | \$ 407          | \$ 114          | \$ 45         | \$ 45         | \$ 62           | \$ 140          |  |  |
| # Materials            | \$ 0            | \$ -            | \$ -          | \$ -          | \$ -            | \$ 0            |  |  |
| # Overheads - External | \$ 713          | \$ 180          | \$ 64         | \$ 78         | \$ 148          | \$ 242          |  |  |
| <b>Total</b>           | <b>\$ 5,703</b> | <b>\$ 1,406</b> | <b>\$ 582</b> | <b>\$ 683</b> | <b>\$ 1,047</b> | <b>\$ 1,986</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total             | 2025            | 2026             | 2027             | 2028             | 2029             | 2030             | 2031        |
|------------------------|-------------------|-----------------|------------------|------------------|------------------|------------------|------------------|-------------|
| # AFUDC                | \$ 1,477          | \$ 455          | \$ 1,022         | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 98,645         | \$ 1,220        | \$ 3,683         | \$ 18,810        | \$ 27,217        | \$ 27,474        | \$ 20,241        | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Overheads  | \$ 7,828          | \$ 90           | \$ 1,310         | \$ 1,774         | \$ 1,673         | \$ 1,655         | \$ 1,326         | \$ -        |
| # Materials            | \$ 15,861         | \$ -            | \$ 9,425         | \$ 6,436         | \$ -             | \$ -             | \$ -             | \$ -        |
| # Overheads - External | \$ 7,872          | \$ 87           | \$ 1,199         | \$ 1,755         | \$ 1,736         | \$ 1,718         | \$ 1,377         | \$ -        |
| <b>Total</b>           | <b>\$ 131,683</b> | <b>\$ 1,851</b> | <b>\$ 16,639</b> | <b>\$ 28,774</b> | <b>\$ 30,627</b> | <b>\$ 30,847</b> | <b>\$ 22,944</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## CLCPA Phase 1 - Jennison 115/46 kV Substation Upgrades

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                          |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002308                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

Jennison Substation is a 115/46 kV station originally built in 1945 with a total of eight (8) key transmission elements. This substation was originally constructed to interconnect the AES Jennison fossil fuel power plant to the grid; however, this generation plant has since been retired, leaving the Jennison facility with only five (5) transmission elements. The 115 kV portion of the station is configured in an undesirable straight/transfer bus design which interconnects four (4) transmission lines and a 115/46 kV transformer. The 46 kV is also configured in an undesirable straight/transfer bus configuration with two (2) transmission lines and a single grounding transformer. The project addresses both reliability and asset condition needs

Asset Condition issues at this station

Substation is approaching its end of life.

Oil circuit breakers poor are all obsolete with some installed in 1944 (77 years old)

115/46kV transformer (B1) consists of three (3) single phase units 74 years old.

The 46 kV ground bank (74 years old)

Jennison's 115 kV yard is located within a FEMA floodway and the 46 kV yard is located within the 100-year flood zone

#### Project Scope:

Rebuild Jennison Substation "off-site" as a 4 bay BAAH AIS 0.75 miles away. The 115 kV yard includes a 4-bay breaker-and-a-half AIS design, two (2) new 50 MVA 115/46 kV transformers with dedicated low side breakers and a new 46 kV yard designed as a new 69 kV AIS straight bus with a tie breaker. The 46 kV bus will be designed with two new 46 kV ground banks and two (2) additional positions, on either end of the bus tie, to accommodate future expansion. Bring line 919 in and out of the new 115 kV facility Rebuild the 115kV as a 4-bay Breaker-and-a-half (AIS)

Rebuild 46kV AIS Straight bus with tie breaker.

Install New two 115/46 kV transformers.

Install new Control House

Reroute/Re-terminate existing 115kV, 46 kV lines.

Bring New Line 115kV L919.

Bring New Line 115kV L756/943

#### Project Benefits:

Resolves all reliability and asset condition needs. Lower cost alternative. Offsite rebuild mitigates all identified flooding risks and allows for less complex construction sequencing since most of the new substation work can be constructed in an offline or de-energized manner Deliverability:

Asset Condition: Majority of structures were found to have asset condition needs such as NESC structural failures, clearance violations, visual inspection failures, etc.

#### Project Risks and Mitigation Plan:

Risk 1 - Delay in obtaining Art-7 permit and EMCP processing to delay start

Mitigation: Continued efforts between Avangrid, ELM and Legal Teams to address any concerns arising from time to time

Risk 2 - Delay in getting outage for circuits transfer from old Jennison to new Jennison impacting schedule and costs

Mitigation: Planning the Project in advance on the overall construction sequence and plan outages accordingly. Coordinating with ECC and Operations to understand the best possible time and sequence to schedule outages

Risk 3 - Changes in CAPEX leading to project pause/delays

Mitigation: Management to ensure the CAPEX plan aligns with the investment plan each year.

#### Risk of No Action:

Due to the topology of the Oneonta area, there are only a few 115 kV sources into the sub-transmission network. These sources are only on the southern, eastern, and western borders of the Oneonta Division. There are no 115 kV or higher sources in the center of the 46 kV sub-transmission.

Rebuild Jennison Substation “in-Place” as a 4 bay BAAH AIS in the existing location. Install two (2) new 115/46 kV 50 MVA transformers, and a new AIS 46 kV straight bus with tie breaker. Bring line 919 in and out of the new 115 kV facility. Raise the substation to mitigate flood concerns. This solution alternative was dismissed due to the existing space constraints on site, high construction costs, long construction and outage timelines, and the inability to rebuild within an active floodway. There are several construction sequencing complexities that would be required to rebuild this station in place while also keeping it energized and supplying customer load.

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## CLCPA Phase 1 - 115 kV Line 961 Rebuild

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                           |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003535                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Rebuild the existing 18-mile 115 kV line with 1192 Bunting ACSR conductor on an offset with light duty steel monopole structures. Modify terminal bay at South Owego.

#### Project Scope:

Rebuild 18 miles of 115kV transmission Line 961 on an offset parallel to existing line.  
Build approximately 2 miles of Line 961 to relocate it from Goudey Station to the new Oakdale Station.  
Build approximately 2 miles of Line 940 to relocate it from Goudey Station to the new Oakdale Station.  
The lines will connect to Oakdale Substation at A-frame structures.  
Modifications and minor expansion to the existing South Owego Substation terminal bays are required to accept Line 961 re-route.  
1192 Bunting ACSR and OPGW static wire.  
Direct embed weathering steel monopoles and select drilled pier caisson foundations. Brace post design.

#### Project Benefits:

Rebuild the 115 kV Line 961 on an offset to the existing line with higher rated 1192 Bunting ACSR. This conductor would address the deliverability need by a margin of 53%. AVANGRID standard 1192 Bunting ACSR creates the most headroom at a minimal cost increase versus smaller AVANGRID standard conductors in a full rebuild scenario. This headroom will allow for (renewable) generator interconnections anywhere along the line. Optical ground wire (OPGW) is included in this alternative to provide an enhanced future communication path for protection and control system upgrades. Light Duty steel poles were selected over wood poles for this alternative because they provide a more durable, longer lasting pole at a minimal impact to the total project cost of less than 1%. Transmission and distribution industry data indicates that steel poles have a 20 year longer lifespan than wood poles (60 years for steel vs. 40 years for wood). Additionally, wood poles are susceptible to insects and woodpeckers, where steel poles are not. The AVANGRID resiliency standard also states that all dead-end structures shall be steel pole construction. The line would be rebuilt with light duty steel poles in a davit arm delta configuration. Angle and dead-end structures will employ the use of guy wires. Guys and anchors were selected for this alternative because they provide structural support at a low upfront cost and modest future maintenance cost. This alternative will address all aging infrastructure on Line 961 and the new transmission line would be built in accordance with current AVANGRID standards. In order to accept the newly rebuilt Line 961, modifications to the terminal bay at South Owego Substation will be required. The new Line 961 will connect to the new Oakdale Substation. Goudey Substation will be decommissioned under a separate project. This alternative is especially favorable in that it allows much of the work to occur on an offset to the existing Line 961 thus limiting outages.

#### Project Risks and Mitigation Plan:

Outage constraints: Line cannot be taken out of service for extended periods because of criticality and lack of sectionalizing.  
Mitigation: Build on an offset.

#### Risk of No Action:

NYSEG Line 961 is a 115 kV line, with an approximate length of 18 miles, connecting the Goudey and South Owego Substations. The conductor is supported by 128 total structures comprised of 97 steel lattice towers installed circa 1927, 24 wood pole structures and 7 steel pole structures. The line consists of a parallel set of 4/0 Penguin ACSR conductors; one set was installed in 1929 (92 years old) and a second set was installed on the opposite side of the towers in 1958 (63 years old). The conductor on the wood pole H-frame structures is 336 Oriole ACSR (limiting element) installed in 1957 (64 years old). More than 90% of the transmission line is configured with these conductor types.

After evaluating asset conditions need, it is evident that 30% of structures on the line needs replacement due to clearance violations, structural failures and TLDs. Also, 100 % of existing spans exceed the NESC 250B conductor tension limit.

#### Project Alternatives:

Alternative 1: Reconductor the line with 477 Hawk ACCR on the existing steel lattice towers.  
ACCR wire is a high temperature, low sag conductor. ACCR is a smart technology designed to replace ACSR or ACSS on existing structures at the same tensions and clearances, giving the transmission line up to twice the ampacity. This solution alternative consists of reconductoring Line 961. This conductor would address the deliverability need by a margin of 42%. The analysis for this alternative included an assessment of span clearances and structural loading against current NESC code and the AVANGRID Heavy Ice load case. In-kind structure replacements would be used to mitigate clearance violations, structural deficiencies, and any known asset condition issues in order to minimize any increased loading on remaining adjacent structures. This alternative assumes that any existing structures (1927 vintage) remain in-service if there are no known asset condition issues. As a result of this reconductor alternative, 96 structures (out of 122) or 75% of structures would need to be replaced.  
This reconductor alternative was dismissed because it is not a cost effective solution when compared to a full rebuild. This study also concluded that an extended outage on Line 961 is not feasible due to limited alternate supply options under emergency outage conditions. Additionally, this alternative requires significant modification without meeting AVANGRID standards and leaves 94-year-old assets in service.

The cost estimate offers a detailed financial projection for the project, incorporating the current understanding of the project scope, prevailing market conditions, and relevant historical data. It includes anticipated expenses for internal labor, external resources, materials, engineering (both internal and external), and necessary project support costs. These estimates are derived from various sources, such as historical man-hour data, construction costs for similar activities, budgetary quotes from suppliers for required materials, equipment, and services, as well as analogous cost estimates from similar projects within NYSEG. Additionally, the estimates account for appropriate project support costs, overheads, and allocations. Project estimates are regularly reviewed and updated as the project advances and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## CLCPA Phase 1 - Trans Line - 949 Rebuild

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                          |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003542                   | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H1 2028 |

#### Project description:

Rebuild Line 949 on an offset with 1192 ACSR1 and OPGW. The line would be rebuilt with light duty steel poles in a davit arm delta configuration. Angle and deadend structures employ the use of guy wires. [REDACTED]

#### Project Scope:

Line 949 is a 115 kV line, with an approximate length of 25 miles, connecting the Jennison and Delhi Substations. The original 4/0 EK Copperweld conductor (limiting element) is supported by 156 wood H-frame structures, 16 steel poles and 12 lattice towers that were originally built circa 1948. There are two sections of 1033 Ortolan ACSR conductor which were upgraded in 1975. The line has a 3-mile-long tap which is approximately six miles away from the Jennison Substation and feeds the Sidney Railroad Substation. Rebuild the existing 25-mile 115 kV line with 1192 Bunting ACSR conductor on an offset with light duty steel monopoles.

#### Project Benefits:

The Line 949 rebuild resolves all known asset condition needs inherent to a 73-year-old transmission line. This solution alternative results in a significant increase in the rating of Line 949 which addresses all deliverability constraints and creates sufficient headroom for (renewable) generator interconnections. The new rating of this 115 kV line will be [REDACTED]. This project will be built in accordance with current AVANGRID standards.

#### Project Risks and Mitigation Plan:

Outage constraints: Line cannot be taken out of service for extended periods because of criticality and lack of sectionalizing.  
Mitigation: Build on an offset.

#### Risk of No Action:

The existing 4/0 EK Copperweld conductor is 73 years old. Copperweld overhead wire is no longer an industry standard and has become difficult to source. If conductor failure occurs, outages could be elongated due to inability to locate the original conductor type and associated hardware. This line currently cannot be taken out of service for extended periods due to criticality and lack of sectionalizing. There have been zero outages recorded in the last four years. The 2020 CLCPA Study found deliverability needs with regards to Line 949. The existing LTE Summer rating of Line 949 is [REDACTED].

#### Project Alternatives:

Preferred Option: Rebuild on an offset with 1192 Bunting ACSR

Alternative #1 - Reconductor with 1192 ACSR: This solution alternative consists of reconductoring Line 949 with higher rated [REDACTED] 1192 Bunting ACSR conductor. This alternative includes the replacement of one of the existing overhead shield wires with an optical ground wire (OPGW), providing an enhanced future communication path for protection and control system upgrades. The analysis for this alternative included an assessment of span clearances and structural loading using current NESC code and the AVANGRID Heavy Ice load case. In-kind structure replacements would be used to mitigate clearance violations, structural deficiencies, and any known asset condition issues in order to minimize any increased loading on remaining adjacent structures. This alternative assumes that any existing structures (1948 vintage) remain in-service if there are no known asset condition issues.

Alternative #2 - Reconductor with 665 ACCR: This solution alternative consists of reconductoring Line 949 with higher rated [REDACTED]. This alternative includes the replacement of one of the existing overhead shield wires with an optical ground wire (OPGW), providing an enhanced future communication path for protection and control system upgrades. The analysis for this alternative included an assessment of span clearances and structural loading using current NESC code and the AVANGRID Heavy Ice load case. Besides addressing all clearance and structural issues due to the reconductor, this alternative would also address all known asset condition issues. In-kind structure replacements would be used to mitigate clearance violations, structural deficiencies, and any known asset condition issues in order to minimize any increased loading on remaining adjacent structures. This alternative assumes that any existing structures (1948 vintage) remain in-service if there are no known asset condition issues.

Design: The current design includes structure types, spans, and reroutes to avoid residential areas. The design was informed by wetland delineation, SHPO, and species surveys. The center line shifted to avoid encroachments. Self-supporting structures to avoid guys in lands used as agricultural. The cost estimate has been updated to include current design quantities plus current framework values for material costs and construction labor costs. New ROW will be required and based on survey. The cost estimate assumes that clearing is required on half of existing ROW plus the new ROW. Matting assumption is rural with a mix of upland and wetland, 2000 mats required per mile.

[illegible]

## CLCPA Phase 1 - Lounsberry 115/12.5 kV Substation Full Rebuild

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                          |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>9301-1474-1310-NY-ET         | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H1 2028 |

#### Project description:

This project's purpose is to mitigate the flood risk at Lounsberry by relocating the station. The existing Lounsberry 115 & 12.5 kV yard is located just outside the FEMA floodway and the entire yard is located within the 100 year flood zone. The maximum depth of water anticipated during a 100 year flood event is 13 feet above existing grade and the station already experienced a flood in 2011 where the water level rose to 11' and inundated all substation equipment. The flood areas completely isolate the station from any-and-all access during flood events making any operation of the station during a flood infeasible. Due to the lack of modern protection & control equipment, outage events require manual switching at the station. There is no high side circuit breaker on the existing transformer which means any fault will require manual replacement of a fuse and an outage the 115 kV Line 962. During flood events, the entire station must be taken out of service and is inaccessible.

#### Project Scope:

The Lounsberry Substation, along with projects for the relocation of Transmission Lines 961 and 962, is part of the Climate Leadership and Community Project Act (CLCPA). At the completion of these projects, there will be an updated substation that the new Transmission Lines 961/962 can tie into, resulting in meeting the power requirements of the CLCPA.

The complete rebuild and relocation of the Lounsberry Substation will occur approximately 1 mile to the east out of the 500 year flood zone and along the existing L962 corridor. The design will include an expandable three breaker 115 kV ring bus, a new 115/12.5 kV Control and GIS building, one new 22.4 MVA 115/12.5 kV LTC power transformer, accommodation for a future second transformer bank, and three 12.5 kV GIS SCADA controlled line breakers for two existing and one future distribution line.

#### Project Benefits:

This project allows the Lounsberry Substation to be relocated to a new location that is out of a 100 year flood plain allowing for safe access and significantly reducing the risk of equipment damage/safety during times of natural disasters. The current substation does not meet the power requirements for the CLCPA, and the new relocated substation will be designed to meet the CLCPA requirements, including future expansion.

Modern equipment equipped with advanced technology will replace the outdated equipment. This technology can quickly identify and isolate faults, thereby reducing the duration and frequency of power interruptions. Additionally, this new equipment often features enhanced communication capabilities, allowing for real-time monitoring and remote operation, further improving response times and operational efficiency.

#### Project Risks and Mitigation Plan:

Throughout this project there will be several risks.

The initial risks will be the Article VII filing, obtaining permits, conceptual design, and procurement. Keeping these items on track is crucial to the project. This is currently being accomplished by weekly meetings, periodic discussions, paying attention to lead times, and making sure to order equipment in a timely manner based off the project's schedule and the specific lead time of each piece of major equipment.

The next and biggest risk will be procuring an Engineering and Construction contract and starting construction. This phase requires strategic planning to bring the project in on time and on schedule. The current plan in place to mitigate this work is to schedule frequent meetings.

The final stage is closeout and energization of the substation. Through the entire processes, the substation team and lines teams will be communicating the status of each project and rectifying any issues that may rise during the each phase.

The unknown project risk is weather. During storms or natural disasters crews and contractors may have to leave site to address emergency issues in other locations. If this happens during the construction of the Lounsberry Substation rebuild/relocation project, the team will hold meetings with the lines and substation groups to discuss getting back on track.

#### Risk of No Action:

The decision to take "no action" would leave the current Lounsberry Substation in a 100 year flood plain that is in accessible during a flood and creates personnel safety concerns. The equipment at the station lacks modern technology that could control equipment by automation and/or remote access processes. This technology could allow for a faster solution during equipment failure or natural disasters. This project is part of the Climate Leadership and Community Protection Act (CLCPA). The substation, in its current state, is not capable of handling the CLCPA requirements and needs to be updated.

**Project Alternatives:**

Lounsberry Substation had 3 different alternates.

**Alternate #1: 115/12 kV Full Rebuild in a New Location**

The preferred alternative includes the complete rebuild and relocation of the Lounsberry Substation approximately 1 mile to the east out of the 100 year flood zone and along the existing L962 corridor. This design will include an expandable 3 breaker 115 kV ring bus, a new 115/12.5 kV Control and GIS building, 1 new 22.4 MVA 115/12.5 kV LTC power transformer, accommodation for a future second transformer bank, and three 12.5 kV GIS SCADA controlled line breakers for two existing and one future distribution line. Alternative 1 was the selected solution alternative. Alternative 1 was selected as it was the only alternative to address all identified needs, it has the least complexity, lowest long term maintenance costs, and allows for the most future expansion which could be either a second transformer bank or a new renewable generator interconnection. The Lounsberry substation's 115 kV facilities will be configured as a 115 kV AIS expandable 3-breaker ring bus with 3000 A, 40 kA circuit breakers. The 12.5 kV GIS will have a 25 kA interrupting capability with the main bus and transformer breakers rated to 2000 A and the line breakers will be rated at 1200 A. This alternative also includes a new 22.4 MVA 115/12.5 kV power transformer with LTC and a new control building. The station will be sized for future expansion and has no issues with flooding.

**Alternate #2: Substation Floodwall with 12.5 kV Substation Upgrades**

The construction of a 15' high sheet pile and concrete wall around the entire perimeter of the substation. The station will also include a dewatering system consisting of 8 pumps (4 normal and 4 backup) to deal with rainfall within the wall and any groundwater seepage. The access gate will include a flood control gate that is designed to close during a flood event. This alternative also includes the installation of two (2) 12.5 kV circuit breakers as per the original station topology along with motor operated disconnect switches. This alternative also includes a new control house to allow for system protection and control equipment as well as a new station service to provide power to the control house and the dewatering system. This alternative was dismissed as it did not allow for access to the substation during a flood event or address the deliverability needs on Line 962.

**Alternate #3: Substation Floodwall with 115/12.5 kV Substation Upgrades**

The construction of a 15' high sheet pile and concrete wall around the entire perimeter of the substation. The station will also include a dewatering system to avoid dealing with groundwater seepage during a flood event. This alternative also includes the installation of two (2) 12.5 kV circuit breakers as per the original station topology along with motor operated disconnect switches, one (1) 115/12.5 kV 22.4 MVA power transformer and two (2) new 115 kV line breakers and a high side transformer breaker. This alternative also includes a new control house to allow for system protection and control equipment as well as a new station service to provide power to the control house and the dewatering system. This alternative was dismissed as it did not allow for access to the substation during a flood event or address the deliverability needs on the Line 962.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022         | 2023          | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|--------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 63           | \$ -        | \$ -        | \$ 0         | \$ 13         | \$ 50           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # External Services    | \$ 439          | \$ -        | \$ -        | \$ 4         | \$ 257        | \$ 178          |  |  |
| # Internal - Non-AC    | \$ 1            | \$ -        | \$ -        | \$ 0         | \$ 0          | \$ 0            |  |  |
| # Internal, Labor      | \$ 306          | \$ -        | \$ -        | \$ 13        | \$ 94         | \$ 199          |  |  |
| # Internal, Overheads  | \$ 173          | \$ -        | \$ -        | \$ 2         | \$ 43         | \$ 128          |  |  |
| # Materials            | \$ 368          | \$ -        | \$ -        | \$ -         | \$ -          | \$ 368          |  |  |
| # Overheads - External | \$ 326          | \$ -        | \$ -        | \$ 6         | \$ 108        | \$ 212          |  |  |
| <b>Total</b>           | <b>\$ 1,676</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 26</b> | <b>\$ 515</b> | <b>\$ 1,135</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027             | 2028            | 2029        | 2030        | 2031        |
|------------------------|------------------|-----------------|-----------------|------------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ 560           | \$ 203          | \$ 357          | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 21,371        | \$ 1,337        | \$ 883          | \$ 14,508        | \$ 4,643        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 493           | \$ 120          | \$ 112          | \$ 112           | \$ 148          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 2,454         | \$ 185          | \$ 246          | \$ 1,451         | \$ 572          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 11,600        | \$ 775          | \$ 1,506        | \$ 5,836         | \$ 3,482        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 2,466         | \$ 190          | \$ 255          | \$ 1,447         | \$ 574          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 38,943</b> | <b>\$ 2,811</b> | <b>\$ 3,359</b> | <b>\$ 23,354</b> | <b>\$ 9,418</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## CLCPA Phase 1 - Trans Line - 946 Rebuild

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003541                   | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Rebuild Line 946 on an offset with 1192 ACSR1 and OPGW. The line would be rebuilt with light duty steel poles in a davit arm delta configuration. Angle and dead-end structures employ the use of guy wires. New conductor rating (MVA) is [REDACTED]

#### Project Scope:

Line 946 is a 115 kV line, with an approximate length of 20 miles, connecting the Jennison and East Norwich Substations. The original 4/0 EK Copperweld conductor (limiting element) is supported by 168 wood H-frame structures that were originally built circa 1943. There are sections of 1033 Ortolan ACSR conductor which were upgraded in 1975. The 2020 CLCPA Study found deliverability needs with regards to Line 946. The line also has operational needs due to the fact that Copperweld OH wire is no longer industry standard and has become difficult to source. This project will rebuild Line 946 primarily within the existing ROW through the towns of Bainbridge, Guilford, and Norwich in Chenango County, from the proposed Jennison Substation to the East Norwich Substation. The rebuild of Line 946 will include a connection to the future North Pond Substation in the Town of Guilford. A portion of Line 946 will be redesignated Line 734 after construction of the North Pond Substation is completed as part of a separate wind project by a third-party developer.

#### Project Benefits:

The 115 kV Line 946 rebuild resolves all known asset condition needs inherent to a 78-year-old transmission line. This results in a significant increase in the rating of Line 946 which addresses all deliverability constraints and creates the most headroom for (renewable) generator interconnections. The new rating of this 115 kV line will be [REDACTED] This will be built in accordance with current Avangrid standards and introduces OPGW to the line.

#### Project Risks and Mitigation Plan:

Outage constraints: Line cannot be taken out of service for extended periods because of criticality and lack of sectionalizing.  
Mitigation: Build on an offset.

#### Risk of No Action:

The existing 4/0 EK Copperweld conductor is 78 years old. Copperweld overhead wire is no longer an industry standard and has become difficult to source. If conductor failure occurs, outages could be elongated due to inability to locate the original conductor type and associated hardware. The existing condition analysis indicates a total of 75 structures (44%) need replacement. The 2020 CLCPA Study found deliverability needs with regards to Line 946. The existing LTE Summer rating of Line 946 is [REDACTED]

#### Project Alternatives:

Preferred Option: Rebuild on an offset with 1192 Bunting ACSR

Alternative #1 -Smart Valve & IN Kind Structure Replacements: A 115 kV Smart Valve device will be installed on the 115 kV Line 946 terminal at Jennison. This smart valve is an advanced technology that allows for the curtailment of power flow on Line 946. This resolves the thermal overload on Line 946. Besides addressing the thermal overload condition with the Smart Valve, this alternative would also address all currently known asset condition issues. In-kind structure replacements would be used to mitigate the existing TLDs and structural failures in order to minimize any increased loading on remaining adjacent structures. This alternative assumes that any existing structures (1943 vintage) remain in-service if there are no known asset condition issues. This option would leave the original 78-year-old conductor in service.

Alternative #2 - Reconductor with 477 ACCR: Aluminum Conductor Composite Reinforced (ACCR) wire is a high temperature, low sag conductor. ACCR is a smart technology designed to replace ACSR or ACSS on existing structures at the same tensions and clearances, giving the transmission line up to twice the ampacity. This solution alternative consists of reconductoring Line 946 with higher rated [REDACTED]

[REDACTED] This conductor would address the deliverability need by a margin of 27%. The analysis for this alternative included an assessment of span clearances and structural loading against current NESC code and the Avangrid Heavy Ice load case. In-kind structure replacements would be used to mitigate clearance violations, structural deficiencies, and any known asset condition issues in order to minimize any increased loading on remaining adjacent structures. This alternative assumes that any existing structures (1943 vintage) remain in-service if there are no known asset condition issues.

The cost estimate has been updated to include current design quantities plus current framework values for material costs and construction labor costs. New ROW will be required and based on survey. The cost estimate assumes that clearing is required on half of existing ROW plus the new ROW. Matting assumption is rural with a mix of upland and wetland, 2000 mats required per mile.

[illegible]

## CLCPA Phase 1 - Clarks Corners

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003543                   | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

NYSEG's Clarks Corners Substation is a 345/115 kV station originally built in 2009 with a total of seven (7) "Key Transmission Elements". The 345 kV is configured as a four position ring bus and the 115 kV is configured as six position ring bus. The 345 & 115 kV together interconnect two (2) 345 kV lines, two (2) 345/115 kV power transformers, three (3) 115 kV transmission lines as well as a single 115 kV cap bank. The purpose of the project is to address reliability needs identified as part of the 2018 BES Study, the 2019 Cayuga Generator Deactivation Assessment (GDA), and confirmed in 2021. These results indicate several system weaknesses [REDACTED] were

considered as initiating needs and used as the basis for CLCPA Phase 1 Project development and refinement.

The last main interconnection in the Binghamton Division is the Clarks Corners 345/115 kV substation which connects both the Ithaca and Oneonta divisions with a total of three (3) 115 kV lines out of the Clarks Corners substation; two (2) of which go to the Etna Substation (Ithaca) and one (1) to the Willet Substation (Oneonta). The Oakdale and Westover/Goudey Substations are central to all these key interconnections and [REDACTED]

#### Project Scope:

The scope of the project is to bring the existing Line 945 into and out of the Clarks Corners Substation to resolve the reliability and deliverability needs. This results in two new line positions on the 115 kV and brings the new total of 115 kV key transmission elements to nine (9). As a result of the need to expand the station for these two new line positions, the station's 115 kV yard must be converted to a 4 bay BAAH configuration. The two new positions for the 115 kV Line 945 in-and-out will be terminated into new BAAH positions as well as the two existing power transformers which are currently connected to the future BAAH bus. All lines at the substation will be relocated and terminated into new positions to allow for the conversion to the new BAAH configuration. This solution will also relocate the existing 50 MVar capacitor bank from its current position to a new position of Bus #4.

#### Project Benefits:

The execution of this project will ensure compliance with the requirements of the North American Electric Reliability Corporation (NERC) TPL-001-4 standard, New York State Electric & Gas (NYSEG), Rochester Gas & Electric (RGE) – must conduct both near-term and long-term transmission system planning assessments including steady state, dynamic stability, and short circuit analyses. These studies assess the reliability of the AVANGRID Bulk Electric System (BES) based on the system's ability to satisfy the performance requirements of TPL-001-4 when subjected to a prescribed set of planning events. If the BES is determined to be unable to satisfy the TPL-001-4 performance requirements, a Corrective Action Plan (CAP) must be developed to ensure the continued reliability of the BES.

#### Project Risks and Mitigation Plan:

In the current economic climate supply chains and material lead times are of concern. This poses a risk to the project schedule and cost. Our processes endeavor to mitigate this by purchasing equipment in phases. Certain materials are specified in the initiation and planning phases and the project is designed to match the equipment specified given the overall intent of the scope and electrical requirements. Early procurement is the best strategy.

Specification and procurement of other materials require a more advanced design and present a procurement risk. Standardization of materials and Master Material agreements are in place to streamline the process and use materials as readily available as possible.

Outage coordination risk varies and depends on the time of year and current status of outage metrics. Efforts are made to take outages when best suited to company and division priorities.

An amendment to the existing Article VII Certificate poses a schedule risk. Experienced legal and environmental expertise has been retained.

#### Risk of No Action:

The decision to take no action will result in the scenario [REDACTED]



The Alternative scope considered includes the in-and-out of 115 kV Line 945 to resolve the reliability and deliverability needs identified in Section 5.2.2 and 5.2.3. This requires a total of two new line positions on the 115 kV which would bring the new total of 115 kV key transmission elements to seven (7). As a result of the need to expand the station for these two (2) new positions, the station's 115 kV yard must be converted to a 4 bay BAAH configuration. The two new positions for 115 kV Line 945 in-and-out will be terminated into new BAAH positions as well as the two existing power transformers which are currently connected to the future BAAH bus. All lines at the substation with be relocated and terminated into new positions to allow for the conversion to the new BAAH configuration. This alternative also relocated the existing 50 MVar capacitor bank from its current position to a new position on Bus #4. This alternative was dismissed as it required additional scope and an additional substation expansion of 75 feet.

There is currently no reliability or deliverability need to relocate the existing 115 kV cap bank to the Bus #4 and this relocation only will add cost and complexity to the project. The 115 kV AIS equipment will be rated [REDACTED]

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023            | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 143          | \$ -        | \$ -        | \$ -        | \$ 20           | \$ 123          |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |  |  |
| # External Services    | \$ 1,261        | \$ -        | \$ -        | \$ -        | \$ 249          | \$ 1,011        |  |  |
| # Internal - Non-AC    | \$ 0            | \$ -        | \$ -        | \$ -        | \$ 0            | \$ 0            |  |  |
| # Internal, Labor      | \$ 226          | \$ -        | \$ -        | \$ -        | \$ 127          | \$ 98           |  |  |
| # Internal, Overheads  | \$ 485          | \$ -        | \$ -        | \$ -        | \$ 110          | \$ 374          |  |  |
| # Materials            | \$ 1,552        | \$ -        | \$ -        | \$ -        | \$ 383          | \$ 1,168        |  |  |
| # Overheads - External | \$ 730          | \$ -        | \$ -        | \$ -        | \$ 216          | \$ 514          |  |  |
| <b>Total</b>           | <b>\$ 4,396</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,106</b> | <b>\$ 3,289</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total            | 2025             | 2026             | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|------------------|------------------|------------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 901           | \$ 477           | \$ 424           | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -             | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 26,398        | \$ 6,519         | \$ 12,811        | \$ 7,069        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -             | \$ -             | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 552           | \$ 202           | \$ 182           | \$ 168          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 2,573         | \$ 797           | \$ 1,298         | \$ 478          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 5,096         | \$ 3,096         | \$ 1,999         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 2,642         | \$ 763           | \$ 1,354         | \$ 525          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 38,162</b> | <b>\$ 11,854</b> | <b>\$ 18,068</b> | <b>\$ 8,239</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## CLCPA Phase 1 - Trans Line - 982 Rebuild

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003545                   | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

In 2018 Transmission Planning performed a comprehensive NERC TPL assessment. The 2020 CLCPA Study found deliverability needs with regards to Line 982. The existing LTE Summer rating of Line 982 is [REDACTED]

[REDACTED] CLCPA found asset condition needs on Line 982.

#### Project Scope:

Rebuild the existing 21-mile 115 kV line with 1192 Bunting ACSR conductor on the existing centerline with light duty steel monopole structures.

#### Project Benefits:

To comply with the requirements of the North American Electric Reliability Corporation (NERC) TPL-001-4 standard, New York State Electric & Gas (NYSEG) must conduct both near-term and long-term transmission system planning assessments including steady state, dynamic stability, and short circuit analyses. These studies assess the reliability of the AVANGRID Bulk Electric System (BES) based the system's ability to satisfy the performance requirements of TPL-001-4 when subjected to a prescribed set of planning events. If the BES is determined to be unable to satisfy the TPL-001-4 performance requirements, a Corrective Action Plan (CAP) must be developed to ensure the continued reliability of the BES.

#### Project Risks and Mitigation Plan:

Failure to meet an Outage milestone - Risk of contractor missing an Outage milestone previously agreed with the System Operator, causing delays to the Project and extra cost due to the need of rescheduling. Ensure constant communication with the contractor. Make sure all risks are accounted for.

Outage cancellation by System Operator - Risk of System Operator cancelling an Outage milestone previously agreed, causing the needs for rescheduling or rearranging the construction sequence. Cost and schedule impacts caused by needs of de-mobilizing contractors, relocating construction crews, storing equipment, etc. Proper communication with ECC

Additional scope added to the project - Risk that additional scope is added late in the project that results in major unforeseen costs and schedule adjustments impacting the overall project spend or completion date. This could be due to additional engineering needs, additional resources required, or additional equipment required to complete the project. Obtain all approvals from stakeholders for the project scope. Prevent scope creep - while allowing common sense compromises to allow for a smooth transition.

Poor construction sequence plan - Risk of having a poor construction sequence plan and having the need to make adjustments during construction, resulting in schedule adjustments, potential delays, impacts on the outage schedule, and increases to the project budget. Have a well defined scope of work and detailed design to drive the construction sequence.

#### Risk of No Action:

Potential increase of more outages to the customers due to older assets/equipment. Also, it will increase maintainence and operation costs if the line is not upgraded.

#### Project Alternatives:

Alternative 1: Reconductor the line with 795 Drake ACSR and one OPGW on the existing wood H-Frame structures. Address all known asset condition issues.

Satisfies and exceeds original deliverability needs by a margin of 31%. The reconductoring with 795 Drake ACSR results in 134 (85%) structures needing replacement. This alternative was dismissed as a non-viable option because this alternative requires significant modification without meeting Avangrid standards and leaves 91-year-old assets in service.

Alternative 2: Reconductor the line with 477 Hawk ACCR and one OPGW on the existing wood H-Frame structures. Address all known asset condition issues.

Satisfies and exceeds original deliverability needs by a margin of 32%. The reconductoring with 477 Hawk ACCR results in 126 (80%) structures needing replacement. This alternative was dismissed as a non-viable option because this alternative requires significant modification without meeting Avangrid standards and leaves 91-year-old assets in service.

Alternative 3 (Selected): Rebuild Line 982 on the existing centerline with 1192 ACSR1 and OPGW. The line would be rebuilt with light duty steel poles in a davit arm delta configuration. Angle and deadend structures employ the use of guy wires. New conductor rating (MVA) is [REDACTED] Cost \$88.2M (+50/-25%). Satisfies and exceeds original deliverability needs by a margin of 45%. Addresses all aging infrastructure and line will be built in accordance with Avangrid standards. OPGW provides an enhanced future communication path for protection and control system upgrades. Alternative 3 yields the longest lasting solution; steel poles have a longer lifespan than wood poles.

#### Basis for Project Estimates

Utilize estimating tools as well as historical data to choose the selected alternative approximately at \$88.2M

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020        | 2021        | 2022          | 2023            | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|---------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 160          | \$ -        | \$ -        | \$ 1          | \$ 33           | \$ 127          |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -            |  |  |
| # External Services    | \$ 1,705        | \$ -        | \$ -        | \$ 86         | \$ 625          | \$ 995          |  |  |
| # Internal - Non-AC    | \$ 290          | \$ -        | \$ -        | \$ -          | \$ 136          | \$ 155          |  |  |
| # Internal, Labor      | \$ 176          | \$ -        | \$ -        | \$ 22         | \$ 50           | \$ 105          |  |  |
| # Internal, Overheads  | \$ 277          | \$ -        | \$ -        | \$ 13         | \$ 92           | \$ 172          |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -            |  |  |
| # Overheads - External | \$ 520          | \$ -        | \$ -        | \$ 25         | \$ 206          | \$ 289          |  |  |
| <b>Total</b>           | <b>\$ 3,130</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 146</b> | <b>\$ 1,142</b> | <b>\$ 1,842</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027             | 2028             | 2029             | 2030          | 2031        |
|------------------------|------------------|-----------------|-----------------|------------------|------------------|------------------|---------------|-------------|
| # AFUDC                | \$ 648           | \$ 205          | \$ 443          | \$ -             | \$ -             | \$ -             | \$ -          | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -          | \$ -        |
| # External Services    | \$ 47,927        | \$ 583          | \$ 2,442        | \$ 13,827        | \$ 18,920        | \$ 11,875        | \$ 280        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -          | \$ -        |
| # Internal, Labor      | \$ 338           | \$ 102          | \$ 45           | \$ 67            | \$ 69            | \$ 38            | \$ 15         | \$ -        |
| # Internal, Overheads  | \$ 3,711         | \$ 53           | \$ 600          | \$ 1,151         | \$ 1,169         | \$ 718           | \$ 20         | \$ -        |
| # Materials            | \$ 6,523         | \$ -            | \$ 3,683        | \$ 2,839         | \$ -             | \$ -             | \$ -          | \$ -        |
| # Overheads - External | \$ 3,809         | \$ 71           | \$ 570          | \$ 1,168         | \$ 1,224         | \$ 752           | \$ 23         | \$ -        |
| <b>Total</b>           | <b>\$ 62,954</b> | <b>\$ 1,015</b> | <b>\$ 7,784</b> | <b>\$ 19,052</b> | <b>\$ 21,383</b> | <b>\$ 13,382</b> | <b>\$ 338</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## CLCPA Phase 1 - Oakdale Westover Solution

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                           |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002299                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

substation was originally built in 1961, is designated as a [REDACTED] and serves to interconnect the western (NYSEG Watercure), northern (NYSEG Clarks Corners & NGRID Lafayette), and southern (NYSEG Fraser) portions of New York's BES. The 345 kV yard is configured in a 5-breaker ring-bus but is laid out to be an expandable and more robust breaker-and-a-half design. The 230 kV yard consists of a single 230/115 kV transformer connection to 230 kV Line 71, which interconnects to Watercure Road Substation. The 34.5 kV lines and transformers are connected through dedicated circuit breakers. The largest hub for the Binghamton area's 34.5 kV network is located at the Goudey/Westover 115/34.5/4.8 kV Substation and its main 115 kV source is from Oakdale's Line 939. The Goudey/Westover Station is a straight bus design and was originally built in 1950. This substation has 4-115 kV line interconnections, 3-115/34.5 kV transformers, 12-34.5 kV line interconnections, and 2-34.5/4.8 kV distribution transformers fed from individual buses. All lines and transformers ( $\geq 34.5$  kV) are connected through dedicated circuit breakers.

#### Asset Condition Needs (Oakdale):

Fourteen (14) out of thirty-one (31) breakers at the station require replacement.

The B1 transformer is a fixed tap (i.e. non-load-tap-changing) transformer and shows exterior signs of corrosion and weeping.

The 345/115/34.5 kV (Bank 3) transformer is a 51-year-old Westinghouse Shell Form design which has historical industry issues and should be replaced.

The 115 kV yard showed significant signs of corrosion on some of its legacy 115 kV steel structures and many foundations showed significant signs of spalling and deformation. All the 115 kV dead-end and lattice structure utilize hooked anchor bolts which have very limited pullout capacity.

#### Asset Condition Needs (Goudey/Westover):

NYSEG's 2021 Circuit Breaker Assessment found that twenty (20) circuit breakers at the station require replacement.

The Bank 3 transformer consists of two 34.5/4.8 kV 5 MVA transformers operated in parallel and one is currently assessed to be in poor condition. Both bank 3 transformers should be replaced.

All dead-end structures utilize deficient hooked anchor bolts known in the industry to have limited pullout strength in addition to signs of corrosion on the yard structures.

The entire yard (all voltage levels) are within the FEMA 100-year flood zone.

#### Project Scope:

Retire Goudey/Westover 115 kV substation. Move all 115 kV lines currently at Goudey/Westover to Oakdale. As a result of the additional lines, spatial and outage restrictions at the site, Oakdale 115 kV facility must be expanded to a 6-bay AIS breaker-and-a-half (5 Full Bays + 1Partial). The 345 kV 5-breaker ring bus at Oakdale will be converted to a 3-bay BAAH and an 345/115/34.5 kV transformer will be added. New medium voltage GIS for 34.5 at Oakdale and 15kV GIS. The existing four (4) 4.8 kV circuits at Goudey/Westover will be converted to 34.5/12.5 kV and New Westover 34.5kV and 12.5kV substation will be built with 34.515 kV MV GIS outside of the flood zone.

L940 Reroute 1.96

L961 Reroute 1.96 and rebuilt complete line (part of Star team project)

L939 rename to L952 and reroute 0.14 mi

L938 Reroute 0.23 mi

L919 rename to L756 and reroute 0.16 mi

L944 reroute 0.11 mi

L943 reroute 0.1 mi

230 kV: L071 reroute 0.13 mi

**Project Benefits:****Reliability Needs:**

Deliverability Needs: Before new Oakdale is in service: Under shoulder load and high solar or wind output conditions, the 345 kV corridor (Watercure-Oakdale-Clarks Corners-Fraser) is exposed to significant west-east "flow-through" conditions on Binghamton area facilities under normal conditions (N-0) from the high western renewable power production.

**Distribution Needs:**

Wilson and Lourdes hospitals do not have full backup supply. The Fuller Hollow and Rano distribution feeds a significant amount of commercial load (i.e. Town Square Mall and Vestal Campus Plaza) but both substation transformers are only single 12.5KV banks with no N-1 capability. The total load at the Jarvis substation (2 banks) has exceeded the nameplate rating of a single transformer. Converting the Goudey circuits to 12.5 kV will allow NYSEG to extend backup 12.5 kV to both the hospitals, to create backup ties to Fuller Hollow and Rano substations, and to transfer enough load from Jarvis in order to re-establish N-1 at the Jarvis substation.

**Project Risks and Mitigation Plan:**

Risk 1 - Easement acquisition and crossing agreements: Continued difficulty in voluntarily engaging landowner cooperation on most critical and most-required easement region.

Mitigation: Continued efforts between Avangrid ELM and Legal teams to contact landowner attorney. Legal escalation plan in place in case of continued non-cooperation.

Risk 2 - Complex Construction and Outage Sequence: Transitioning and rerouting all Oakdale-Westover 115kV (and below) lines to the new Commerce rd. (Westover) substation and New Oakdale 115kV yard is challenging, with the goal of minimizing risk and maximizing continuity of service.

Mitigation: The new Oakdale 115kV yard will be built adjacent to the existing one. It will be constructed almost entirely without service interruptions before transitioning from the old yard to the new one.

Additional focus will be placed on engineering for cutover packages. Schedules will be synchronized with all projects occurring simultaneously that are directly or indirectly related to the Oak solution project.

Risk 3 - Long-lead material procurements: In-service date highly dependent on material lead-times provided by power transformer, GIS, circuit-breaker, and control house vendors, currently reserving up to 4 years in advance. Susceptible to changes in global supply chain environment.

Mitigation: Maintaining ongoing, open dialogue with vendors for material forecasting. Started orders for most major equipment, earlier than usual in project life cycle.

**Risk of No Action:****Project Alternatives:**

Alternative 2: Alternative 2 consisted of the full rebuild of the Goudey/Westover Substation across the river in a parcel currently owned by NYSEG. Due to space constraints, this rebuild of the 115 kV facilities would require a compact 115 and 34.5 kV GIS design. In addition to the rebuild of the Goudey/Westover Substation, the Line 939 must be rebuilt to alleviate reliability issues. Lastly the Oakdale substation requires the expansion of the existing 345 kV yard to a BAAH, the addition of a new 345/115/34.5 kV transformer and replacement of the two existing 345/115/34.5 kV power transformers. This alternative is not feasible due to space constraints, flooding risks and construction complexity.

**Basis for Project Estimates**

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020        | 2021        | 2022        | 2023             | 2024             |  |  |
|------------------------|------------------|-------------|-------------|-------------|------------------|------------------|--|--|
| # AFUDC                | \$ 2,604         | \$ -        | \$ -        | \$ -        | \$ 205           | \$ 2,399         |  |  |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             |  |  |
| # External Services    | \$ 7,296         | \$ -        | \$ -        | \$ -        | \$ 3,855         | \$ 3,441         |  |  |
| # Internal - Non-AC    | \$ 899           | \$ -        | \$ -        | \$ -        | \$ 225           | \$ 674           |  |  |
| # Internal, Labor      | \$ 150           | \$ -        | \$ -        | \$ -        | \$ 27            | \$ 123           |  |  |
| # Internal, Overheads  | \$ 3,257         | \$ -        | \$ -        | \$ -        | \$ 2,088         | \$ 1,169         |  |  |
| # Materials            | \$ 12,941        | \$ -        | \$ -        | \$ -        | \$ 9,786         | \$ 3,155         |  |  |
| # Overheads - External | \$ 4,992         | \$ -        | \$ -        | \$ -        | \$ 3,380         | \$ 1,612         |  |  |
| <b>Total</b>           | <b>\$ 32,139</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 19,567</b> | <b>\$ 12,573</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030            | 2031          |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|-----------------|---------------|
| # AFUDC                | \$ 9,293          | \$ 6,993         | \$ 2,300         | \$ -             | \$ -             | \$ -             | \$ -            | \$ -          |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -            | \$ -          |
| # External Services    | \$ 175,189        | \$ 35,956        | \$ 35,268        | \$ 45,627        | \$ 39,576        | \$ 17,450        | \$ 1,224        | \$ 88         |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -            | \$ -          |
| # Internal, Labor      | \$ 15,134         | \$ -             | \$ 3,834         | \$ 4,959         | \$ 4,302         | \$ 1,897         | \$ 133          | \$ 10         |
| # Internal, Overheads  | \$ 22,891         | \$ 4,100         | \$ 5,803         | \$ 5,920         | \$ 4,815         | \$ 2,080         | \$ 159          | \$ 14         |
| # Materials            | \$ 105,987        | \$ 15,183        | \$ 23,001        | \$ 29,756        | \$ 25,811        | \$ 11,380        | \$ 798          | \$ 57         |
| # Overheads - External | \$ 24,729         | \$ 3,742         | \$ 6,482         | \$ 6,612         | \$ 5,377         | \$ 2,324         | \$ 177          | \$ 15         |
| <b>Total</b>           | <b>\$ 353,222</b> | <b>\$ 65,973</b> | <b>\$ 76,688</b> | <b>\$ 92,874</b> | <b>\$ 79,881</b> | <b>\$ 35,130</b> | <b>\$ 2,491</b> | <b>\$ 184</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## CLCPA Phase 1 - Trans Line - 945 Reroute

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                          |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-004824                   | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H1 2026 |

#### Project description:

NYSEG's Clarks Corners Substation is a 345/115 kV station originally built in 2009 with a total of seven (7) "Key Transmission Elements". The 345 kV is configured as a four position ring bus and the 115 kV is configured as six position ring bus. The 345 & 115 kV together interconnect two (2) 345 kV lines, two (2) 345/115 kV power transformers, three (3) 115 kV transmission lines as well as a single 115 kV cap bank. The purpose of the project is to address reliability needs identified as part of the 2018 BES Study and the 2019 Cayuga Generator Deactivation Assessment (GDA). [REDACTED]

[REDACTED] were considered as initiating needs and used as the basis for CLCPA Phase 1 Project development and refinement.

#### Project Scope:

The scope of work for this project is to bring the existing Line 945 into and out of the Clarks Corners Substation to resolve the reliability and deliverability needs identified in Section 5.2.2 and 5.2.3 of the Clarks Corners preliminary Protection and Control SPR. This results in two new line positions on the 115 kV and brings the new total 115 kV key transmission elements to five (5). As a result of the need to expand the station for these two new line positions, (L945E and L945W), the station's 115 kV yard must be converted to a 4 bay BAAH (breaker-and-a-half) configuration. The two new positions for the 115 kV Line 945 in-and-out will be terminated into new BAAH positions as well as the two existing power transformers which are currently connected to the future BAAH bus. All lines at the substation will be relocated and terminated into new positions to allow the conversion to the new BAAH configuration. This includes line work for L715, L716, L945, and L947 and the remote ends for each respective line. 50 MVAR capacitor bank will stay at its current location.

#### Project Benefits:

The last main interconnection in the Binghamton Division is the Clarks Corners 345/115 kV substation which connects both the Ithaca and Binghamton divisions with a total of three (3) 115 kV lines out of the Clarks Corners substation; two (2) of which go to the Etna Substation (Ithaca) and one (1) to the Willet Substation (Binghamton). [REDACTED]

#### Project Risks and Mitigation Plan:

Outage constraints: Line cannot be taken out of service for extended periods because of criticality and lack of sectionalizing.  
Mitigation: Early communication with ECC on construction sequencing plan and temporary means of energization.

#### Risk of No Action:

The last main interconnection in the Binghamton Division is the Clarks Corners 345/115 kV substation which connects both the Ithaca and Oneonta divisions with a total of three (3) 115 kV lines out of the Clarks Corners substation; two (2) of which go to the Etna Substation (Ithaca) and one (1) to the Willet Substation (Oneonta). [REDACTED]

#### Project Alternatives:

Alternative 1 (115 kV BAAH Expansion/Conversion and Cap Bank Relocation). Scope includes, (1) 2 Bay 115 kV Expansion to the north. (2) Two (2) new power transformer positions. (3) 115 kV Cap Bank relocation. Alternative dismissed due to complexity and added space requirements.  
Selected Solution 2 (115 kV BAAH Expansion / Conversion. (1) 2 Bay 115 kV Expansion to the north. (2) Two (2) new power transformer positions.

#### Basis for Project Estimates

CLCPA phase I 945 Reroute was approved on June 10, 2022 to Convert current 115 kV 6-breaker ring-bus to 4-bay BAAH configuration. Reroute Line 945 in-and-out of Clarks Corners Substation for an estimated total of \$46.2Million. The Substation portion of this has been split out to UH-N0006403 for CLCPA Phase I Clarks Corners Substation.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 14         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 14         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 257        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 257        |  |  |
| # Internal - Non-AC    | \$ 0          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0          |  |  |
| # Internal, Labor      | \$ 128        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 128        |  |  |
| # Internal, Overheads  | \$ 56         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 56         |  |  |
| # Materials            | \$ 0          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0          |  |  |
| # Overheads - External | \$ 114        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 114        |  |  |
| <b>Total</b>           | <b>\$ 569</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 569</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027         | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|--------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 279          | \$ 62           | \$ 217          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 6,157        | \$ 220          | \$ 5,937        | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 393          | \$ 68           | \$ 315          | \$ 9         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 653          | \$ 116          | \$ 536          | \$ 1         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,041        | \$ 966          | \$ 75           | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 738          | \$ 111          | \$ 625          | \$ 2         | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 9,261</b> | <b>\$ 1,543</b> | <b>\$ 7,706</b> | <b>\$ 12</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## Robinson Road 230/115/34.5 kV Substation Upgrades

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                          |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002303                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

Robinson Road and Hinman Road substations are approximately 1 mile apart separated by the Erie Canal. Robinson Road 230/115/34.5 kV substation and interconnects a total of 4 key transmission elements. The 230 kV portion of the station is configured as a ring bus with three elements, one 300 MVA 230/115/34.5 kV transformer and two 230kV lines. The 115 kV portion of the station is configured in as a straight bus design with only one 115 kV line. The 34.5 kV is also configured as a straight bus configuration with two transmission lines and a single grounding transformer as a result of the 84 MVA 34.5 kV tertiary delta connection.

Hinman Road 115 kV/34.5 kV substation constructed in 1948. The 115 kV portion of the station is configured as an undesirable straight bus design with four key transmission elements consisting of two 50 MVA 115/34.5 kV power transformers and two 115 kV lines. The 34.5 kV is configured in a straight/transfer bus configuration with five sub-transmission lines. The Hinman currently carries a majority of load from the Lockport Area 34.5 kV sub-transmission system.

Asset Condition issues at this station Hinman Road:

All 115 kV and 34.5 kV breakers are in poor condition.

Both transformers (Bank #3 & Bank #4) are fixed tap (i.e. non-load-tap-changing) transformers, show exterior signs of corrosion

Bank #3 transformer is approaching the end of their useful life.

Two of the 115 kV single phase bus supports are severely tilted potentially due to settlement or heave and should be replaced to address this safety issue.

The Control house is in poor condition with corrosion evident on the exterior of the building and contains very limited space.

The control house also contains many obsolete electro-mechanical type relays which are unsupported by the manufacturer.

The station is physically configured as a straight bus and is not expandable to a BAAH.

Robinson Road : There are currently two (2) 230 kV, one (1) 115 kV breakers are in poor condition.

#### Project Scope:

Demolish Hinman Road Substation. Install a new 115 kV 4 Bay BAAH AIS at Robinson Road. Relocate Lines 908 and NG100 from Hinman Road to Robinson Road Substation. This alternatives includes the addition of a new 300 MVA 230/115/34.5 kV power transformer, the addition of three (3) new 50 MVA 115/34.5 kV power transformers as well a new 34.5 kV MV GIS straight bus with three bus sections and two tie breakers. This alternative also includes new 115 and 34.5 kV control buildings. Expand the Robinson Rd 115 kV to 4 Bay BAAH

Add a 4th breaker on the Robinson 230 kV bus to make it a 4-breaker ring bus.

Install a 2nd 230/115/34.5 kV transformer at Robinson Rd

Bring all 34.5 kV lines at Hinman Rd into Robinson Rd

Demolish the Hinman 34.5 kV bus and transformers.

Install 34.5 kV GIS at Robinson Rd

Install three 115kV/34.5 transformers at Robinson Rd

Install New control House.

#### Project Benefits:

Selected Solution the new BAAH Rebuild of Robinson Road will aid in the mitigation of initiating reliability needs. Resolves all reliability, deliverability

The site allows room for future expansion. Utilizes Avangrid standard equipment. Lower cost alternative. The new BAAH Rebuild of Robinson Road will aid in the mitigation of initiating reliability needs.

**Project Risks and Mitigation Plan:**

Risk 1 - Material procurement with long lead times. Suppliers of power transformers, GIS, circuit breakers and control houses are currently taking 4 years to deliver material, susceptible to changes in the global supply chain environment.

Mitigation: All long-lead major equipment can be promptly ordered upon project re activation, and after taking another look at the project technical solution.

Risk 2 - An SF6-free solution would be needed, which would require a long material procurement lead time and a cost 50% higher than the originally planned SF6 GIS.

Mitigation: Project still needs to undergo Transmission Planning finalization of scope and full technical approval - in these stages, the needs for a GIS SF6-Free will be re-evaluated alongside other possible alternatives.

Risk 3 - Coordination with Third-party Transmission utility at Remote-End interconnection points: This substation is a Remote-end of a 115kV line owned by a third-party utility. Commissioning with new substation will require coordination across utilities and work done external utility team at their site.

Mitigation: Contract external utility under Construction Reimbursement Agreement (CRA) to perform required works for Robinson Road substation compatibility with existing Remote-end stations.

-Projects group has recorded all prior lessons-learned from similar interconnection projects done with the help of external utility companies.

-Monthly, ongoing sync meeting with said external utility on all project interconnections. Good communication will be maintained throughout engineering, construction, and forecasting outages/worker utilization.

**Risk of No Action:**

Reliability Needs

Hinman Road Substation: Currently there are no circuit breakers which can isolate a fault on 115 kV Line NG100 without also tripping the two 115/34.5 kV transformers at Hinman Road.

**Project Alternatives:**

Rebuild 115 kV Lines 908, 907 and NG100. Completely rebuild Hinman Road Substation as a 3-bay 115 kV GIS BAAH, two (2) new 50 MVA 115/34.5 kV power transformers and the full rebuild of the existing 34.5 kV with MV GIS switchgear due to asset condition and site constraints. Higher cost alternative. This alternative was dismissed because of its complexity, and additional space requirements.

**Basis for Project Estimates**

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025        | 2026        | 2027             | 2028             | 2029             | 2030             | 2031        |
|------------------------|-------------------|-------------|-------------|------------------|------------------|------------------|------------------|-------------|
| # AFUDC                | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 77,199         | \$ -        | \$ -        | \$ 8,809         | \$ 15,419        | \$ 31,760        | \$ 21,211        | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ 8,391          | \$ -        | \$ -        | \$ 957           | \$ 1,676         | \$ 3,452         | \$ 2,306         | \$ -        |
| # Internal, Overheads  | \$ 10,310         | \$ -        | \$ -        | \$ 1,233         | \$ 2,024         | \$ 4,085         | \$ 2,968         | \$ -        |
| # Materials            | \$ 50,347         | \$ -        | \$ -        | \$ 5,745         | \$ 10,056        | \$ 20,713        | \$ 13,833        | \$ -        |
| # Overheads - External | \$ 11,495         | \$ -        | \$ -        | \$ 1,375         | \$ 2,256         | \$ 4,555         | \$ 3,309         | \$ -        |
| <b>Total</b>           | <b>\$ 157,741</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 18,119</b> | <b>\$ 31,430</b> | <b>\$ 64,565</b> | <b>\$ 43,626</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Stolle Road 345/230/115/34.5 kV Substation Upgrades

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                          |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002304                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

Stolle Road 345/230/115/34.5 kV substation. The 345 & 230 kV portions of the station are both configured as undesirable straight bus configurations with three (3) 345 kV elements and three (3) 230 kV elements. The existing 345/115 kV transformation utilizes two (2) 280 MVA three phase transformers in a single position operated in parallel. The 115 kV portion of the station is configured as a partial BAAH configuration with three lines having a single line breaker and two (2) 115/34.5 kV transformers connected directly to the 115 kV BAAH buses with no circuit breakers. The 115 kV interconnects a total of seven 115 kV elements with this existing topology. The 230 kV at the station is completely isolated from the other voltage levels and interconnects three (3) 230 kV lines. The 34.5 kV is also configured in an undesirable straight/transfer bus configuration with two (2) transmission lines and two (2) 25 MVA 115/34.5 kV transformers.

#### Asset Condition:

- Obsolete oil circuit breakers are in poor condition with some installed in 1960s (~60 years old)
- The existing 115/34.5 kV transformers both are three phase 30 MVA units (71 years old).
- The foundations in the 115 kV yard are in poor condition need replacement.
- The steel lattice 115 kV termination structures are showing signs of corrosion.
- The 115/34.5 kV control house is overcrowded, and relays are obsolete electro-mechanical.
- Existing strain bus insulators are brown glass and are approaching the end of their useful life

#### Project Scope:

Alternative 1 consists of a 345 kV 3-breaker expandable ring bus, a partial rebuild of the 115 kV elements to a 4 bay BAAH AIS, a new 34.5 kV GIS straight bus with a tie breaker, one new 345/115 448 MVA transformer, one new 345/230 448 MVA transformer and two (2) 37 MVA 115/34.5 kV transformers.

- Install 2x345kV New Circuit breakers to complete 345 kV 3-breaker expandable ring bus.
- Install new 345/230/34.5 kV -448 MVA Power Transformer
- Install 1x 230kV Circuit Breaker.
- Install 345/115/34.5 kV 448 MVA Power Transformer
- Expand the 115 kV bus to be a 4-baybreaker-and-a-half configuration.
- Install new 11x115 kV Circuit Breakers
- Install two New BANK #1 2x115/34.5kV 37.3MVA Distribution transformer.
- Install new 34.5kV 2x straight Bus configuration GIS.
- Install New Control House
- Install New GIS Building

#### Project Benefits:

This project will address the reliability and assets condition issues described here.

Minimal transmission line relocations. Easiest alternative to construct; fastest delivery timeline.

Allows for additional expansion and headroom

**Project Risks and Mitigation Plan:**

Risk 1 - Material procurement with long lead times Suppliers of power transformers, GIS, circuit breakers and control houses are currently taking 4 years to deliver material, susceptible to changes in the global supply chain environment.

Mitigation: All long-lead major equipment can be promptly ordered upon project re activation, and after taking another look at the project technical solution.

Risk 2 - An SF6-free solution would be needed, which will require a long material procurement lead time and a cost 50% higher than the originally planned SF6 GIS.

Mitigation: Project still needs to undergo Transmission Planning finalization of scope and full technical approval - in these stages, the needs for a GIS SF6-free will be re-evaluated alongside other possible alternatives.

Risk 3 - Complex Construction and Outage Sequence: Outages for 345kV and 230kV lines could be required. Transitioning and rerouting all existing 115kV (and below) lines to the new yard is challenging, with the goal of minimizing risk and maximizing continuity of service.

Mitigation: The new Stolle Road 115kV yard will be built adjacent to the existing one. It will be constructed almost entirely without service interruptions before transitioning from the old yard to the new one.

Additional focus will be placed on engineering for cutover packages. Schedules will be synchronized with all projects occurring simultaneously that are directly or indirectly related to the Stolle Road solution project.

**Risk of No Action:**

Reliability Needs:

[REDACTED]

**Project Alternatives:**

Alternative 2: 345 kV AIS 3-breaker ring bus, a full rebuild of the 115 kV elements to the south of the existing yard, a new 34.5 kV MV GIS straight bus with a tie breaker, one new 345/115 448 MVA transformers, one new 345/230 448 MVA transformer and two new 37 MVA Higher cost alternative. Requires substation yard expansion of 400' x 400'.

**Basis for Project Estimates**

- AC Cost Estimate: Outcome from historical cost data using Avangrid's in house estimating tool. Whenever possible, actual purchase orders and competitive bid results are incorporated to add more accuracy.
- Non-AC Forecast Estimates: Outcome through a Primavera interface, utilizing recent actual overhead costs to ensure reliable projections.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025        | 2026        | 2027             | 2028             | 2029             | 2030             | 2031        |
|------------------------|-------------------|-------------|-------------|------------------|------------------|------------------|------------------|-------------|
| # AFUDC                | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 60,685         | \$ -        | \$ -        | \$ 15,171        | \$ 15,171        | \$ 15,171        | \$ 15,171        | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ -              | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Overheads  | \$ 7,446          | \$ -        | \$ -        | \$ 1,931         | \$ 1,810         | \$ 1,774         | \$ 1,930         | \$ -        |
| # Materials            | \$ 37,785         | \$ -        | \$ -        | \$ 9,446         | \$ 9,446         | \$ 9,446         | \$ 9,446         | \$ -        |
| # Overheads - External | \$ 7,268          | \$ -        | \$ -        | \$ 1,885         | \$ 1,767         | \$ 1,732         | \$ 1,884         | \$ -        |
| <b>Total</b>           | <b>\$ 113,184</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 28,433</b> | <b>\$ 28,195</b> | <b>\$ 28,124</b> | <b>\$ 28,432</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Coddington 115/34.5 kV Substation Upgrades

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                          |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-002290                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2027            | <b>In-Service Date:</b><br>H1 2030 |

#### Project description:

The Coddington 115kV/34.5kV Substation Upgrades are part of the NY-RIP Phase 1. Phase 1 projects are existing upgrade projects already in AVANGRID's capital plan (driven from Reliability or Asset Condition based needs) plus, in some cases, incremental upgrades in order to achieve an enhanced renewable resource integration benefit. NYSEG's Coddington Substation is a 115/34.5kV station originally built in 1948 with a total of five (5) key transmission elements.

#### Reliability Needs:

- [REDACTED]

#### Asset Condition Needs:

- The Bank #3 transformer currently shows signs of oil weeping/leaking and should be replaced. The existing ground bank was installed in 1973 (49 years old) and was determined to be in Fair to Poor condition.
- A total 41 out of 117 foundations failed the visual inspection; these failures were widespread throughout the 115 kV yard.
- Visual inspection failures on foundations were found on all the 115 kV Line Termination Structures, 50% of the Main Bus structures, and 75% of the low bay structures, all of which are subjected to uplift and have hooked anchors.
- A structural analysis was performed on the 115 kV structures at Coddington. The results showed that the Line Termination structures, and Main bus structures all have anchor bolts that are overstressed (117%) and the Main bus structures having steel members overstressed (123%) under the minimum NESC loading criteria.
- The galvanized protective coating on the dead-end structures at Coddington have reached the end of their service life.
- All dead end and main bus structures at Coddington have overstressed anchors that require mitigation in order to meet the minimum NESC loading criteria.
- The Control house has limited available space for future additions. The control house roof is also made of a combustible material and its current proximity to the existing transformer presents a significant fire hazard that should be mitigated.

#### Project Scope:

The Coddington Substation Upgrades project consists of a complete rebuild of the 115 kV as a BAAH GIS on the existing property.

- Yard expansion and development with fence and grounding
- One (1) 115kV Gas Insulated Switch Gear
- One (1) 115kV Protection and Control Building complete with AC/DC service panels, HVAC, lighting, cable trays, and local control cabinets etc
- Two (2) Battery Banks for A and B Protection
- Two (2) new power 50 MVA 115/34.5kV with LTC, and containment foundations
- Two (2) 115kV disconnects with stand structures and foundations
- One (1) 115 kV capacitor bank (30 MVAR)
- One (1) 34.5 kV capacitor bank (10 MVAR)
- Three (3) 115kV Closed Coupling Voltage Transformers (CCVT)
- Control wiring and cable trench, HV bus work
- Remote End Substation communication and integration
- Termination and underground routing of L981 to east Ithaca
- Termination and underground routing of L998 to east Etna
- Termination and underground routing of L982 to east Montour Falls
- 115kV GIS Terminations
- Terminations to 34kV breakers
- Demolition of 115kV yard

**Project Benefits:**

- Resolves all reliability, deliverability and asset condition needs.
- Lower construction and outage complexity.
- Allows for future expansion of the substation.
- This alternative allows for the most headroom.
- Uses Avangrid standard substation design.

**Project Risks and Mitigation Plan:**

Procurement Process longer than planned:

Risk associated to the Procurement cycle, including the impact of the timescales and potential delays in the pre-tendering, tendering and awarding processes. We intend on awarding an Engineering/Procurement/ Construction contract for the switchgear which should overall reduce the time required to procure each contract.

**Risk of No Action:**

- System voltage collapse.
- Not addressing the underlining reliability needs, will not result in additional system headroom, and will not allow for an increase in renewable penetration.
- Will not aid in the mitigation of initiating reliability needs.

**Project Alternatives:**

Alternative 1: A full rebuild of all 115 kV elements in their existing location with a series breaker addition, a new 115 kV capacitor bank (30 MVar), a new 34.5 kV capacitor bank (10 MVar), two (2) new 50 MVA 115/34.5 kV power transformers.

- Resolves all reliability, deliverability and asset condition needs.
- Higher construction and outage complexity.
- Lower cost alternative.
- Results in significant substation congestion near existing control house.
- This alternative was not selected due to its complexity, physical access concerns, the use of an undesirable straight bus with a series breaker configuration and protection and control issues.

Alternative 2 (Selected): This alternative consists of a complete rebuild of the 115 kV as a BAAH GIS on the existing property, a new 115 kV capacitor bank (30 MVar), a new 34.5 kV capacitor bank (10 MVar), and two (2) new power 50 MVA 115/34.5kV.

- Resolves all reliability, deliverability and asset condition needs.
- Lower construction and outage complexity.
- Allows for future expansion of the substation.
- This alternative allows for the most headroom.
- Uses Avangrid standard substation design.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates within the estimating workbook are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027             | 2028             | 2029             | 2030             | 2031        |
|------------------------|------------------|-------------|-------------|------------------|------------------|------------------|------------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 27,242        | \$ -        | \$ -        | \$ 6,811         | \$ 6,811         | \$ 6,811         | \$ 6,811         | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ -             | \$ -        | \$ -        | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Overheads  | \$ 3,342         | \$ -        | \$ -        | \$ 867           | \$ 813           | \$ 796           | \$ 866           | \$ -        |
| # Materials            | \$ 16,962        | \$ -        | \$ -        | \$ 4,241         | \$ 4,241         | \$ 4,241         | \$ 4,241         | \$ -        |
| # Overheads - External | \$ 3,263         | \$ -        | \$ -        | \$ 846           | \$ 793           | \$ 777           | \$ 846           | \$ -        |
| <b>Total</b>           | <b>\$ 50,809</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 12,764</b> | <b>\$ 12,657</b> | <b>\$ 12,625</b> | <b>\$ 12,763</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Etna 115/34.5/4.8 kV Substation Full Rebuild

### PROJECT INFORMATION

|                                   |                                                    |                                              |                                          |                                    |
|-----------------------------------|----------------------------------------------------|----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003041                   | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP2 Technical       | <b>Start Date:</b><br>H1 2026            | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

The Etna 115kV/34.5/4.8kV Substation full rebuild project is part of the NY-RIP Phase 1. Phase 1 projects are existing upgrade projects already in AVANGRID's capital plan (driven from Reliability or Asset Condition based needs) plus, in some cases, incremental upgrades in order to achieve an enhanced renewable resource integration benefit. Etna is constructed as a 115/34.5/4.8 kV substation built in 1929 and is located within NYSEG's Ithaca Division. The Etna Substation consists of nine (9) "Key Transmission Elements " and serves as a significant 115 kV hub and primary source for Ithaca's 34.5kV sub transmission and distribution systems. The 34.5 kV system serves approximately 65 MW of load under normal (N 0) peak load conditions, and is one of three predominate sources of power into the Ithaca 34.5 kV network (Coddington and Cayuga/Milliken).

#### Reliability Needs:

[REDACTED]

#### Distribution Needs:

- Inadequate field tie capability.

#### Project Scope:

Complete rebuild of the 115 kV elements as a BAAH AIS and complete rebuild of the 34.5 and 4.8 kV with medium voltage GIS in the Southern Location. Install two new 30/40/50(56) MVA 115/34.5 kV transformers, a new 115 kV Large Control/MV Switchgear Building, and a new 10/14 MVA LTC Dual Rated 34.5/4.8x12.47 LTC distribution transformer. Separate two existing distribution circuits into five new 4.8 kV circuits to increase field tie capability.

#### Project Benefits:

- Resolves all reliability, deliverability and asset condition needs.
- Low construction and outage complexity.
- Substation can be built without requiring work around energized equipment.
- Final station layout only requires one substation yard area.

#### Project Risks and Mitigation Plan:

Procurement Process longer than planned:

Risk associated to the Procurement cycle, including the impact of the timescales and potential delays in the pre-tendering, tendering and awarding processes. We intend on awarding an Engineering/Procurement/ Construction contract for the switchgear which should overall reduce the time required to procure each contract.

Additional scope added to the project:

Risk that additional scope is added to the project that results in unforeseen costs and schedule adjustments impacting the overall project spend, completion date, etc. The location of the Etna substation is being reevaluated and may potentially move to the existing Ithaca Service Center location. This would add additional scope to the overall project and will require coordination for the relocation and demolition of the existing service center. The schedule could potentially be impacted due to the activities/ scope that must be completed prior to mobilization. The project team is working closely with planning on this evaluation and will continue to coordinate throughout the project.

#### Risk of No Action:

[REDACTED]

- Not addressing the underlining reliability, deliverability, asset conditions or distribution needs.
- Will not allow additional distribution circuits to offload the current circuits and increase field ite capabilities.

**Project Alternatives:****Alternative 1:**

Complete rebuild of the 115 kV elements as a BAAH AIS. A new large 115 kV control house, two new 30/40/50(56) MVA 115/34.5 kV transformers, two new 34.5 kV overhead connections to the existing 34.5 kV structures, 1 new 34.5 kV bay position for a new 10/14 MVA LTC Dual Rated 34.5/4.8 & 12.47 LTC distribution transformer, the relocation of the 34.5 kV L514 requiring a new breaker and switches, the relocation of the bus #4 PT's and two new station service duct banks to feed the new 115 kV control house.

- Resolves all reliability, deliverability and asset condition needs.
- High construction and outage complexity.
- Final station layout would require two substation yard areas.

**Alternative 2 (Selected):**

Complete rebuild of the 115 kV elements as a BAAH AIS and complete rebuild of the 34.5 and 4.8 kV with medium voltage GIS in the Southern Location. Install two new 30/40/50(56) MVA 115/34.5 kV transformers, a new 115 kV Large Control/MV Switchgear Building, and a new 10/14 MVA LTC Dual Rated 34.5/4.8x12.47 LTC distribution transformer. Separate two existing distribution circuits into five new 4.8 kV circuits to increase field tie capability.

- Resolves all reliability, deliverability and asset condition needs.
- Low construction and outage complexity.
- Substation can be built without requiring work around energized equipment.
- Final station layout only requires one substation yard areas.

**Alternative 3:**

Same scope as Alternative 2 but in the Northern Location.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates within the estimating workbook are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025        | 2026            | 2027             | 2028             | 2029             | 2030             | 2031        |
|------------------------|-------------------|-------------|-----------------|------------------|------------------|------------------|------------------|-------------|
| # AFUDC                | \$ 186            | \$ -        | \$ 186          | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -              | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 57,986         | \$ -        | \$ 2,845        | \$ 10,360        | \$ 23,243        | \$ 12,898        | \$ 8,641         | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ 6,303          | \$ -        | \$ 309          | \$ 1,126         | \$ 2,526         | \$ 1,402         | \$ 939           | \$ -        |
| # Internal, Overheads  | \$ 7,874          | \$ -        | \$ 505          | \$ 1,450         | \$ 3,050         | \$ 1,659         | \$ 1,209         | \$ -        |
| # Materials            | \$ 37,817         | \$ -        | \$ 1,855        | \$ 6,756         | \$ 15,158        | \$ 8,412         | \$ 5,635         | \$ -        |
| # Overheads - External | \$ 8,779          | \$ -        | \$ 563          | \$ 1,617         | \$ 3,401         | \$ 1,850         | \$ 1,348         | \$ -        |
| <b>Total</b>           | <b>\$ 118,944</b> | <b>\$ -</b> | <b>\$ 6,263</b> | <b>\$ 21,309</b> | <b>\$ 47,379</b> | <b>\$ 26,221</b> | <b>\$ 17,772</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## CLCPA - South Owego Upgrades

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005936                   | <b>Charge Code:</b><br>Electric Transmission   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026             | <b>In-Service Date:</b><br>H1 2027 |

#### Project description:

South Owego is an existing 115/34.5 kV substation located in the Binghamton division in the city of Owego. The station was built in 1956 (68 years old). Lines 961 and 962 are being rebuilt on offsets as part of Phase 1 of the New York Climate Leadership & Community Protection Act (CLCPA) Phase 1 Project to address N-1 Thermal Overload conditions. [REDACTED]

A structural analysis of the existing 115kV steel lattice box bay structure was performed using STAAD Pro. It was determined that with no wires attached, 29 failures were already present in the structure. The existing 115kV [REDACTED] The Line 961 and 962 breakers were rated as HI-1 (Very Good) and HI-2 (Good), while the Line 915 breaker was rated as HI-5 (Very Poor). Completion of this project will help to address N-1 thermal violations on the 115kV transmission system.

#### Project Scope:

Install a new terminal position for Line 962, along with a new dedicated 115kV breaker, disconnects, and 1-Phase CCVT at the Southernmost bay of the South Owego 115kV bus structure. Install a new terminal position for Line 961, utilizing the existing Line 962 dedicated 115kV breaker and CCVT, along with new disconnects and jumpers, at the existing Line 962 position on the South Owego 115kV bus structure.

#### Project Benefits:

The substation upgrades will address the 29 structure failures found by STAAD Pro; it will also help to address N-1 thermal violations on the 115kV transmission system. The upgrades will help support projects CLCPA Star East and Star West (Line 961 and 962) and reduces the risk of power outages and damaged equipment, all while updating a portion of the substation to help handle the CLCPA requirements.

#### Project Risks and Mitigation Plan:

Throughout the duration of this project there will be several risks, and the risks and plans will change in every phase of the project.

Our initial risks will be Article VII filing, permits and conceptual design and procurement. Keeping these items on track is crucial to the project, this is currently being accomplished by weekly meetings, periodic discussions as needed, paying attention to lead times and making sure to order equipment in a timely manner based off project schedule and the specific lead time of each piece of major equipment.

The next risk and the biggest risk will be procuring an Engineering and Construction contract/starting construction. This phase requires a lot of moving pieces, strategic planning and out of the box thinking to bring this project in on time and on schedule. The current plan in place to mitigate this work is a schedule that should be updated frequently, and weekly or daily meetings depending on the task and the unforeseen challenges that arise while work is taking place.

The final stage is closeout and energization of substation. Through the entire processes, the substation team and lines teams will be communicating the status of each project and rectifying any issues that may rise during the each phase.

The unknown project risk is weather. During storms or natural disasters, crews/contractors may have to leave the site to address emergency issues in other locations. If this happens during the construction of the South Owego Substation upgrades project, the team will hold meetings with the lines/substation group to discuss how as a group we can get the projects back on track.

#### Risk of No Action:

The substation was built in 1968, there are currently 29 structure failures and a [REDACTED] If no action is taken, equipment failure and outages are imminent. Without these upgrades the station will not support CLCPA Star East and West transmission line replacement. Upgrades to the substation are crucial in order to meet the CLCPA requirements (Climate Leadership and Community Protection Act).

**Project Alternatives:**

Alternate 1: This alternative consists of the installation of a new line position at the spare bay (Southernmost bay) on the existing bus structure. A new A-frame dead-end structure will be constructed in front of the existing spare bay as the termination point for the incoming transmission lines to reduce strain on the existing 115kV box structure. A new 115kV [REDACTED] breaker, along with associated disconnect and a new 1-phase CCVT, will be installed between the new A-frame structure and the existing box structure. Line 962 will be relocated to this new position, followed by the relocation of Line 961 to the existing Line 962 position. This work shall include the construction of a new A-frame structure in front of the existing Line 962 bay, installation of a new 115kV circuit breaker foundation between the new A-frame structure and existing box structure, replacement of the existing Line 962 switches with new disconnects installed on either side of the new breaker foundation, and the replacement of the existing 350KCM CU jumpers for the breakers and disconnect switches to 1590 KCM AAC conductor. The existing Line 962 wave trap shall be retired, whereas the existing CCVT and 115kV [REDACTED] breaker on Line 962 shall be reused for Line 961, with the existing breaker being moved to the new foundation. The existing substation will need to be expanded to accommodate the new installations. This expansion will require grading and a fence extension.

Alternate 2: This alternative consists of the installation of a new line position at the spare bay on the existing 115kV box structure. A new 115kV [REDACTED] breaker will be installed under the existing 115kV box structure, along with associated disconnect switches mounted on the structure, and a new 1-phase CCVT. Line 962 will be relocated to this new position, followed by the relocation of Line 961 to the existing Line 962 position. This work shall include the replacement of the existing Line 962 disconnect switches installed on the existing box structure, and the replacement of the existing 350KCM CU jumpers for the breakers and disconnect switches to 1590 KCM AAC conductor. The existing Line 962 wave trap shall be retired whereas the existing CCVT and 115kV [REDACTED] breaker on Line 962 shall be reused for Line 961.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 141          | \$ -        | \$ 141          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 4,194        | \$ -        | \$ 3,644        | \$ 549        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 160          | \$ -        | \$ 150          | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 462          | \$ -        | \$ 422          | \$ 40         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 655          | \$ -        | \$ 655          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 505          | \$ -        | \$ 462          | \$ 44         | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,117</b> | <b>\$ -</b> | <b>\$ 5,474</b> | <b>\$ 643</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## West Hill SS

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005842                   | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Thermal and voltage violations can occur on NYSEG's transmission system during multiple contingencies near the city of Ithaca.

Additionally, the City of Ithaca has developed a plan to electrify and decarbonize its building and has requested that NYSEG reviews the local electrical grid to ensure it can support the additional load.

The upgrade will include work in the following stations:

- West Hill SS
- Fourth St SS
- Trumansburg SS
- Cayuga SS
- Coddington SS

#### Project Scope:

The scope of the project will include the following work:

Addition of 2 nos 34.5 kV, 4 MVAR Capacitor Banks + Replace 2 line Breakers of 12.kV to increase the PF due to load growth and Maintenance reliability.

#### Project Benefits:

Improve the reliability of the network in the city of Ithaca and ensure the local electrical grid can support the additional load.

#### Project Risks and Mitigation Plan:

The main project risks are:

- Awarding of capacitor bank due to the market situation.

Working internally to expedite the procurement process.

- Execute the project with the minimum outages to avoid customers disturbance.

Anticipate the Detailed Engineering to reduce the execution phases and accomodate the works with the minimum outage impact.

#### Risk of No Action:

The current situation of the network ring in Ithaca city requires an increase of capacity to allow future electrification and reduce contingencies.

#### Project Alternatives:

Other alternatives have been studied to improve the 5 stations like including GIS equipment or expanding the substations.

The proposed solution is the most optimal and requires the lowest busget to improve the Ithaca network grid.

#### Basis for Project Estimates

Estimate based on historical projects:

1. Amenia Substation (similar configuration).
2. Similar transformers being procured in the company.
3. Current framework agreements for different materials and engineering costs.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022         | 2023          | 2024          |  |  |
|------------------------|---------------|-------------|-------------|--------------|---------------|---------------|--|--|
| # AFUDC                | \$ 32         | \$ -        | \$ -        | \$ 0         | \$ 6          | \$ 26         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -         | \$ -          | \$ -          |  |  |
| # External Services    | \$ 343        | \$ -        | \$ -        | \$ 6         | \$ 126        | \$ 211        |  |  |
| # Internal - Non-AC    | \$ 26         | \$ -        | \$ -        | \$ 7         | \$ 19         | \$ 0          |  |  |
| # Internal, Labor      | \$ 25         | \$ -        | \$ -        | \$ 2         | \$ -          | \$ 23         |  |  |
| # Internal, Overheads  | \$ 59         | \$ -        | \$ -        | \$ 2         | \$ 16         | \$ 41         |  |  |
| # Materials            | \$ 47         | \$ -        | \$ -        | \$ -         | \$ -          | \$ 47         |  |  |
| # Overheads - External | \$ 103        | \$ -        | \$ -        | \$ 3         | \$ 35         | \$ 65         |  |  |
| <b>Total</b>           | <b>\$ 636</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 21</b> | <b>\$ 201</b> | <b>\$ 413</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 241          | \$ 68           | \$ 173          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,375        | \$ 884          | \$ 1,491        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 65           | \$ 32           | \$ 32           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 257          | \$ 96           | \$ 160          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 598          | \$ 408          | \$ 191          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 315          | \$ 143          | \$ 171          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,851</b> | <b>\$ 1,632</b> | <b>\$ 2,219</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Trumansburg SS

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005844                   | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Thermal and voltage violations can occur on NYSEG's transmission system during multiple contingencies near the city of Ithaca.

Additionally, the City of Ithaca has developed a plan to electrify and decarbonize its building and has requested that NYSEG reviews the local electrical grid to ensure it can support the additional load.

The upgrade will include work in the following stations:

- West Hill SS
- Fourth St SS
- Trumansburg SS
- Cayuga SS
- Coddinton SS

#### Project Scope:

The scope of the project will include the following work:

- Install 1 new 4 MVar 34.5 kV capacitor bank (needed for transmission reliability).
- Replace both 4.8 kV distribution line breakers (needed for asset condition).

#### Project Benefits:

Improve the reliability of the network in the city of Ithaca and ensure the local electrical grid can support the additional load.

#### Project Risks and Mitigation Plan:

The main project risks are:

- Awarding the capacitor bank due to the market situation.

Working internally to expedite the procurement process.

- Execute the project with the minimum outages to avoid customers disturbance.

Anticipate the Detailed Engineering to reduce the execution phases and accommodate the works with the minimum outage impact.

#### Risk of No Action:

The current situation of the network ring in Ithaca city requires an increase of capacity to allow future electrification and reduce contingencies.

#### Project Alternatives:

Other alternatives have been studied to improve the 5 stations like including GIS equipment or expanding the substations.

The proposed solution is the most optimal and requires the lowest budget to improve the Ithaca network grid.

#### Basis for Project Estimates

Estimate based on historical projects:

1. Amenia Substation (similar configuration).
2. Similar transformers being procured in the company.
3. Current framework agreements for different materials and engineering costs.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022         | 2023         | 2024          |  |  |
|------------------------|---------------|-------------|-------------|--------------|--------------|---------------|--|--|
| # AFUDC                | \$ 16         | \$ -        | \$ -        | \$ 1         | \$ 4         | \$ 12         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -         | \$ -         | \$ -          |  |  |
| # External Services    | \$ 182        | \$ -        | \$ -        | \$ 41        | \$ 20        | \$ 121        |  |  |
| # Internal - Non-AC    | \$ 0          | \$ -        | \$ -        | \$ 0         | \$ 0         | \$ 0          |  |  |
| # Internal, Labor      | \$ 38         | \$ -        | \$ -        | \$ 3         | \$ 1         | \$ 34         |  |  |
| # Internal, Overheads  | \$ 38         | \$ -        | \$ -        | \$ 5         | \$ 2         | \$ 31         |  |  |
| # Materials            | \$ 47         | \$ -        | \$ -        | \$ -         | \$ -         | \$ 47         |  |  |
| # Overheads - External | \$ 65         | \$ -        | \$ -        | \$ 9         | \$ 5         | \$ 52         |  |  |
| <b>Total</b>           | <b>\$ 386</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 58</b> | <b>\$ 31</b> | <b>\$ 297</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 197          | \$ 51         | \$ 146          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,433        | \$ 587        | \$ 1,846        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 84           | \$ 38         | \$ 45           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 255          | \$ 54         | \$ 201          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 400          | \$ 147        | \$ 253          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 302          | \$ 87         | \$ 215          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,671</b> | <b>\$ 964</b> | <b>\$ 2,707</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Cayuga Heights SS

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005845                   | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Thermal and voltage violations can occur on NYSEG's transmission system during multiple contingencies near the city of Ithaca.

Additionally, the City of Ithaca has developed a plan to electrify and decarbonize its building and has requested that NYSEG reviews the local electrical grid to ensure it can support the additional load.

The upgrade will include work in the following stations:

- West Hill SS
- Fourth St SS
- Trumansburg SS
- Cayuga SS
- Coddinton SS

#### Project Scope:

The scope of the project will include the following work:

Addition of a 34.5 kV, 6 MVAR Capacitor Bank to increase the PF due to load growth.

#### Project Benefits:

Improve the reliability of the network in the city of Ithaca and ensure the local electrical grid can support the additional load.

#### Project Risks and Mitigation Plan:

The main project risks are:

- Awarding the capacitor bank due to the market situation.

Working internally to expedite the procurement process.

- Execute the project with the minimum outages to avoid customers disturbance.

Anticipate the Detailed Engineering to reduce the execution phases and accomodate the works with the minimum outage impact.

#### Risk of No Action:

The current situation of the network ring in Ithaca city requires an increase of capacity to allow future electrification and reduce contingencies.

#### Project Alternatives:

Other alternatives have been studied to improve the 5 stations like including GIS equipment or expanding the substations.

The proposed solution is the most optimal and requires the lowest busget to improve the Ithaca network grid.

#### Basis for Project Estimates

Estimate based on historical projects:

1. Amenia Substation (similar configuration).
2. Similar transformers being procured in the company.
3. Current framework agreements for different materials and engineering costs.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022         | 2023          | 2024          |  |  |
|------------------------|---------------|-------------|-------------|--------------|---------------|---------------|--|--|
| # AFUDC                | \$ 22         | \$ -        | \$ -        | \$ 0         | \$ 4          | \$ 18         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -         | \$ -          | \$ -          |  |  |
| # External Services    | \$ 232        | \$ -        | \$ -        | \$ 13        | \$ 97         | \$ 122        |  |  |
| # Internal - Non-AC    | \$ 0          | \$ -        | \$ -        | \$ 0         | \$ 0          | \$ 0          |  |  |
| # Internal, Labor      | \$ 37         | \$ -        | \$ -        | \$ 0         | \$ 3          | \$ 34         |  |  |
| # Internal, Overheads  | \$ 52         | \$ -        | \$ -        | \$ 1         | \$ 11         | \$ 39         |  |  |
| # Materials            | \$ 89         | \$ -        | \$ -        | \$ -         | \$ -          | \$ 89         |  |  |
| # Overheads - External | \$ 88         | \$ -        | \$ -        | \$ 3         | \$ 25         | \$ 61         |  |  |
| <b>Total</b>           | <b>\$ 521</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 18</b> | <b>\$ 139</b> | <b>\$ 364</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 203          | \$ 63           | \$ 141          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,007        | \$ 671          | \$ 1,336        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 51           | \$ 8            | \$ 44           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 206          | \$ 72           | \$ 134          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 471          | \$ 401          | \$ 70           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 248          | \$ 100          | \$ 148          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,187</b> | <b>\$ 1,314</b> | <b>\$ 1,873</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Fourth St SS

### PROJECT INFORMATION

|                                   |                                                    |                                                |                                           |                                    |
|-----------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005847                   | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Electric Clean Energy | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

Thermal and voltage violations can occur on NYSEG's transmission system during multiple contingencies near the city of Ithaca.

Additionally, the City of Ithaca has developed a plan to electrify and decarbonize its buildings and has requested that NYSEG review the local electrical grid to ensure it can support the additional load.

The upgrade will include work in the following stations:

- West Hill SS
- Fourth St SS
- Trumansburg SS
- Cayuga SS
- Coddinton SS

#### Project Scope:

The scope of the project will include the following work:

Add a new control house building, 2 new 34.5/12.5 kV LTC transformers along with new high and low side breakers and disconnect switches.

Convert the existing 8.3kV bus to 12.5 kV bus and extend the new 12.5KV bus.

Add 1 NO 12.5 kV tie breaker and associated disconnect switches.

Replace the existing 8.3kV tie breaker with the associated disconnect switches to new tiebreaker and disconnect switches.

Remove old 8.3 kV banks regulators, and foundations to make space for the new 2nd 34.5/12.5 kV transformer when all 8.3 kV circuits have been converted to 12.5 kV.

Replace the existing 2-line breakers (L545 & L527) to new 1200A breakers.

Install 1 new set (3-phase) of 34.5kV Bus VTs.

Install 2 new set (3-phase) of 12.5kV Bus VTs.

Install 2 new 3-phase of 12.5kV 15kVA Station Service Transformers.

#### Project Benefits:

Improve the reliability of the network in the city of Ithaca and ensure the local electrical grid can support the additional load.

#### Project Risks and Mitigation Plan:

The main project risks are:

- Awarding of Transformers for Fourth St SS due to the market situation.

Working internally to expedite the procurement process.

- Execute the project with the minimum outages to avoid customers disturbance.

Anticipate the Detailed Engineering to reduce the execution phases and accomodate the work with the minimum outage impact.

#### Risk of No Action:

The current situation of the network ring in Ithaca city requires an increase of capacity to allow future electrification and reduce contingencies.

#### Project Alternatives:

Other alternatives have been studied to improve the 5 stations like including GIS equipment or expanding the substations.

The proposed solution is the most optimal and requires the lowest budget to improve the Ithaca network grid.

#### Basis for Project Estimates

Estimate based on historical projects:

1. Amenia Substation (similar configuration).
2. Similar transformers being procured in the company.
3. Current framework agreements for different materials and engineering costs.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total    | 2020 | 2021 | 2022   | 2023   | 2024   |  |  |
|------------------------|----------|------|------|--------|--------|--------|--|--|
| # AFUDC                | \$ 52    | \$ - | \$ - | \$ 2   | \$ 11  | \$ 39  |  |  |
| # CIAC                 | \$ -     | \$ - | \$ - | \$ -   | \$ -   | \$ -   |  |  |
| # External Services    | \$ 291   | \$ - | \$ - | \$ 37  | \$ 79  | \$ 175 |  |  |
| # Internal - Non-AC    | \$ 2     | \$ - | \$ - | \$ 0   | \$ 0   | \$ 1   |  |  |
| # Internal, Labor      | \$ 194   | \$ - | \$ - | \$ 40  | \$ 56  | \$ 98  |  |  |
| # Internal, Overheads  | \$ 122   | \$ - | \$ - | \$ 10  | \$ 17  | \$ 95  |  |  |
| # Materials            | \$ 288   | \$ - | \$ - | \$ -   | \$ -   | \$ 288 |  |  |
| # Overheads - External | \$ 216   | \$ - | \$ - | \$ 23  | \$ 47  | \$ 146 |  |  |
| Total                  | \$ 1,165 | \$ - | \$ - | \$ 112 | \$ 211 | \$ 841 |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 1,958         | \$ 200          | \$ 659          | \$ 1,098        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 9,749         | \$ 2,698        | \$ 3,626        | \$ 3,425        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 116           | \$ 37           | \$ 39           | \$ 40           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 1,311         | \$ 388          | \$ 663          | \$ 260          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 5,377         | \$ 2,345        | \$ 2,902        | \$ 131          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 1,456         | \$ 530          | \$ 650          | \$ 276          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 19,967</b> | <b>\$ 6,198</b> | <b>\$ 8,540</b> | <b>\$ 5,230</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **NYSEG Electric Customer Focus**



## NYSEG - Dist Line

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0028-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Distribution Line Program consists of replacing infrastructure in response to emergency situations which cause interruptions to service such as those initiated by motor vehicle accidents (MVAs). This is an on-going (annual) program which includes all overhead and underground distribution system work for emergency repairs, corrective/reactive work, customer restoration resulting from equipment failures, compliance work to meet company standards of construction, and minor storm work. Types of work include, but are not limited to, pole replacements, National Electric Safety Code (NESC) clearance adjustments, cable faults, miscellaneous equipment failure / damage to the electric system plant. The source of this work originates from customer trouble calls, unplanned outages, emergency response, and damages to electric infrastructure caused by minor storms. Although this program is considered as "reactive," not all work activities are in response to outage situations (i.e., post-customer outages). For example, if NESC clearance violations are identified, this program would be used as the funding source to upgrade those facilities in advance of an outage occurring. These types of work serve to improve system reliability statistics (System Average Interruption Frequency Index "SAIFI" and Customer Average Interruption Duration Index "CAIDI") and reduce outage risks for our customers. This work is considered as a mandatory initiative since it serves to ensure existing customer reliability and quickly restores customer service in the event of an unplanned outage condition.

#### System Needs Summary:

The following section summarizes NYSEG System SAIFI impacts that were caused by distribution system outages and subsequently addressed by the Distribution Line Program:

- 1) 2020 Impacts: 11,496 unplanned distribution outages, NYSEG SAIFI Contribution 1.09
- 2) 2021 Impacts: 10,951 unplanned distribution outages, NYSEG SAIFI Contribution 0.97
- 3) 2022 Impacts: 11,158 unplanned distribution outages, NYSEG SAIFI Contribution 0.98
- 4) 2023 Impacts: 10,372 unplanned distribution outages, NYSEG SAIFI Contribution 0.94
- 5) 2024 Impacts: 10,607 unplanned distribution outages, NYSEG SAIFI Contribution 0.93

#### Project Scope:

This program is mainly intended for unplanned, reactive work on the electric distribution system to repair and replace elements such as damaged conductors, transformers, cross-arms, fuse cutouts, regulators, guy-wire, poles, etc. In addition, this program has historically been used to mitigate outage risks before they occur and can originate from customer trouble calls, NESC clearance violations, etc. Due to the reactive and unknown nature of future work, specific sub-project scoping cannot be provided. However, any failed component on the distribution system would utilize this program funding source to address the identified system need. Execution timelines associated with this type of work are generally short in nature since they are not overly complex and implement an in-kind replacement strategy.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units= 5,404) \$2,921/unit\*

Transformers (estimated units= 1,751) \$2,506/unit\*

Overhead Conductor (Wire) Ft - (estimated ft = 52,564) \$12/ft\*

Underground Conductor (Cable) Ft - (estimated ft= 7,629) \$33/ft\*

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

This average cost is driven by many factors such as the timing of incident and the type of pole used for replacement (Class 1 vs. Class 2). For example, many incidents occur after normal business hours and the labor component associated with these repairs are inherently greater (i.e., overtime pay). Both internal and contractor crews respond to outages as needed. In consideration of these common off-hour incidents, every effort is made to first make the area safe to the public, and if possible, perform permanent repairs during normal business hours which allows the company to perform the work at a lower cost. However this is not always feasible and repairs are needed immediately.

In addition to the above units and average costs, the budget includes costs not detailed in unit costs/counts of \$5M.

**Project Benefits:**

Being able to quickly repair damaged assets is paramount in ensuring public safety and maintaining a reliable distribution system for our customers. The program maintains public safety, addresses imminent issues prior to outages occurring, and helps to ensure that our NY regulatory service targets are achieved on an annual basis.

**Project Risks and Mitigation Plan:**

Inadequate funding, on an annual basis, has been the primary risk associated with this program. Program tracking and monitoring of available budget is continually balanced with remaining/anticipated workload, and in many cases, financial offsets are required from other planned work to fund this mandatory work throughout the year. These offsets create downstream consequences since prioritized work can no longer be executed as planned which can affect any number of factors, mainly system reliability.

**Risk of No Action:**

The consequences of not undertaking this project will lead to system abnormal conditions and unsafe conditions for the public and workforce. Leaving failed equipment, broken poles, failed cable and non-standard construction will have a negative impact on reliability (CAIDI) and lead to legal and regulatory scrutiny. Connecting customers and ensuring reliable service is our fundamental goal; taking no action to restore customers after equipment failure or MVA is not an option. Delayed or non-execution of customer restoration could result in fines, penalties and reputation damage.

**Project Alternatives:**

This program aims to replace outage equipment using an "in-kind" replacement strategy and therefore project alternatives are not applicable within this program.

**Basis for Project Estimates**

Future annual spending targets are informed by an annual analysis which considers historical itemized component upgrades (poles, transformers, conductor, etc.) and overall spending from prior years. Using prior actuals, by component upgrade type, is the basis for future spending projections and a current and justified escalation factor is used to inform each subsequent out-year.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total             | 2020             | 2021             | 2022             | 2023             | 2024             |  |  |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 3,805          | \$ 302           | \$ 495           | \$ 817           | \$ 873           | \$ 1,318         |  |  |
| # CIAC                 | \$ -16,990        | \$ -3,879        | \$ -2,542        | \$ -3,481        | \$ -4,357        | \$ -2,732        |  |  |
| # External Services    | \$ 54,477         | \$ 19,006        | \$ 12,295        | \$ 8,274         | \$ 8,614         | \$ 6,288         |  |  |
| # Internal - Non-AC    | \$ 1              | \$ 0             | \$ 0             | \$ 0             | \$ 0             | \$ 0             |  |  |
| # Internal, Labor      | \$ 39,107         | \$ 6,319         | \$ 6,901         | \$ 7,922         | \$ 9,277         | \$ 8,688         |  |  |
| # Internal, Overheads  | \$ 21,600         | \$ 3,770         | \$ 4,133         | \$ 3,599         | \$ 4,645         | \$ 5,453         |  |  |
| # Materials            | \$ 50,231         | \$ 6,582         | \$ 6,410         | \$ 7,941         | \$ 12,514        | \$ 16,784        |  |  |
| # Overheads - External | \$ 35,852         | \$ 5,451         | \$ 6,289         | \$ 6,274         | \$ 8,926         | \$ 8,912         |  |  |
| <b>Total</b>           | <b>\$ 188,083</b> | <b>\$ 37,553</b> | <b>\$ 33,981</b> | <b>\$ 31,347</b> | <b>\$ 40,492</b> | <b>\$ 44,711</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| Outside Services | \$ 1,620        | \$ 363        | \$ 467        | \$ 267        | \$ 334        | \$ 189        |  |  |
| Materials        | \$ 1,120        | \$ 136        | \$ 115        | \$ 240        | \$ 292        | \$ 336        |  |  |
| Other O&M        | \$ 47           | \$ 3          | \$ 11         | \$ 6          | \$ 10         | \$ 17         |  |  |
| <b>Total</b>     | <b>\$ 2,787</b> | <b>\$ 502</b> | <b>\$ 593</b> | <b>\$ 513</b> | <b>\$ 636</b> | <b>\$ 542</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 2,316          | \$ -             | \$ 337           | \$ 372           | \$ 383           | \$ 395           | \$ 408           | \$ 421           |
| # CIAC                 | \$ -21,829        | \$ -2,962        | \$ -3,067        | \$ -3,098        | \$ -3,128        | \$ -3,160        | \$ -3,191        | \$ -3,223        |
| # External Services    | \$ 78,772         | \$ 10,233        | \$ 10,596        | \$ 10,914        | \$ 11,241        | \$ 11,579        | \$ 11,926        | \$ 12,284        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 65,037         | \$ 8,448         | \$ 8,748         | \$ 9,011         | \$ 9,281         | \$ 9,560         | \$ 9,847         | \$ 10,142        |
| # Internal, Overheads  | \$ 19,444         | \$ 2,768         | \$ 3,096         | \$ 2,514         | \$ 2,428         | \$ 2,454         | \$ 2,743         | \$ 3,440         |
| # Materials            | \$ 72,513         | \$ 9,419         | \$ 9,754         | \$ 10,047        | \$ 10,348        | \$ 10,659        | \$ 10,978        | \$ 11,308        |
| # Overheads - External | \$ 31,074         | \$ 4,154         | \$ 4,998         | \$ 4,059         | \$ 3,920         | \$ 3,962         | \$ 4,428         | \$ 5,553         |
| <b>Total</b>           | <b>\$ 247,328</b> | <b>\$ 32,061</b> | <b>\$ 34,463</b> | <b>\$ 33,819</b> | <b>\$ 34,474</b> | <b>\$ 35,449</b> | <b>\$ 37,139</b> | <b>\$ 39,923</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 2,412        | \$ 315        | \$ 331        | \$ 339        | \$ 346        | \$ 353        | \$ 360        | \$ 368        |
| Materials        | \$ 1,667        | \$ 218        | \$ 229        | \$ 234        | \$ 239        | \$ 244        | \$ 249        | \$ 254        |
| Other O&M        | \$ 70           | \$ 9          | \$ 10         | \$ 10         | \$ 10         | \$ 10         | \$ 10         | \$ 11         |
| <b>Total</b>     | <b>\$ 4,149</b> | <b>\$ 542</b> | <b>\$ 570</b> | <b>\$ 582</b> | <b>\$ 595</b> | <b>\$ 607</b> | <b>\$ 620</b> | <b>\$ 633</b> |

## Make Ready

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>PRJ-000852            | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Make Ready means the administrative, engineering and/or construction activities necessary to make a pole, conduit, or other support equipment available for a new attachment, attachment modifications, or additional facilities. Must follow the pole application process to assure safe, authorized, licensed access from utility owner(s).

The Joint Use Make Ready Program in large part is mandatory work performed as part of a statewide broadband/connect all initiatives. It affects both NYSEG and RG&E. Every project is comprised of work paid directly by the 3rd Party Attacher and work paid by the utility.

The ratio is based on type and location of the proposed work. We manage the work via scalable processes that rely exclusively on contractor resources; however, the work originates entirely from outside the Companies and subject to considerable volatility.

The work started to increase steadily every year. After a brief decline during COVID, a 2022 spike was seen due to venture capital financing. After a record Q1 in 2023, application volume declined in Q2 and continued to decrease further showcasing the extreme volatility.

The volume seen between 2018-2023 is a result of the "NY Broadband for All" initiative which focused on building out broadband in densely populated areas. The Companies have yet to see the impact of the new "Connect ALL" initiative which aims to provide digital equity in rural communities.

Electric Operations has worked with Regulatory and Legal to update the rule making for the cost treatment of the different situations encountered in the field which will decrease our cost exposure in the future and expanded upon the metrics used for measuring the incoming and outgoing work.

Annual attachment requests are inconsistent, and with respect to planning, we are on the receiving end of the process. This exposes NYSEG to considerable volatility.

#### Project Scope:

NYSEG spend is a direct result of when construction is completed, as-builts are accepted, and an invoice is received, not when applications are initiated. Based on this, NYSEG has updated the forecasting methodology using conversion ratios. By examining historically, the amount of construction that converts into ready to pay status both yearly and overall, NYSEG is better able to anticipate future spend levels. Attachers do not typically share forecasts years in advance of their build outs.

The following units and average unit costs will be addressed between 2025-2031:

2025

Pole Rearrangement - 1,903 (units) / \$7,433 (unit cost)

Pole Replacement - 2,155 (units) / \$13,952 (unit cost)

2026

Pole Rearrangement - 1,848 (units) / \$7,433 (unit cost)

Pole Replacement - 2,092 (units) / \$14,370 (unit cost)

2027

Pole Rearrangement - 2,395 (units) / \$7,886 (unit cost)

Pole Replacement - 2,712(units) / \$14,801 (unit cost)

2028

Pole Rearrangement - 2,325 (units) / \$8,122 (unit cost)

Pole Replacement - 2,633 (units) / \$15,245 (unit cost)

2029

Pole Rearrangement - 1,881 (units) / \$8,366 (unit cost)

Pole Replacement - 2,130 (units) / \$15,703 (unit cost)

2030

Pole Rearrangement - 1,827 (units) / \$8,617 (unit cost)

Pole Replacement - 2,068 (units) / \$16,174(unit cost)

2031

Pole Rearrangement - 1,773 (units) / \$8,876 (unit cost)

Pole Replacement - 2,008 (units) / \$16,659 (unit cost)

**Project Benefits:**

Provides an avenue for timely access to distribution pole plant for communications and broadband deployment needs in serving residents of New York State and prevents the Companies from being subject to the significant fines associated with not meeting regulatory targets.

**Project Risks and Mitigation Plan:**

The risks associated with this program are as follows:

- 1) This program and its annual requirements are volume sensitive. Forecasts are volatile and are changed frequently by attachers.
  - 2) Make-ready engineering and construction are external contractors. NYSEG coordinates with these entities, but backlog can develop and delays increase.
- NYSEG works with attachers and all other entities to ensure that overall broadband expansion plans are not delayed. Work is prioritized and coordinated so that attachers builds are meeting their build timelines.

**Risk of No Action:**

The third party pole attachment application process has compliance timeframes and the Commission could fine NYSEG and/or RG&E \$100K per pole that was refused to be paid for Non-Billable make ready as a violation of the Order and/or 119-a.

Attachers right to bring forth civil suits for recovery of costs/damages.

Attachers could bring claim to regulator in violation of certain Pole Attachment issues.

New York State Public Service Commission (Commission) could bring forth Order to Show Cause and possible penalties.

Commission could require NYSEG & RG&E to take back and complete all Make Ready with its own internal/contracted vendors and meet 45-day construction timelines.

Attachers could go to Media.

Attachers could gain future support from regulators on aggressive rulemaking in favor of Attachers and to the detriment of pole owners.

**Project Alternatives:**

This program aims to replace outage equipment using an "in-kind" replacement strategy.

**Basis for Project Estimates**

CAPEX requirements for this program are volume sensitive and highly volatile. Attachers do not typically share forecasts years in advance of their build outs. The spend and the application volume correlate in that an increase in applications will increase the cost, however, not always in the same calendar year.

The NYSEG updated the forecasting methodology using conversion ratios and by examining historically, the amount of construction that converts into ready to pay.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2020             | 2021             | 2022             | 2023              | 2024             |  |  |
|------------------------|-------------------|------------------|------------------|------------------|-------------------|------------------|--|--|
| # AFUDC                | \$ 569            | \$ 28            | \$ 43            | \$ 14            | \$ 435            | \$ 49            |  |  |
| # CIAC                 | \$ -5,384         | \$ -32           | \$ -572          | \$ -968          | \$ -735           | \$ -3,077        |  |  |
| # External Services    | \$ 225,617        | \$ 13,010        | \$ 24,374        | \$ 38,007        | \$ 76,321         | \$ 73,904        |  |  |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -              | \$ -             |  |  |
| # Internal, Labor      | \$ 37             | \$ 1             | \$ 4             | \$ 20            | \$ 9              | \$ 3             |  |  |
| # Internal, Overheads  | \$ 23,809         | \$ 290           | \$ 1,898         | \$ 4,458         | \$ 9,191          | \$ 7,971         |  |  |
| # Materials            | \$ 78             | \$ 0             | \$ 27            | \$ 20            | \$ 12             | \$ 18            |  |  |
| # Overheads - External | \$ 40,637         | \$ 412           | \$ 2,610         | \$ 7,485         | \$ 16,843         | \$ 13,288        |  |  |
| <b>Total</b>           | <b>\$ 285,363</b> | <b>\$ 13,709</b> | <b>\$ 28,385</b> | <b>\$ 49,037</b> | <b>\$ 102,076</b> | <b>\$ 92,156</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: |    | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|----|-------|------|------|------|------|------|
| Total        | \$ | -     | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # CIAC                 | \$ -6,205         | \$ -910          | \$ -910          | \$ -974          | \$ -974          | \$ -812          | \$ -812          | \$ -812          |
| # External Services    | \$ 360,233        | \$ 45,116        | \$ 45,116        | \$ 60,000        | \$ 60,000        | \$ 50,000        | \$ 50,000        | \$ 50,000        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 2              | \$ 1             | \$ 1             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ 27,287         | \$ 3,725         | \$ 4,083         | \$ 4,282         | \$ 4,015         | \$ 3,283         | \$ 3,563         | \$ 4,337         |
| # Materials            | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Overheads - External | \$ 28,178         | \$ 3,621         | \$ 4,256         | \$ 4,463         | \$ 4,184         | \$ 3,422         | \$ 3,713         | \$ 4,520         |
| <b>Total</b>           | <b>\$ 409,494</b> | <b>\$ 51,552</b> | <b>\$ 52,546</b> | <b>\$ 67,770</b> | <b>\$ 67,225</b> | <b>\$ 55,893</b> | <b>\$ 56,464</b> | <b>\$ 58,045</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG - Trans line

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0024-NYSEG-ET     | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Transmission Line program encompasses both planned work and emergency responses to service interruptions. This program addresses safety concerns by replacing reject poles, car-hit poles, damaged conductors, and other unplanned, reactive work on the electric transmission system at 34.5 kV or higher. Additionally, it includes replacing individual units of property identified as emergent from the transmission line inspection program and addressing Customer Average Interruption Duration Index (CAIDI) and System Average Interruption Frequency Index (SAIFI) Hot Spots within the same calendar year.

#### Project Scope:

This program covers both planned and unplanned, reactive work on the electric transmission system, including tasks such as replacing car-hit poles, damaged conductors, crossarms, cutouts, and poles. The majority of the program activities are related to planned work.

The TLD program consists of a field inspection that generates notifications for maintenance work execution on company equipment within transmission lines. The execution happens following a workplan based on a prioritization matrix of transmission line segments that includes maintenance status, notifications priority, asset data, customer exposure and reliability history. At NYSEG an average of 86,000 customers were interrupted annually by company equipment failure causes on transmission lines over the past 3 years.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 212) \$46,575/unit\*

Arms/Insulators (estimated units = 62) \$50,670/unit\*

Insulators (estimated units = 43) \$25,500/unit\*

Lightning Arrestor (estimated units = 10) \$13,500/unit\*

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rates.

#### Project Benefits:

Addressing CAIDI/SAIFI Hot Spots and replacing damaged equipment will positively impact the continuity and quality of service needed to maintain the transmission system. This will also help avoid penalties associated with failing reliability metrics. A Power BI dashboard ranks all notifications based on reliability, which determines their prioritization.

#### Project Risks and Mitigation Plan:

Potential increased power losses due to degraded conductors, risk of outages from weakened components, increased maintenance needs, potential for sagging or breaking wires, and reduced capacity to transmit electricity efficiently could all affect reliability and stability. Regular inspections and maintenance of the lines are essential to promptly identify and address these potential issues. While there are strategies to complete planned work, emergent tasks may arise that will need to be prioritized. This could impact the completion timeline of corrective actions, extending them into future years.

#### Risk of No Action:

Failure to replace deteriorated poles and equipment will result in non-compliance with National Electrical Safety Code (NESC) requirements, putting the safety of the public and utility workers at risk. Potential increased power losses due to degraded conductors, risk of outages from weakened components, increased maintenance needs, potential for sagging or breaking wires, and reduced capacity to transmit electricity efficiently could all affect reliability and stability.

#### Project Alternatives:

This program aims to replace outage equipment using an "in-kind" replacement strategy.

**Basis for Project Estimates**

Future annual spending targets are determined through an annual analysis that considers historical itemized component upgrades (such as poles and conductors) and overall spending from previous years.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020             | 2021            | 2022             | 2023            | 2024             |  |  |
|------------------------|------------------|------------------|-----------------|------------------|-----------------|------------------|--|--|
| # AFUDC                | \$ 1,948         | \$ 260           | \$ 328          | \$ 469           | \$ 382          | \$ 509           |  |  |
| # CIAC                 | \$ -123          | \$ -37           | \$ -46          | \$ -29           | \$ -11          | \$ -             |  |  |
| # External Services    | \$ 33,349        | \$ 7,375         | \$ 5,779        | \$ 10,106        | \$ 3,798        | \$ 6,291         |  |  |
| # Internal - Non-AC    | \$ 1             | \$ 1             | \$ -            | \$ 0             | \$ -1           | \$ 2             |  |  |
| # Internal, Labor      | \$ 1,880         | \$ 341           | \$ 221          | \$ 397           | \$ 359          | \$ 562           |  |  |
| # Internal, Overheads  | \$ 5,541         | \$ 935           | \$ 1,084        | \$ 1,533         | \$ 702          | \$ 1,287         |  |  |
| # Materials            | \$ 7,264         | \$ 1,261         | \$ 1,152        | \$ 1,128         | \$ 1,448        | \$ 2,274         |  |  |
| # Overheads - External | \$ 8,262         | \$ 1,286         | \$ 1,371        | \$ 2,421         | \$ 1,275        | \$ 1,908         |  |  |
| <b>Total</b>           | <b>\$ 58,122</b> | <b>\$ 11,422</b> | <b>\$ 9,889</b> | <b>\$ 16,026</b> | <b>\$ 7,952</b> | <b>\$ 12,833</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2020          | 2021          | 2022          | 2023            | 2024            |  |  |
|------------------|-----------------|---------------|---------------|---------------|-----------------|-----------------|--|--|
| Outside Services | \$ 3,601        | \$ 142        | \$ 118        | \$ 453        | \$ 1,504        | \$ 1,384        |  |  |
| Materials        | \$ 92           | \$ 21         | \$ 3          | \$ 11         | \$ 47           | \$ 12           |  |  |
| Other O&M        | \$ 16           | \$ 11         | \$ -          | \$ 2          | \$ 0            | \$ 3            |  |  |
| <b>Total</b>     | <b>\$ 3,709</b> | <b>\$ 174</b> | <b>\$ 120</b> | <b>\$ 466</b> | <b>\$ 1,551</b> | <b>\$ 1,398</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 1,457          | \$ 264           | \$ 185           | \$ 190           | \$ 196           | \$ 202           | \$ 208           | \$ 214           |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 91,084         | \$ 11,996        | \$ 12,227        | \$ 12,594        | \$ 12,971        | \$ 13,360        | \$ 13,761        | \$ 14,174        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 2,538          | \$ 334           | \$ 341           | \$ 351           | \$ 361           | \$ 372           | \$ 383           | \$ 395           |
| # Internal, Overheads  | \$ 8,425          | \$ 1,203         | \$ 1,341         | \$ 1,089         | \$ 1,052         | \$ 1,063         | \$ 1,188         | \$ 1,490         |
| # Materials            | \$ 12,718         | \$ 1,675         | \$ 1,707         | \$ 1,758         | \$ 1,811         | \$ 1,865         | \$ 1,921         | \$ 1,979         |
| # Overheads - External | \$ 8,985          | \$ 1,208         | \$ 1,444         | \$ 1,173         | \$ 1,132         | \$ 1,145         | \$ 1,279         | \$ 1,604         |
| <b>Total</b>           | <b>\$ 125,207</b> | <b>\$ 16,680</b> | <b>\$ 17,244</b> | <b>\$ 17,155</b> | <b>\$ 17,524</b> | <b>\$ 18,007</b> | <b>\$ 18,741</b> | <b>\$ 19,856</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Outside Services | \$ 11,868        | \$ 1,552        | \$ 1,630        | \$ 1,666        | \$ 1,701        | \$ 1,736        | \$ 1,773        | \$ 1,810        |
| Materials        | \$ 304           | \$ 40           | \$ 42           | \$ 43           | \$ 44           | \$ 45           | \$ 45           | \$ 46           |
| Other O&M        | \$ 53            | \$ 7            | \$ 7            | \$ 7            | \$ 8            | \$ 8            | \$ 8            | \$ 8            |
| <b>Total</b>     | <b>\$ 12,225</b> | <b>\$ 1,598</b> | <b>\$ 1,679</b> | <b>\$ 1,716</b> | <b>\$ 1,752</b> | <b>\$ 1,789</b> | <b>\$ 1,826</b> | <b>\$ 1,865</b> |



## NYSEG - Res Line

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0016-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program provides distribution line extensions and necessary facilities (poles, transformers, conductors, conduit, hand holes, manholes, etc.) to provide service to both large scale residential development projects and individual residential units or meters.

#### Project Scope:

This is an on-going program for residential overhead and underground new services, underground residential cable repairs, rebuilds, secondary line extension, initial installation of equipment for every subdivision on-going program for residential overhead and underground new services, underground residential cable repairs, rebuilds, secondary line extension, initial installation of equipment for every subdivision (single phase or multiple phases). The scope, designs, estimates and construction is based on customer request that come in throughout the year. This includes new residential service for 3-phase primary overhead or underground, single premise which would be for a multi-unit apartment building with separate metering, requiring a 3-phase transformer. This would include distribution primary system upgrades to serve this new customer. The scope of the construction may include installing new poles, transformers and primary/secondary/service wires. Additionally, the scope would include interconnecting with a neighboring Utility. It could be both billable or non-billable.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 1,583) \$3,925/unit\*

Transformers (estimated units = 853) \$4,744/unit\*

Overhead Conductor (Wire) Ft - (estimated ft = 10,271) \$7/ft\*

Underground Conductor (Cable) Ft - (estimated ft = 3,919) \$31/ft\*

Misc Costs: \$213K anchors, arresters, capacitors, cutouts, crossarms, deadend, fuses, insulators, regulators, risers, reclosers, and vaults).

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031.

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

#### Project Benefits:

Project is required for new customers connections. This includes service work for temporary and permanent construction (new, increases, replacements, removals, and demolitions). The work is required to satisfy customer needs to purchase new or additional power for their consumption. NYSEG has an obligation to serve all customers within our franchise area and our policies and procedures are under the regulation of the NY PSC Tariff.

#### Project Risks and Mitigation Plan:

Inadequate funding, on an annual basis, has been the primary risk associated with this program. Program tracking and monitoring of available budget is continually balanced with remaining/anticipated workload, and in many cases, financial offsets are required from other planned work to fund this mandatory work throughout the year. These offsets create downstream consequences since prioritized work can no longer be executed as planned which can affect any number of factors, mainly system reliability.

#### Risk of No Action:

The Company is required to connect customers requesting service. Delayed or non-execution of customer applications could result in fines, penalties and reputation damages.

**Project Alternatives:**

Each customer application is designed using company standards and adherence to NESC. Alternatives are considered and offered to the customer through the design phase where possible.

**Basis for Project Estimates**

Future annual spending targets are informed by an annual analysis which considers historical itemized component upgrades (poles, transformers, conductor, etc.) and overall spending from prior years. Using prior actuals, by component upgrade type, is the basis for future spending projections and a current and justified escalation factor is used to inform each subsequent out-year.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020             | 2021             | 2022             | 2023             | 2024             |  |  |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 1,220         | \$ 104           | \$ 132           | \$ 220           | \$ 351           | \$ 414           |  |  |
| # CIAC                 | \$ -6,566        | \$ -882          | \$ -1,248        | \$ -1,040        | \$ -1,466        | \$ -1,929        |  |  |
| # External Services    | \$ 16,660        | \$ 3,275         | \$ 3,446         | \$ 3,670         | \$ 3,652         | \$ 2,617         |  |  |
| # Internal - Non-AC    | \$ 0             | \$ -0            | \$ -             | \$ -             | \$ 1             | \$ -             |  |  |
| # Internal, Labor      | \$ 14,355        | \$ 2,328         | \$ 2,618         | \$ 2,827         | \$ 3,194         | \$ 3,388         |  |  |
| # Internal, Overheads  | \$ 7,472         | \$ 1,173         | \$ 1,380         | \$ 1,359         | \$ 1,730         | \$ 1,829         |  |  |
| # Materials            | \$ 16,096        | \$ 2,269         | \$ 2,221         | \$ 2,679         | \$ 4,411         | \$ 4,515         |  |  |
| # Overheads - External | \$ 12,880        | \$ 1,793         | \$ 2,152         | \$ 2,424         | \$ 3,369         | \$ 3,142         |  |  |
| <b>Total</b>           | <b>\$ 62,116</b> | <b>\$ 10,060</b> | <b>\$ 10,701</b> | <b>\$ 12,138</b> | <b>\$ 15,241</b> | <b>\$ 13,976</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total         | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|--|--|
| Outside Services | \$ 300        | \$ 74         | \$ 101        | \$ 51         | \$ 61         | \$ 13         |  |  |
| Materials        | \$ 566        | \$ 64         | \$ 76         | \$ 132        | \$ 161        | \$ 133        |  |  |
| Other O&M        | \$ 17         | \$ 5          | \$ 6          | \$ -          | \$ 3          | \$ 2          |  |  |
| <b>Total</b>     | <b>\$ 883</b> | <b>\$ 143</b> | <b>\$ 183</b> | <b>\$ 183</b> | <b>\$ 225</b> | <b>\$ 148</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 1,210          | \$ 156           | \$ 158           | \$ 168           | \$ 173           | \$ 179           | \$ 185           | \$ 191           |
| # CIAC                 | \$ -12,167        | \$ -1,547        | \$ -1,726        | \$ -1,743        | \$ -1,761        | \$ -1,778        | \$ -1,796        | \$ -1,814        |
| # External Services    | \$ 41,179         | \$ 5,011         | \$ 5,591         | \$ 5,759         | \$ 5,932         | \$ 6,110         | \$ 6,293         | \$ 6,482         |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 28,985         | \$ 3,527         | \$ 3,936         | \$ 4,054         | \$ 4,175         | \$ 4,301         | \$ 4,430         | \$ 4,562         |
| # Internal, Overheads  | \$ 8,797          | \$ 1,174         | \$ 1,415         | \$ 1,149         | \$ 1,110         | \$ 1,122         | \$ 1,254         | \$ 1,572         |
| # Materials            | \$ 28,946         | \$ 3,523         | \$ 3,930         | \$ 4,048         | \$ 4,170         | \$ 4,295         | \$ 4,424         | \$ 4,556         |
| # Overheads - External | \$ 14,037         | \$ 1,758         | \$ 2,280         | \$ 1,851         | \$ 1,788         | \$ 1,807         | \$ 2,020         | \$ 2,533         |
| <b>Total</b>           | <b>\$ 110,987</b> | <b>\$ 13,603</b> | <b>\$ 15,584</b> | <b>\$ 15,287</b> | <b>\$ 15,588</b> | <b>\$ 16,035</b> | <b>\$ 16,809</b> | <b>\$ 18,082</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 386          | \$ 50         | \$ 53         | \$ 54         | \$ 55         | \$ 56         | \$ 58         | \$ 59         |
| Materials        | \$ 728          | \$ 95         | \$ 100        | \$ 102        | \$ 104        | \$ 106        | \$ 109        | \$ 111        |
| Other O&M        | \$ 22           | \$ 3          | \$ 3          | \$ 3          | \$ 3          | \$ 3          | \$ 3          | \$ 3          |
| <b>Total</b>     | <b>\$ 1,136</b> | <b>\$ 148</b> | <b>\$ 156</b> | <b>\$ 159</b> | <b>\$ 163</b> | <b>\$ 166</b> | <b>\$ 170</b> | <b>\$ 173</b> |

## NYSEG - Serv Conn

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0020-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program installs new electric service to single phase residential or commercial units including temporary service at the customer's request.

#### Project Scope:

This on-going program installs electric service to single phase residential or commercial units including temporary service at the customer's request. Included within the program is anything required for constructing, expanding, replacing, or relocating electric infrastructure assets to connect customers. Meters required as part of customer projects are also included on this line item. The cost of the service is comprised of tariff portions as well as customer payments for the amounts above the tariff required provision.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 1,385) \$3,399/unit\*

Transformers (estimated units = 1,186) \$2,318/unit\*

Overhead Conductor (Wire) ft - (estimated ft = 90,573) \$7/ft\*

Underground Conductor (Cable) ft - (estimated ft = 2,473) \$11/ft\*

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

In addition to the above units and average costs, the budget includes \$199K for miscellaneous items: anchors, arresters, capacitors, cutouts, crossarms, deadend, fuses, insulators, regulators, risers, reclosers, and vaults.

#### Project Benefits:

NYSEG is required to perform the work associated with single phase commercial and residential service orders. This work is required to satisfy customer needs for power consumption, including for temporary services. NYSEG has an obligation to serve all customers within our franchise territory in accordance with our tariffs.

#### Project Risks and Mitigation Plan:

Inadequate funding, on an annual basis, has been the primary risk associated with this program. Program tracking and monitoring of available budget is continually balanced with remaining/anticipated workload, and in many cases, financial offsets are required from other planned work to fund this mandatory work throughout the year. These offsets create downstream consequences since prioritized work can no longer be executed as planned which can affect any number of factors, mainly system reliability.

#### Risk of No Action:

The Company is required to connect customers requesting service. Delayed or non-execution of customer applications could result in fines, penalties and reputation damages.

#### Project Alternatives:

Each customer application is designed using company standards and adherence to NESC. Alternatives are considered and offered to the customer through the design phase where possible.

**Basis for Project Estimates**

Future annual spending targets are informed by an annual analysis which considers historical itemized component upgrades (poles, transformers, conductor, etc.) and overall spending from prior years. Using prior actuals, by component upgrade type, is the basis for future spending projections and a current and justified escalation factor is used to inform each subsequent out-year.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021             | 2022            | 2023             | 2024             |  |  |
|------------------------|------------------|-----------------|------------------|-----------------|------------------|------------------|--|--|
| # AFUDC                | \$ 695           | \$ 47           | \$ 98            | \$ 130          | \$ 166           | \$ 254           |  |  |
| # CIAC                 | \$ -7,236        | \$ -1,565       | \$ -1,128        | \$ -1,071       | \$ -1,673        | \$ -1,799        |  |  |
| # External Services    | \$ 5,838         | \$ 1,230        | \$ 1,501         | \$ 1,129        | \$ 808           | \$ 1,170         |  |  |
| # Internal - Non-AC    | \$ 9             | \$ 3            | \$ -             | \$ -            | \$ 6             | \$ -0            |  |  |
| # Internal, Labor      | \$ 19,009        | \$ 3,153        | \$ 3,986         | \$ 3,787        | \$ 3,780         | \$ 4,303         |  |  |
| # Internal, Overheads  | \$ 7,045         | \$ 1,053        | \$ 1,416         | \$ 1,214        | \$ 1,345         | \$ 2,018         |  |  |
| # Materials            | \$ 16,363        | \$ 2,308        | \$ 2,321         | \$ 2,388        | \$ 3,442         | \$ 5,904         |  |  |
| # Overheads - External | \$ 12,785        | \$ 1,745        | \$ 2,396         | \$ 2,289        | \$ 2,788         | \$ 3,567         |  |  |
| <b>Total</b>           | <b>\$ 54,508</b> | <b>\$ 7,975</b> | <b>\$ 10,591</b> | <b>\$ 9,866</b> | <b>\$ 10,661</b> | <b>\$ 15,416</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| Outside Services | \$ 132          | \$ 57         | \$ 26         | \$ 19         | \$ 13         | \$ 17         |  |  |
| Materials        | \$ 865          | \$ 94         | \$ 144        | \$ 175        | \$ 181        | \$ 270        |  |  |
| Other O&M        | \$ 33           | \$ 14         | \$ 15         | \$ -          | \$ 4          | \$ -          |  |  |
| <b>Total</b>     | <b>\$ 1,030</b> | <b>\$ 165</b> | <b>\$ 185</b> | <b>\$ 195</b> | <b>\$ 199</b> | <b>\$ 287</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 881           | \$ 122           | \$ 120           | \$ 120           | \$ 124           | \$ 128           | \$ 132           | \$ 136           |
| # CIAC                 | \$ -9,289        | \$ -1,300        | \$ -1,299        | \$ -1,312        | \$ -1,325        | \$ -1,338        | \$ -1,351        | \$ -1,365        |
| # External Services    | \$ 11,151        | \$ 1,495         | \$ 1,493         | \$ 1,538         | \$ 1,584         | \$ 1,631         | \$ 1,680         | \$ 1,731         |
| # Internal - Non-AC    | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 30,510        | \$ 4,090         | \$ 4,084         | \$ 4,207         | \$ 4,333         | \$ 4,463         | \$ 4,597         | \$ 4,735         |
| # Internal, Overheads  | \$ 6,663         | \$ 983           | \$ 1,055         | \$ 857           | \$ 827           | \$ 836           | \$ 934           | \$ 1,172         |
| # Materials            | \$ 28,889        | \$ 3,873         | \$ 3,867         | \$ 3,983         | \$ 4,103         | \$ 4,226         | \$ 4,353         | \$ 4,483         |
| # Overheads - External | \$ 12,112        | \$ 1,674         | \$ 1,938         | \$ 1,574         | \$ 1,520         | \$ 1,536         | \$ 1,717         | \$ 2,153         |
| <b>Total</b>           | <b>\$ 80,916</b> | <b>\$ 10,936</b> | <b>\$ 11,258</b> | <b>\$ 10,967</b> | <b>\$ 11,166</b> | <b>\$ 11,482</b> | <b>\$ 12,062</b> | <b>\$ 13,045</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 282          | \$ 37         | \$ 39         | \$ 40         | \$ 40         | \$ 41         | \$ 42         | \$ 43         |
| Materials        | \$ 1,844        | \$ 241        | \$ 253        | \$ 259        | \$ 264        | \$ 270        | \$ 275        | \$ 281        |
| Other O&M        | \$ 71           | \$ 9          | \$ 10         | \$ 10         | \$ 10         | \$ 10         | \$ 11         | \$ 11         |
| <b>Total</b>     | <b>\$ 2,196</b> | <b>\$ 287</b> | <b>\$ 302</b> | <b>\$ 308</b> | <b>\$ 315</b> | <b>\$ 321</b> | <b>\$ 328</b> | <b>\$ 335</b> |

## NYSEG - Ind/Comm

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0014-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

NYSEG is obligated to connect all customers within its franchise area to the electric distribution system in accordance with tariffs, specific Terms & Conditions, Construction Standards, the National Electrical Safety Code (NESC), NYSEG's Guidebook of Requirements for Electric Service, policies, and procedures. NYSEG Industrial Commercial is an annual blanket program covers hundreds of individual commercial or industrial customer-related service requests each year.

#### Project Scope:

This program provides service connections for industrial and commercial customers. It includes construction work for services supplied by either overhead or underground powerlines for new, increased, replacement, removal, or demolition electric services. Each individual customer request is a unique project with its own design scope of work, schedule, and cost. The scope of the job can include distribution primary system upgrades to serve new customers by installing new poles, transformers, primary wires, and other system equipment. The program covers all activities required for constructing, expanding, replacing, or relocating electric infrastructure assets to connect commercial customers.

The cost of the service comprises tariff portions and customer payments for amounts above the tariff-required provision. Many of these requests are made in-year by our commercial customers and are therefore unplanned.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 813) \$4,747/unit\*

Transformers (estimated units = 270) \$4,338/unit\*

Overhead Conductor (Wire) Ft - (estimated ft = 13,562) \$14/ft\*

Underground Conductor (Cable) Ft - (estimated ft = 7,489) \$16/ft\*

Misc Costs: \$302K anchors, arresters, capacitors, cutouts, crossarms, deadend, fuses, insulators, regulators, risers, reclosers, and vaults).

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031.

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

#### Project Benefits:

The program allows NYSEG to efficiently address all commercial and industrial customer requests for engineering consultations. Whether for new installations, revamp/replacement projects, temporary setups, or demolition services, NYSEG ensures timely and effective responses, enhancing customer satisfaction and operational efficiency.

#### Project Risks and Mitigation Plan:

The primary risk associated with this program is inadequate annual funding. Continuous tracking and monitoring of the available budget are essential to balance the remaining and anticipated workload. Often, financial offsets from other planned work are necessary to fund this mandatory work throughout the year. These offsets can lead to downstream consequences, as prioritized work may not be executed as planned, potentially affecting various factors, primarily system reliability.

#### Risk of No Action:

The Company is obligated to connect customers requesting service. Delays or failure to process customer applications could result in fines, penalties, and reputational damage.

#### Project Alternatives:

Each customer application is designed in accordance with company standards and the National Electrical Safety Code (NESC). Where possible, alternatives are considered and offered to the customer during the design phase.

**Basis for Project Estimates**

Future annual spending targets are determined through an annual analysis that considers historical itemized component upgrades (such as poles, transformers, and conductors) and overall spending from prior years. Projections for future spending are based on prior actuals by component upgrade type, with a current and justified escalation factor used to inform each subsequent out-year.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024             |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|------------------|--|--|
| # AFUDC                | \$ 890           | \$ 68           | \$ 120          | \$ 138          | \$ 207          | \$ 357           |  |  |
| # CIAC                 | \$ -11,102       | \$ -1,969       | \$ -1,419       | \$ -2,269       | \$ -2,772       | \$ -2,673        |  |  |
| # External Services    | \$ 8,271         | \$ 2,017        | \$ 1,422        | \$ 1,459        | \$ 1,357        | \$ 2,017         |  |  |
| # Internal - Non-AC    | \$ 1             | \$ 1            | \$ -            | \$ -            | \$ 0            | \$ -0            |  |  |
| # Internal, Labor      | \$ 9,635         | \$ 1,539        | \$ 1,623        | \$ 1,814        | \$ 2,236        | \$ 2,424         |  |  |
| # Internal, Overheads  | \$ 5,981         | \$ 969          | \$ 1,007        | \$ 976          | \$ 1,203        | \$ 1,825         |  |  |
| # Materials            | \$ 16,846        | \$ 2,387        | \$ 2,335        | \$ 2,675        | \$ 3,708        | \$ 5,741         |  |  |
| # Overheads - External | \$ 9,626         | \$ 1,395        | \$ 1,460        | \$ 1,638        | \$ 2,257        | \$ 2,875         |  |  |
| <b>Total</b>           | <b>\$ 40,148</b> | <b>\$ 6,407</b> | <b>\$ 6,548</b> | <b>\$ 6,432</b> | <b>\$ 8,195</b> | <b>\$ 12,566</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total         | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|--|--|
| Outside Services | \$ 328        | \$ 96         | \$ 68         | \$ 71         | \$ 36         | \$ 57         |  |  |
| Materials        | \$ 639        | \$ 84         | \$ 62         | \$ 142        | \$ 122        | \$ 230        |  |  |
| Other O&M        | \$ 4          | \$ 1          | \$ -          | \$ 3          | \$ -          | \$ -          |  |  |
| <b>Total</b>     | <b>\$ 971</b> | <b>\$ 181</b> | <b>\$ 130</b> | <b>\$ 216</b> | <b>\$ 158</b> | <b>\$ 287</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 663           | \$ 95           | \$ 80           | \$ 91           | \$ 94           | \$ 97           | \$ 101          | \$ 105          |
| # CIAC                 | \$ -19,368       | \$ -2,590       | \$ -2,727       | \$ -2,755       | \$ -2,782       | \$ -2,810       | \$ -2,838       | \$ -2,866       |
| # External Services    | \$ 11,752        | \$ 1,504        | \$ 1,584        | \$ 1,632        | \$ 1,681        | \$ 1,731        | \$ 1,783        | \$ 1,837        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 19,186        | \$ 2,456        | \$ 2,586        | \$ 2,664        | \$ 2,744        | \$ 2,826        | \$ 2,911        | \$ 2,998        |
| # Internal, Overheads  | \$ 5,936         | \$ 834          | \$ 947          | \$ 769          | \$ 743          | \$ 751          | \$ 839          | \$ 1,053        |
| # Materials            | \$ 32,611        | \$ 4,175        | \$ 4,396        | \$ 4,528        | \$ 4,664        | \$ 4,804        | \$ 4,948        | \$ 5,096        |
| # Overheads - External | \$ 9,214         | \$ 1,215        | \$ 1,485        | \$ 1,206        | \$ 1,165        | \$ 1,177        | \$ 1,316        | \$ 1,650        |
| <b>Total</b>           | <b>\$ 59,994</b> | <b>\$ 7,689</b> | <b>\$ 8,352</b> | <b>\$ 8,136</b> | <b>\$ 8,308</b> | <b>\$ 8,577</b> | <b>\$ 9,060</b> | <b>\$ 9,872</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 741          | \$ 97         | \$ 102        | \$ 104        | \$ 106        | \$ 108        | \$ 111        | \$ 113        |
| Materials        | \$ 1,444        | \$ 189        | \$ 198        | \$ 203        | \$ 207        | \$ 211        | \$ 216        | \$ 220        |
| Other O&M        | \$ 9            | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ 1          |
| <b>Total</b>     | <b>\$ 2,194</b> | <b>\$ 287</b> | <b>\$ 301</b> | <b>\$ 308</b> | <b>\$ 314</b> | <b>\$ 321</b> | <b>\$ 328</b> | <b>\$ 335</b> |

## NYSEG - Street Light

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0022-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program provides new overhead street and area lighting and replaces damaged lighting facilities. This program also includes the conversion of existing lighting to LED lighting to those municipalities that request this change.

#### Project Scope:

The scope includes lights that are fed from overhead and underground, secondary and service wire work, poles and light heads and civil work for bases and conduit and miscellaneous hardware. In addition, the LED conversion capital program for municipalities ended in 12/2024; therefore, the 2025 conversion work is planned in this program.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

LED (estimated units = 5,040) \$342/unit\*

Street Light (estimated units = 120) \$254/unit\*

Area/ODL (estimated units = 92) \$295/unit\*

Hourly Street Light Emergent Work (estimated units = 4,820) \$209.81/unit\* - Begins in 2026

In addition to the above units and average costs, the budget includes \$320K for miscellaneous items.

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rates.

#### Project Benefits:

This program creates safe and inviting areas throughout the communities we serve. The conversion to LED lighting will also increase energy efficiency. NYSEG is tariff mandated to replace/repair lights within three business days

#### Project Risks and Mitigation Plan:

Program managers works with each customer/municipality conduct assessment of in service plant, reviews needs with the customer and develop alternatives where possible to select the most feasible repair/replace designs. Temporary repairs made by the workforce are sent to engineering to follow-up to ensure permanent repairs are made to current construction standards and adherence to industry codes.

#### Risk of No Action:

This program is customer facing. NYSEG has a service obligation to execute this work. Delayed or non-execution of street light installations could result in fines, penalties, and reputation damages.

#### Project Alternatives:

The company responds to customer needs, replacement is like-for-like.

#### Basis for Project Estimates

The budget for this program is based on 3 years average actual costs.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024          |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|--|--|
| # AFUDC                | \$ 143          | \$ 24           | \$ 24           | \$ 57           | \$ 25           | \$ 12         |  |  |
| # CIAC                 | \$ -53          | \$ -10          | \$ -5           | \$ -4           | \$ -17          | \$ -16        |  |  |
| # External Services    | \$ 3,771        | \$ 2,026        | \$ 845          | \$ 595          | \$ 199          | \$ 105        |  |  |
| # Internal - Non-AC    | \$ -0           | \$ 0            | \$ -            | \$ -            | \$ -            | \$ -0         |  |  |
| # Internal, Labor      | \$ 974          | \$ 211          | \$ 184          | \$ 170          | \$ 215          | \$ 194        |  |  |
| # Internal, Overheads  | \$ 1,038        | \$ 303          | \$ 307          | \$ 172          | \$ 140          | \$ 116        |  |  |
| # Materials            | \$ 2,224        | \$ 323          | \$ 727          | \$ 346          | \$ 447          | \$ 381        |  |  |
| # Overheads - External | \$ 1,501        | \$ 381          | \$ 398          | \$ 278          | \$ 246          | \$ 200        |  |  |
| <b>Total</b>           | <b>\$ 9,598</b> | <b>\$ 3,258</b> | <b>\$ 2,480</b> | <b>\$ 1,614</b> | <b>\$ 1,254</b> | <b>\$ 992</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2020         | 2021         | 2022         | 2023         | 2024          |  |  |
|------------------|---------------|--------------|--------------|--------------|--------------|---------------|--|--|
| Outside Services | \$ 116        | \$ 3         | \$ 4         | \$ 15        | \$ 1         | \$ 93         |  |  |
| Materials        | \$ 291        | \$ 28        | \$ 46        | \$ 83        | \$ 54        | \$ 79         |  |  |
| Other O&M        | \$ 10         | \$ 0         | \$ 9         | \$ -         | \$ -         | \$ 0          |  |  |
| <b>Total</b>     | <b>\$ 417</b> | <b>\$ 31</b> | <b>\$ 59</b> | <b>\$ 99</b> | <b>\$ 55</b> | <b>\$ 173</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 208           | \$ 30           | \$ 27           | \$ 28           | \$ 29           | \$ 30           | \$ 31           | \$ 32           |
| # CIAC                 | \$ -212          | \$ -30          | \$ -30          | \$ -30          | \$ -30          | \$ -30          | \$ -31          | \$ -31          |
| # External Services    | \$ 6,908         | \$ 925          | \$ 925          | \$ 953          | \$ 981          | \$ 1,011        | \$ 1,041        | \$ 1,072        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 2,396         | \$ 321          | \$ 321          | \$ 330          | \$ 340          | \$ 351          | \$ 361          | \$ 372          |
| # Internal, Overheads  | \$ 1,381         | \$ 202          | \$ 219          | \$ 178          | \$ 172          | \$ 174          | \$ 194          | \$ 243          |
| # Materials            | \$ 6,402         | \$ 857          | \$ 857          | \$ 883          | \$ 909          | \$ 937          | \$ 965          | \$ 994          |
| # Overheads - External | \$ 1,777         | \$ 244          | \$ 285          | \$ 231          | \$ 223          | \$ 226          | \$ 252          | \$ 316          |
| <b>Total</b>           | <b>\$ 18,861</b> | <b>\$ 2,550</b> | <b>\$ 2,604</b> | <b>\$ 2,574</b> | <b>\$ 2,625</b> | <b>\$ 2,697</b> | <b>\$ 2,813</b> | <b>\$ 2,998</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 1,219        | \$ 159        | \$ 167        | \$ 171        | \$ 175        | \$ 178        | \$ 182        | \$ 186        |
| Materials        | \$ 3,057        | \$ 400        | \$ 420        | \$ 429        | \$ 438        | \$ 447        | \$ 457        | \$ 466        |
| Other O&M        | \$ 104          | \$ 14         | \$ 14         | \$ 15         | \$ 15         | \$ 15         | \$ 15         | \$ 16         |
| <b>Total</b>     | <b>\$ 4,380</b> | <b>\$ 573</b> | <b>\$ 602</b> | <b>\$ 615</b> | <b>\$ 628</b> | <b>\$ 641</b> | <b>\$ 654</b> | <b>\$ 668</b> |



## NYSEG - Gov't Highway

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                        | <b>Project ID:</b><br>UI-N0012-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program encompasses the relocation of electric overhead and underground facilities that are in conflict with mandated highway/road/bridge rehabilitation projects initiated by the State of New York and the municipalities within the NYSEG service territory.

#### Project Scope:

Each State or Municipal initiated project is evaluated based on plans provided to the utilities. NYSEG determines any conflicts between NYSEG facilities and the State/Municipality proposed areas of work. The resulting relocation/replacement/removal work for NYSEG is then estimated on a project by project basis. If estimates are known at the time of the annual budget planning process, those costs will be used as the basis for the planned funding, but typically, the cost of this program is based on the historical average NYSEG expends per year, or a combination of both historical and estimated known projects. The work resulting from these State and Municipal improvement projects ranges from single pole relocations to large-scale removal/re-establishment of NYSEG conduit systems.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 488) \$4,989/unit\*

Transformers (estimated units = 4) \$4,019/unit\*

Overhead Conductor (Wire) ft - (estimated ft = 4,384) \$8/ft\*

Underground Conductor (Cable) ft - (estimated ft = 459) \$59/ft\*

In addition to the above units and average costs, the budget includes \$242K for miscellaneous items.

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rates.

#### Project Benefits:

The objective of State/Municipal highway/bridge improvement projects is to maintain/improve public safety. This program is mandated to provide relocation service requested by State and Municipal customers. If this program is not pursued, the companies would be subject to fines and penalties for being unresponsive to State and Municipal customers and in violation of its tariff.

#### Project Risks and Mitigation Plan:

The most common risks associated with this work are related to the coordination of utility work in relation to the State/municipality's schedule. Often there are multiple utilities requiring work, and delays are often encountered. To mitigate the schedule risks, utility work schedules are provided to the State/Municipalities by all utilities prior to the start of any work. The utility work schedules outline the utility's work schedule and assumptions that the schedule was based upon, including how/when delays may occur and any contingency time that would be required.

#### Risk of No Action:

The utilities are obligated/mandated to relocate their facilities that are in direct conflict with the State/Municipal project limits. This work is necessary to insure the public safety and no action is not permissible.

**Project Alternatives:**

The nature of State/Municipal highway and bridge relocation/rehabilitation projects is such that there are geographical project limits that define the scope of the work required. In most cases, the work that is required by the utilities is a like-for-like relocation of any facilities that are in direct conflict within the geographical area. Situations do arise where work must be performed by the utilities adjacent to or outside of the immediate geographical area in order for the utility to maintain the operational integrity of its system. This work is still considered mandatory and required.

**Basis for Project Estimates**

The expenditures and volume of work in this program are driven by State/Municipal needs and schedules. If project estimates are known at the time of the annual budget planning process, those costs will be used as the basis for the planned funding, but typically, the cost of this program is based on the 3-year historical average, or a combination of both historical and estimated known projects.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 168           | \$ 21           | \$ 38           | \$ 39           | \$ 45           | \$ 26           |  |  |
| # CIAC                 | \$ -437          | \$ -10          | \$ -39          | \$ -22          | \$ -162         | \$ -204         |  |  |
| # External Services    | \$ 4,425         | \$ 983          | \$ 1,244        | \$ 914          | \$ 769          | \$ 516          |  |  |
| # Internal - Non-AC    | \$ 0             | \$ 0            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 2,067         | \$ 434          | \$ 316          | \$ 476          | \$ 448          | \$ 394          |  |  |
| # Internal, Overheads  | \$ 1,145         | \$ 204          | \$ 291          | \$ 248          | \$ 210          | \$ 192          |  |  |
| # Materials            | \$ 1,637         | \$ 276          | \$ 299          | \$ 382          | \$ 347          | \$ 332          |  |  |
| # Overheads - External | \$ 1,993         | \$ 305          | \$ 442          | \$ 442          | \$ 438          | \$ 366          |  |  |
| <b>Total</b>           | <b>\$ 10,998</b> | <b>\$ 2,212</b> | <b>\$ 2,592</b> | <b>\$ 2,478</b> | <b>\$ 2,093</b> | <b>\$ 1,622</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total         | 2020         | 2021         | 2022         | 2023         | 2024         |  |  |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--|--|
| Outside Services | \$ 183        | \$ 41        | \$ 76        | \$ 34        | \$ 14        | \$ 18        |  |  |
| Materials        | \$ 54         | \$ 9         | \$ 11        | \$ 12        | \$ 9         | \$ 12        |  |  |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| <b>Total</b>     | <b>\$ 237</b> | <b>\$ 49</b> | <b>\$ 88</b> | <b>\$ 46</b> | <b>\$ 24</b> | <b>\$ 30</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 279           | \$ 41           | \$ 34           | \$ 38           | \$ 40           | \$ 41           | \$ 42           | \$ 43           |
| # CIAC                 | \$ -531          | \$ -72          | \$ -75          | \$ -75          | \$ -76          | \$ -77          | \$ -78          | \$ -78          |
| # External Services    | \$ 12,384        | \$ 1,615        | \$ 1,665        | \$ 1,715        | \$ 1,766        | \$ 1,819        | \$ 1,874        | \$ 1,930        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 4,059         | \$ 529          | \$ 546          | \$ 562          | \$ 579          | \$ 596          | \$ 614          | \$ 633          |
| # Internal, Overheads  | \$ 1,820         | \$ 259          | \$ 290          | \$ 235          | \$ 227          | \$ 230          | \$ 257          | \$ 322          |
| # Materials            | \$ 4,903         | \$ 639          | \$ 659          | \$ 679          | \$ 699          | \$ 720          | \$ 742          | \$ 764          |
| # Overheads - External | \$ 2,560         | \$ 343          | \$ 412          | \$ 334          | \$ 323          | \$ 326          | \$ 365          | \$ 457          |
| <b>Total</b>           | <b>\$ 25,473</b> | <b>\$ 3,355</b> | <b>\$ 3,530</b> | <b>\$ 3,488</b> | <b>\$ 3,558</b> | <b>\$ 3,656</b> | <b>\$ 3,816</b> | <b>\$ 4,071</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total         | 2025         | 2026         | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 178        | \$ 23        | \$ 24        | \$ 25        | \$ 26        | \$ 26        | \$ 27        | \$ 27        |
| Materials        | \$ 52         | \$ 7         | \$ 7         | \$ 7         | \$ 7         | \$ 8         | \$ 8         | \$ 8         |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 230</b> | <b>\$ 30</b> | <b>\$ 32</b> | <b>\$ 32</b> | <b>\$ 33</b> | <b>\$ 34</b> | <b>\$ 34</b> | <b>\$ 35</b> |

## NYSEG CAPEX EL Meters

### PROJECT INFORMATION

|                                           |                                             |                                                |                                                 |                                        |
|-------------------------------------------|---------------------------------------------|------------------------------------------------|-------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>UI-N3086-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                   | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Dollars budgeted for the purchase and installation of electric meters, metering transformers, and metering equipment to replace existing, aged meters and equipment as they are removed from service as well as for new installations.

#### Project Scope:

Dollars budgeted for the purchase and installation of electric meters, metering transformers, and metering equipment, to replace existing, aged meters as they are removed from service as well as for new installations. Budgets are based of previous years' actuals and increases in material costs.

AMI meters are not included in the 2025 scope of this program because they are being covered under the AMI Project.

In 2026, after the conclusion of the AMI Project, this program will assume the CapEx costs of AMI meters which will have a significantly higher material cost compared to legacy meters.

#### Project Benefits:

Required by 16 NYCRR Part 92 and Tariff (PSC 19- 4 (Metering and Billing) for new meters and replacement programs. Revenue meters are necessary to record electric usage and recoup operational costs provided to our customers. This project also replaces any existing meters that do not meet PSC accuracy guidelines.

#### Project Risks and Mitigation Plan:

Material lead times - Ensure orders are placed 1 year in advance / work with multiple suppliers.

Large meter group failure - perform in-house first article testing and review/

#### Risk of No Action:

Loss of revenue due to lack of meter inventory or inaccurate revenue metering equipment.

#### Project Alternatives:

None - it is mandatory for us to install and replace customer meters as necessary.

#### Basis for Project Estimates

Previous years actuals, annual inflation, new customer popuation, increased meter costs due to Smart Meter Technology

2026 - 2031 forecasts based on annual inflation of 3%. In addition, a larger increase from 2025 to 2026 is based on the cost increase from legacy meters to AMI meters as a result of the NY AMI Project (Legacy Meter Cost \$36.49 / AMI Meter Cost \$124.41 --- 29% increase). We also anticipate 2% of opt out customers opting back into AMI in 2026. This cost although a result of AMI will be assumed by this budget.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 1             | \$ -            | \$ -            | \$ -            | \$ 1            | \$ 0            |  |  |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Overheads  | \$ 7,285         | \$ 1,821        | \$ 1,253        | \$ 1,492        | \$ 1,741        | \$ 977          |  |  |
| # Materials            | \$ 5,759         | \$ 978          | \$ 1,067        | \$ 1,423        | \$ 1,467        | \$ 823          |  |  |
| # Overheads - External | \$ 103           | \$ 43           | \$ 30           | \$ 14           | \$ 8            | \$ 9            |  |  |
| <b>Total</b>           | <b>\$ 13,148</b> | <b>\$ 2,842</b> | <b>\$ 2,351</b> | <b>\$ 2,929</b> | <b>\$ 3,217</b> | <b>\$ 1,809</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 12,141        | \$ 1,452        | \$ 1,647        | \$ 1,697        | \$ 1,756        | \$ 1,808        | \$ 1,863        | \$ 1,918        |
| # Materials            | \$ 11,195        | \$ 1,344        | \$ 1,518        | \$ 1,564        | \$ 1,618        | \$ 1,667        | \$ 1,717        | \$ 1,768        |
| # Overheads - External | \$ 149           | \$ 16           | \$ 21           | \$ 21           | \$ 22           | \$ 23           | \$ 23           | \$ 24           |
| <b>Total</b>           | <b>\$ 23,485</b> | <b>\$ 2,812</b> | <b>\$ 3,186</b> | <b>\$ 3,281</b> | <b>\$ 3,396</b> | <b>\$ 3,497</b> | <b>\$ 3,602</b> | <b>\$ 3,710</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Community Distributed Generation Billing Program

### PROJECT INFORMATION

|                                           |                                             |                                              |                                                 |                                        |
|-------------------------------------------|---------------------------------------------|----------------------------------------------|-------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-006447            | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>Ongoing                   | <b>In-Service Date:</b><br>Ongoing     |

**Project description:**

This program covers software enhancements and new functionality related to Distributed Generation Billing requirements. This functionality is a regulatory compliance requirement.

**Project Scope:**

The scope of work under this program would be necessary software upgrades and implementation of new functionality to our billing system to comply with any community distributed generation (CDG) billing regulations that are not covered under a separate project.

**Project Benefits:**

Regulatory compliance requirement.

Risks of not doing this work include penalties and non-compliance.

**Project Risks and Mitigation Plan:**

Not applicable at this time. Will update as regulatory needs arise

**Risk of No Action:**

Risk of not complying with future distributed generation billing requirements that become mandated would be penalties and NRAs.

**Project Alternatives:**

Not applicable at this time. Will update as regulatory needs arise

**Basis for Project Estimates**

Estimated Cost based on historical projects with similar development. Four percent interest factor added for 2027 and beyond.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026 | 2027     | 2028     | 2029     | 2030     | 2031     |
|------------------------|-----------------|------|------|----------|----------|----------|----------|----------|
| # AFUDC                | \$ 173          | \$ - | \$ - | \$ 32    | \$ 33    | \$ 35    | \$ 36    | \$ 37    |
| # CIAC                 | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # External Services    | \$ 3,954        | \$ - | \$ - | \$ 730   | \$ 759   | \$ 790   | \$ 821   | \$ 854   |
| # Internal - Non-AC    | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Internal, Labor      | \$ 1,826        | \$ - | \$ - | \$ 337   | \$ 351   | \$ 365   | \$ 379   | \$ 394   |
| # Internal, Overheads  | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Materials            | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Overheads - External | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| <b>Total</b>           | <b>\$ 5,954</b> | \$ - | \$ - | \$ 1,099 | \$ 1,143 | \$ 1,189 | \$ 1,237 | \$ 1,286 |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Community Distributed Generation Billing Phase II

### PROJECT INFORMATION

|                                           |                                             |                                                |                                                 |                                    |
|-------------------------------------------|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005288            | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Jul-2024                  | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This project covers software enhancements to the billing system and new functionality related to Distributed Generation Billing requirements. This functionality is a regulatory compliance requirement mandated by NY Public Service Commission issued and approved orders as well as pending filings. The project will begin in June 2024 and be completed by December 2026.

#### Project Scope:

The below three deliverable releases are included in a System Integrator package for CDG (Community Distributed Billing) Phase 2:

- A. DG Bill 01-CDG VS (Value Stack) Billing Automation Project - Phase 2-Deferred.
- B. DG Bill 02-Volumetric Net Crediting, including Volumetric Unresolved (11) Production Issues.
- C. DG Bill 03 - Value Stack Multiple Net Crediting Savings Rate.

The NY Community Distributed Generation (CDG) Billing Automation Phase 2 implementation is very complex and will need to ensure CDG functionality is implemented effectively/efficiently within regulatory deadlines. System changes must conform with NY Regulation, including but not limited to NYSEG and RG&E tariffs as well as NY Public Service Commission issued Orders. System enhancements and requirements are included in the attached Scope of Project attached document.

#### Project Benefits:

Regulatory compliance requirement. Approved Order for multiple CDG savings rates was filed only under Case 21-E-0629 (Solar Roadmap). Order for Volumetric Net Crediting was filed only under Case 19-M-0463 (Consolidated Billing).

It is vital that CDG automation enhancements and technical initiatives are completed as they address a critical business need. NYSEG and RG&E's current processes require a team of 60+ internal and external resources to issue bills to ~55K Community Distributed Generation (CDG) customers costing approximately \$500K monthly in O&M expenses. Once implemented, continued automation will positively impact the companies' service level, customer complaints, negative revenue adjustments (NRA's), and customer satisfaction priority targets.

Risks of not doing this work include penalties and non-compliance. The Commission (DPS) is currently working with utilities to establish CDG billing and crediting metrics that will be tied to an NRA's. Automation will position the Companies better to meet any imposed metrics. Additionally, failure to complete the project would also result in a loss of the investment already made to automation. Completing these projects will put us in a better position to bill CDG satellites correctly and timely, which will prevent JP \$10 customer bill credits. It will also strengthen our performance to help avoid NRAs that will be ordered soon for CDG Billing and Crediting Metrics (NY risk = \$17M).

#### Project Risks and Mitigation Plan:

Any delays in project scheduling due to defects, miss milestones, and scope creep. Mitigation: Risks not meeting project milestones and quality of services have strong SLAs and penalty charge 10% including service warranty.

Potential Staffing Resource Concerns: Statewide Solar For All, Renewables Energy Access, and Community Help (REACH), Value Stack CDG Billing Conversion, and other Regulatory projects planned during same time that may require same internal business and IT resources with the business and system knowledge and expertise. Need adequate staffing to support project and operational needs simultaneously. Risk can be mitigated by adding temporary external resources to perform project deliverables and address resource constraints. Resource Allocation and adjustment to secure internal resources.

Delays with NY PSC commission order/decisions or new order passed during project lifecycle – Potential Mitigation: Project will monitor/work closely with Rates and Regulatory and NY PSC to communicate any future approved orders that may impact project timeline and deliverables.

Unavailability of Avangrid System landscapes. Mitigation – Notification and detailed plans for all planned system downtimes throughout the project duration to plan for project activities. New Quality Landscape Environment created for CDG Phase 2 Project work.

Potential Budget Variances due to unforeseen project delays that may incur additional costs. Mitigation - will closely monitor project activities, risk assessment, and progress to take measures to prevent delays and cost overruns.

**Risk of No Action:**

Risks of no action for NYSEG and RG&E includes penalties and non-compliance with commission mandated regulatory orders for multiple savings rate and approved order on 12/20/2024 for Volumetric Net Crediting Order filing under case 19-M-0463 (Consolidated Billing).

**Project Alternatives:**

For all risks that may become a reality with any project deliverables and timelines. The contingency plan is to review and escalate jointly with system integrator and efforts will be handled through mutually agreed Change Control Process.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources such as SWF (Software Factory), and a system integrator considered for appropriate project support costs. These estimates are derived from multiple sources, including historical man-hour data, resource allocation pricing quotes from suppliers for necessary services, and corresponding cost estimates from similar projects within NYSEG and RG&E. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, as more detailed information becomes available.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023        | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|--|--|
| # AFUDC                | \$ 16           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 16           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # External Services    | \$ 1,899        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,899        |  |  |
| # Internal - Non-AC    | \$ 59           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 59           |  |  |
| # Internal, Labor      | \$ 29           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 29           |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 2,003</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2,003</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

[illegible]

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 273          | \$ 78           | \$ 195          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,992        | \$ 2,290        | \$ 702          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 812          | \$ 488          | \$ 324          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,077</b> | <b>\$ 2,856</b> | <b>\$ 1,221</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG Customer Cost Allocation Program (CCAP)

### PROJECT INFORMATION

|                                                  |                                             |                                              |                                         |                                    |
|--------------------------------------------------|---------------------------------------------|----------------------------------------------|-----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-006431            | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Balch, Bruce | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>Ongoing           | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This Customer Cost Allocation Program (CCAP) allows the company to support customers with Contributions in Aid of Construction (CIAC) costs and addresses emergent capacity constraints to support new business growth across NYSEG's territory.

When new large customer loads seek to interconnect to NYSEG's system, they are studied to determine whether they create any reliability violations. Generally, when a customer causes a reliability violation, they have full cost responsibility for system upgrades to mitigate the violations. However, in some cases it is appropriate for NYSEG to have partial cost responsibility for these upgrades, and this program establishes this fund.

An example may be if a large customer causes an existing transformer to become overloaded. Since the customer is large, NYSEG's forecasted load growth may not have identified this transformer as needing replacement or it may be a lower priority than more urgent projects. However, this customer is not the only customer supplied by this transformer, and if they pay for a larger transformer, they may be creating system capacity above what they need. With funds from the CCAP, NYSEG could fund a transformer that is deliberately sized to support projected future load growth while collecting an appropriate CIAC from the customer.

The main goal of the project is to address capacity constraints at substations or circuits due to increased electrification and load interconnection requests in excess of forecasted load growth. This project is needed to ensure the reliability and safety of the electric grid by addressing infrastructure needs that restrict capacity.

There is urgency towards funding this program due to a recent surge in large load interconnection requests. Electrification initiatives require significant system upgrades that are currently not fully funded. Without dedicated funding, utilities struggle to adapt long-term plans in response to short-term growth in excess of forecasted load. This leads to potential service disruptions, safety hazards, and increased costs.

#### Project Scope:

By design, this is a reactive program, which means it is impractical to anticipate the exact scope that will be required. The program will develop a fund for emerging CIAC projects to support new business growth and ensure grid reliability and security. The proposal outlines a funding plan, with cost estimates, for emerging CIAC projects from 2026 to 2031 based on historical requests. This structured approach ensures that utilities have the financial resources they need to address urgent infrastructure needs quickly and efficiently.

#### Project Benefits:

The proposal offers three key benefits:

- (1) Financial Stability: Establishing a dedicated fund for emergent CIAC projects helps secure the necessary financial resources without having to pull funding from an in-execution project. This improves efficiency, reduces schedule delays, and mitigates financial risk.
- (2) Grid Reliability and Agility: Emergent CIAC projects are essential for maintaining the reliability of the electric grid. By establishing this CCAP, NYSEG will be able to address urgent reliability needs that were impractical to predict. By addressing infrastructure needs that restrict capacity, these projects help prevent service disruptions, safety hazards, increased costs, and thereby result in safeguarding the electric grid.
- (3) Support for New Business Growth: New business growth (small and large) will benefit directly from the CCAP. Without CCAP, higher costs may become the responsibility of the developer, which may suppress economic development.

#### Project Risks and Mitigation Plan:

Without CCAP funding, it may be necessary to re-prioritize in-execution projects, potentially delaying or canceling some urgent infrastructure upgrades. This could result in larger portions of the system experiencing capacity constraints, as the existing infrastructure would be unable to support additional load demands.

The costs for economic growth in constrained regions may become prohibitive, as customers will bear the responsibility for a larger portion of upgrade costs.

**Risk of No Action:**

If no action is taken, several significant risks could arise:

- (1) Customer impact: Without the necessary funding for infrastructure upgrades, utilities may not be able to accommodate new load interconnection requests. This could lead to delays or high costs to support connection requests, frustrating customers who are eager to electrify their homes or businesses. As a result, the number of complaints about lack of access to electricity could increase.
- (2) Financial Instability: Utilities may face substantial financial risks if emergent CIAC projects are not funded. The lack of a clear mechanism for cost recovery could lead to cash flow issues and credit metric pressures, jeopardizing the financial stability. This could also impact their credit ratings and access to capital markets. If funding must be redirected from other projects, this reduced efficiency will result in higher costs for those project, which reduces the total amount of work the utility can complete.
- (3) Operational Performance: Operating electrical equipment beyond its specified limitations due to capacity constraints can lead to equipment failure, reduced lifespan of utility facilities, and degradation of service reliability. This could result in increased maintenance costs and potential load-shedding events.

**Project Alternatives:**

The main alternative to the CCAP would be to wait until an applicable load request is received, and request funding for the specific scope of work to support this project at the next opportunity (whether it is a future rate case, proactive planning proceeding, or other funding opportunity). This would greatly extend the timeline for developers to understand their costs and will almost certainly suppress economic development in constrained regions.

**Basis for Project Estimates**

The basis for the funding amount was developed by analyzing historical data from previous CIAC projects carried out between 2022 and 2024. This analysis included the cost estimates and the number of projects completed by NYSEG during this period.

To determine the average cost per project, the average value of CIAC projects was calculated by considering that 50% of the historical projects would require company funding. This value was then divided by the number of projects within the same period. Additionally, the dollar amounts for the years 2022 and 2023 were adjusted for inflation to reflect their 2024 value, ensuring that the estimates are current and account for changes in the economic environment.

For future projections, the proposal for the years 2026 to 2031 was based on the historical average cost per project. An annual increase cost of 5% per year was considered from 2026 onwards to account for inflation. The number of projects for NYSEG was assumed to remain constant from 2026 to 2031, with 5 projects per year.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025        | 2026            | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|-------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 2,632          | \$ -        | \$ 88           | \$ 289           | \$ 503           | \$ 556           | \$ 583           | \$ 613           |
| # CIAC                 | \$ -              | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 139,473        | \$ -        | \$ 4,680        | \$ 15,311        | \$ 26,645        | \$ 29,449        | \$ 30,921        | \$ 32,467        |
| # Internal - Non-AC    | \$ -              | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ -              | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ 18,283         | \$ -        | \$ 755          | \$ 1,949         | \$ 3,180         | \$ 3,448         | \$ 3,929         | \$ 5,022         |
| # Materials            | \$ 86,842         | \$ -        | \$ 2,914        | \$ 9,533         | \$ 16,591        | \$ 18,336        | \$ 19,253        | \$ 20,215        |
| # Overheads - External | \$ 17,847         | \$ -        | \$ 737          | \$ 1,902         | \$ 3,104         | \$ 3,366         | \$ 3,835         | \$ 4,902         |
| <b>Total</b>           | <b>\$ 265,077</b> | <b>\$ -</b> | <b>\$ 9,176</b> | <b>\$ 28,983</b> | <b>\$ 50,022</b> | <b>\$ 55,155</b> | <b>\$ 58,522</b> | <b>\$ 63,220</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG - Storms Electric

### PROJECT INFORMATION

|                                                           |                                             |                                                |                                           |                                       |
|-----------------------------------------------------------|---------------------------------------------|------------------------------------------------|-------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>UI-NS000-NYSEG-ED     | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Potter, George | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Storms                           | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>1/1/2026            | <b>In-Service Date:</b><br>12/31/2026 |

**Project description:**

Storm Electric blanket for distribution and/or transmission broken pole and/or conductor replacement during a qualifying storm event.

**Project Scope:**

Division T&D Program pertains to various customer driven and growth/reliability work in each of the NYSEG Operating Areas. Project totals tied to these blankets are below the Major Project threshold of \$200K.

**Project Benefits:**

Storm Electric blanket for distribution and/or transmission broken pole and/or conductor replacement during a qualifying storm event.

**Project Risks and Mitigation Plan:**

This is a reactive program subject to weather related incidents and expanded storm restoration activities.

|                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Risk of No Action:</b><br>Failure to fund and execute storm related repairs would lead to regulatory review with the state of New York and poor customer satisfaction ratings |
| <b>Project Alternatives:</b><br>N/A                                                                                                                                              |
| <b>Basis for Project Estimates</b><br>Based on 3 years of historical data                                                                                                        |

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2021             | 2022             | 2023             | 2024             | 2025             |  |  |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 1,115         | \$ 124           | \$ 163           | \$ 23            | \$ 395           | \$ 409           |  |  |
| # CIAC                 | \$ -625          | \$ -130          | \$ -48           | \$ -116          | \$ -160          | \$ -172          |  |  |
| # External Services    | \$ 59,533        | \$ 15,261        | \$ 6,846         | \$ 12,110        | \$ 14,226        | \$ 11,090        |  |  |
| # Internal - Non-AC    | \$ -             | \$ -             | \$ 3,591         | \$ -3,591        | \$ -             | \$ -             |  |  |
| # Internal, Labor      | \$ 898           | \$ 138           | \$ 110           | \$ 148           | \$ 288           | \$ 213           |  |  |
| # Internal, Overheads  | \$ 7,286         | \$ 1,033         | \$ 611           | \$ 1,476         | \$ 2,398         | \$ 1,767         |  |  |
| # Materials            | \$ 4,620         | \$ 436           | \$ 386           | \$ 867           | \$ 2,041         | \$ 891           |  |  |
| # Overheads - External | \$ 10,560        | \$ 1,443         | \$ 885           | \$ 2,594         | \$ 3,423         | \$ 2,214         |  |  |
| <b>Total</b>           | <b>\$ 83,387</b> | <b>\$ 18,306</b> | <b>\$ 12,544</b> | <b>\$ 13,512</b> | <b>\$ 22,612</b> | <b>\$ 16,413</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total            | 2026             | 2027             | 2028             | 2029             | 2030             |             |             |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------|-------------|
| # AFUDC                | \$ 970           | \$ 194           | \$ 194           | \$ 194           | \$ 194           | \$ 194           |             |             |
| # CIAC                 | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |             |             |
| # External Services    | \$ 55,302        | \$ 11,060        | \$ 11,060        | \$ 11,060        | \$ 11,060        | \$ 11,060        |             |             |
| # Internal - Non-AC    | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |             |             |
| # Internal, Labor      | \$ 910           | \$ 182           | \$ 182           | \$ 182           | \$ 182           | \$ 182           |             |             |
| # Internal, Overheads  | \$ 7,477         | \$ 1,495         | \$ 1,495         | \$ 1,495         | \$ 1,495         | \$ 1,495         |             |             |
| # Materials            | \$ 5,489         | \$ 1,098         | \$ 1,098         | \$ 1,098         | \$ 1,098         | \$ 1,098         |             |             |
| # Overheads - External | \$ 11,504        | \$ 2,301         | \$ 2,301         | \$ 2,301         | \$ 2,301         | \$ 2,301         |             |             |
| <b>Total</b>           | <b>\$ 81,652</b> | <b>\$ 16,330</b> | <b>\$ 16,330</b> | <b>\$ 16,330</b> | <b>\$ 16,330</b> | <b>\$ 16,330</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |



# **RG&E Electric Customer Focus**



## RGE Dist Line

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0028-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Distribution Line Program consists of replacing infrastructure in response to emergency situations which cause interruptions to service such as those initiated by motor vehicle accidents (MVAs). This is an on-going (annual) program which includes all overhead and underground distribution system work for emergency repairs, corrective/reactive work, customer restoration resulting from equipment failures, compliance work to meet company standards of construction, and minor storm work. Types of work include, but are not limited to, pole replacements, National Electric Safety Code (NESC) clearance adjustments, cable faults, miscellaneous equipment failure / damage to the electric system plant. The source of this work originates from customer trouble calls, unplanned outages, emergency response, and damages to electric infrastructure caused by minor storms. Although this program is considered as "reactive," not all work activities are in response to outage situations (i.e., post-customer outages). For example, if NESC clearance violations are identified, this program would be used as the funding source to upgrade those facilities in advance of an outage occurring. These types of work serve to improve system reliability statistics (System Average Interruption Frequency Index "SAIFI" and Customer Average Interruption Duration Index "CAIDI") and reduce outage risks for our customers. This work is considered as a mandatory initiative since it serves to ensure existing customer reliability and quickly restores customer service in the event of an unplanned outage condition.

#### System Needs Summary:

The following section summarizes RGE System SAIFI impacts that were caused by distribution system outages and subsequently addressed by the Distribution Line Program:

- 1) 2020 Impacts: 2,730 unplanned distribution outages, RGE SAIFI Contribution 0.61
- 2) 2021 Impacts: 3,214 unplanned distribution outages, RGE SAIFI Contribution 0.71
- 3) 2022 Impacts: 3,145 unplanned distribution outages, RGE SAIFI Contribution 0.64
- 4) 2023 Impacts: 2,699 unplanned distribution outages, RGE SAIFI Contribution 0.51
- 5) 2024 Impacts: 2,895 unplanned distribution outages, RGE SAIFI Contribution 0.61

#### Project Scope:

This program is mainly intended for unplanned, reactive work on the electric distribution system to repair and replace elements such as damaged conductors, transformers, cross-arms, fuse cutouts, regulators, guy-wire, poles, etc. In addition, this program has historically been used to mitigate outage risks before they occur and can originate from customer trouble calls, NESC clearance violations, etc. Due to the reactive and unknown nature of future work, specific sub-project scoping cannot be provided. However, any failed component on the distribution system would utilize this program funding source to address the identified system need. Execution timelines associated with this type of work are generally short in nature since they are not overly complex and implement an in-kind replacement strategy.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 1,358) \$2,748/unit\*

Transformers (estimated units = 241) \$3,218/unit\*

Overhead Conductor (Wire) Ft - (estimated ft = 5,154) \$43/ft\*

Underground Conductor (Cable) Ft - (estimated ft = 28,892) \$24/ft\*

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031.

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced

This average cost is driven by many factors such as the timing of incident and the type of pole used for replacement (Class 1 vs. Class 2). For example, many incidents occur after normal business hours and the labor component associated with these repairs are inherently greater (i.e., overtime pay). Both internal and contractor crews respond to outages as needed. In consideration of these common off-hour incidents, every effort is made to first make the area safe to the public, and if possible, perform permanent repairs during normal business hours which allows the company to perform the work at a lower cost. However this is not always feasible and repairs are needed immediately.

In addition to the above units and average costs, the budget includes costs not detailed in unit costs/counts of \$3.8M.

**Project Benefits:**

Being able to quickly repair damaged assets is paramount in ensuring public safety and maintaining a reliable distribution system for our customers. The program maintains public safety, addresses imminent issues prior to outages occurring, and helps to ensure that our NY regulatory service targets are achieved on an annual basis.

**Project Risks and Mitigation Plan:**

Inadequate funding, on an annual basis, has been the primary risk associated with this program. Program tracking and monitoring of available budget is continually balanced with remaining/anticipated workload, and in many cases, financial offsets are required from other planned work to fund this mandatory work throughout the year. These offsets create downstream consequences since prioritized work can no longer be executed as planned which can affect any number of factors, mainly system reliability.

**Risk of No Action:**

The consequences of not undertaking this project will lead to system abnormal conditions and unsafe conditions for the public and workforce. Leaving failed equipment, broken poles, failed cable and non-standard construction will have a negative impact on reliability (CAIDI) and lead to legal and regulatory scrutiny. Connecting customers and ensuring reliable service is our fundamental goal; taking no action to restore customers after equipment failure or MVA is not an option. Delayed or non-execution of customer restoration could result in fines, penalties and reputation damage.

**Project Alternatives:**

This program aims to replace outaged equipment using an "in-kind" replacement strategy and therefore project alternatives are not applicable within this program.

**Basis for Project Estimates**

Future annual spending targets are informed by an annual analysis which considers historical itemized component upgrades (poles, transformers, cross-arms, etc.) and overall spending from prior years. Using prior actuals, by component upgrade type, is the basis for future spending projections and a current and justified escalation factor is used to inform each subsequent out-year.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020             | 2021            | 2022             | 2023             | 2024             |  |  |
|------------------------|------------------|------------------|-----------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 2,670         | \$ 221           | \$ 318          | \$ 478           | \$ 741           | \$ 912           |  |  |
| # CIAC                 | \$ -4,603        | \$ -431          | \$ -468         | \$ -1,104        | \$ -908          | \$ -1,693        |  |  |
| # External Services    | \$ 29,817        | \$ 8,442         | \$ 4,479        | \$ 6,484         | \$ 6,448         | \$ 3,963         |  |  |
| # Internal - Non-AC    | \$ 2             | \$ 1             | \$ 0            | \$ 0             | \$ 0             | \$ 0             |  |  |
| # Internal, Labor      | \$ 10,403        | \$ 1,836         | \$ 1,698        | \$ 2,121         | \$ 2,402         | \$ 2,346         |  |  |
| # Internal, Overheads  | \$ 4,160         | \$ 543           | \$ 593          | \$ 799           | \$ 1,007         | \$ 1,218         |  |  |
| # Materials            | \$ 13,739        | \$ 1,443         | \$ 1,315        | \$ 2,037         | \$ 4,506         | \$ 4,439         |  |  |
| # Overheads - External | \$ 12,133        | \$ 1,412         | \$ 1,507        | \$ 2,545         | \$ 3,574         | \$ 3,096         |  |  |
| <b>Total</b>           | <b>\$ 68,322</b> | <b>\$ 13,467</b> | <b>\$ 9,443</b> | <b>\$ 13,362</b> | <b>\$ 17,769</b> | <b>\$ 14,281</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2020          | 2021         | 2022         | 2023          | 2024         |  |  |
|------------------|---------------|---------------|--------------|--------------|---------------|--------------|--|--|
| Outside Services | \$ 531        | \$ 173        | \$ 89        | \$ 54        | \$ 125        | \$ 90        |  |  |
| Materials        | \$ 32         | \$ 8          | \$ 4         | \$ 11        | \$ 6          | \$ 3         |  |  |
| Other O&M        | \$ -          | \$ -          | \$ -         | \$ -         | \$ -          | \$ -         |  |  |
| <b>Total</b>     | <b>\$ 563</b> | <b>\$ 181</b> | <b>\$ 93</b> | <b>\$ 65</b> | <b>\$ 131</b> | <b>\$ 93</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 1,465          | \$ 206           | \$ 184           | \$ 202           | \$ 208           | \$ 215           | \$ 222           | \$ 229           |
| # CIAC                 | \$ -8,296         | \$ -1,113        | \$ -1,168        | \$ -1,179        | \$ -1,191        | \$ -1,203        | \$ -1,215        | \$ -1,227        |
| # External Services    | \$ 54,348         | \$ 4,184         | \$ 7,755         | \$ 7,988         | \$ 8,228         | \$ 8,474         | \$ 8,729         | \$ 8,990         |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 20,566         | \$ 2,642         | \$ 2,771         | \$ 2,854         | \$ 2,940         | \$ 3,028         | \$ 3,119         | \$ 3,212         |
| # Internal, Overheads  | \$ 4,779          | \$ 878           | \$ 796           | \$ 732           | \$ 656           | \$ 573           | \$ 555           | \$ 588           |
| # Materials            | \$ 25,976         | \$ 3,338         | \$ 3,500         | \$ 3,605         | \$ 3,713         | \$ 3,824         | \$ 3,939         | \$ 4,057         |
| # Overheads - External | \$ 11,443         | \$ 1,921         | \$ 1,944         | \$ 1,786         | \$ 1,602         | \$ 1,399         | \$ 1,355         | \$ 1,436         |
| <b>Total</b>           | <b>\$ 110,280</b> | <b>\$ 12,055</b> | <b>\$ 15,783</b> | <b>\$ 15,987</b> | <b>\$ 16,155</b> | <b>\$ 16,310</b> | <b>\$ 16,704</b> | <b>\$ 17,285</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025         | 2026         | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|---------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 673        | \$ 88        | \$ 92        | \$ 94         | \$ 96         | \$ 98         | \$ 101        | \$ 103        |
| Materials        | \$ 40         | \$ 5         | \$ 6         | \$ 6          | \$ 6          | \$ 6          | \$ 6          | \$ 6          |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>     | <b>\$ 714</b> | <b>\$ 93</b> | <b>\$ 98</b> | <b>\$ 100</b> | <b>\$ 102</b> | <b>\$ 104</b> | <b>\$ 107</b> | <b>\$ 109</b> |

## RGE - Gov't Highway Majors CAP

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>PRJ-001579            | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The RGE Government Highway Majors program involves the relocation of electric overhead and underground facilities that conflict with mandated highway, road, and bridge rehabilitation projects. These projects are initiated by the State of New York and various Municipalities within the RGE service territory. The program ensures that essential electric infrastructure is safely and efficiently moved to accommodate public works while maintaining service reliability.

#### Project Scope:

Each State or Municipal initiated project is evaluated based on plans provided to the utilities. RGE identifies any conflicts between its facilities and the proposed areas of work by the State or Municipality. The resulting relocation, replacement, or removal work for RGE is then estimated on a project-by-project basis. If estimates are available during the annual budget planning process, those costs will be used as the basis for planned funding. Typically, the cost of this program is based on the historical average expenditure by RGE per year, or a combination of both historical and estimated known project costs. The scope of work resulting from these State and Municipal improvement projects ranges from single pole relocations to large-scale removal and re-establishment of RGE conduit systems.

#### Project Benefits:

The objective of State and Municipal highway and bridge improvement projects is to maintain and enhance public safety. This program is mandated to provide relocation services as requested by State and Municipal customers. Failure to pursue this program would result in the companies being subject to fines and penalties for unresponsiveness to State and Municipal customers and for violating their tariff obligations.

#### Project Risks and Mitigation Plan:

The most common risks associated with this work involve coordinating utility work with the State or Municipality's schedule. Often, multiple utilities require work, leading to potential delays. To mitigate these scheduling risks, utility work schedules are provided to the State or Municipalities by all utilities before any work begins. These schedules outline the utility's planned work timeline and the assumptions on which the schedule is based, including potential delays and any required contingency time.

#### Risk of No Action:

RGE is obligated and mandated to relocate its facilities that are in direct conflict with State or Municipal project limits. This work is essential to ensure public safety, and inaction is not permissible.

#### Project Alternatives:

State and Municipal highway and bridge relocation or rehabilitation projects have defined geographical limits that outline the scope of required work. Typically, utilities must perform like-for-like relocations of any facilities in direct conflict within these geographical areas. However, there are situations where utilities must also perform work adjacent to or outside the immediate geographical area to maintain the operational integrity of their systems. This work is still considered mandatory and required.

#### Basis for Project Estimates

The expenditures and volume of work in this program are driven by State and Municipal needs and schedules. If project estimates are known at the time of the annual budget planning process, those costs will be used as the basis for planned funding. Typically, however, the cost of this program is based on the historical average expenditure by RGE per year, or a combination of both historical and estimated known project costs.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2020         | 2021         | 2022         | 2023         | 2024         |  |  |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--|--|
| Outside Services | \$ 199        | \$ 38        | \$ 24        | \$ 33        | \$ 28        | \$ 77        |  |  |
| Materials        | \$ 2          | \$ 0         | \$ 0         | \$ 1         | \$ 0         | \$ 1         |  |  |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| <b>Total</b>     | <b>\$ 202</b> | <b>\$ 38</b> | <b>\$ 24</b> | <b>\$ 34</b> | <b>\$ 28</b> | <b>\$ 78</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 393           | \$ 54           | \$ 57           | \$ 57           | \$ 57           | \$ 57           | \$ 57           | \$ 57           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 16,162        | \$ 2,312        | \$ 2,308        | \$ 2,308        | \$ 2,308        | \$ 2,308        | \$ 2,308        | \$ 2,308        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,347         | \$ 193          | \$ 192          | \$ 192          | \$ 192          | \$ 192          | \$ 192          | \$ 192          |
| # Internal, Overheads  | \$ 1,059         | \$ 209          | \$ 185          | \$ 165          | \$ 144          | \$ 122          | \$ 115          | \$ 118          |
| # Materials            | \$ 9,428         | \$ 1,349        | \$ 1,347        | \$ 1,347        | \$ 1,347        | \$ 1,347        | \$ 1,347        | \$ 1,347        |
| # Overheads - External | \$ 2,407         | \$ 454          | \$ 426          | \$ 380          | \$ 331          | \$ 281          | \$ 264          | \$ 271          |
| <b>Total</b>           | <b>\$ 30,796</b> | <b>\$ 4,570</b> | <b>\$ 4,515</b> | <b>\$ 4,449</b> | <b>\$ 4,379</b> | <b>\$ 4,307</b> | <b>\$ 4,283</b> | <b>\$ 4,293</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2025         | 2026         | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 587        | \$ 77        | \$ 81        | \$ 82        | \$ 84        | \$ 86        | \$ 88        | \$ 90        |
| Materials        | \$ 7          | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 594</b> | <b>\$ 78</b> | <b>\$ 82</b> | <b>\$ 83</b> | <b>\$ 85</b> | <b>\$ 87</b> | <b>\$ 89</b> | <b>\$ 91</b> |

## RGE - Gov't HW

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0012-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program encompasses the relocation of electric overhead and underground facilities that are in conflict with mandated highway/road/bridge rehabilitation projects initiated by the State of New York and the municipalities within the RGE service territory.

#### Project Scope:

Each State or Municipal initiated project is evaluated based on plans provided to the utilities. RGE determines any conflicts between RGE facilities and the State/Municipality proposed areas of work. The resulting relocation/replacement/removal work for RGE is then estimated on a project by project basis. If estimates are known at the time of the annual budget planning process, those costs will be used as the basis for the planned funding, but typically, the cost of this program is based on the historical average RGE expends per year, or a combination of both historical and estimated known projects. The work resulting from these State and Municipal improvement projects ranges from single pole relocations to large-scale removal/re-establishment of RGE conduit systems.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 141) \$4,294/unit\*

Transformers (estimated units = 2) \$40,351/unit\*

Overhead Conductor (Wire) ft - (estimated ft = 572) \$80/ft\*

Underground Conductor (Cable) ft - (estimated ft = 288) \$226/ft\*

In addition to the above units and average costs, the budget includes \$832K for miscellaneous items.

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rates.

#### Project Benefits:

The objective of State/Municipal highway/bridge improvement projects is to maintain/improve public safety. This program is mandated to provide relocation service requested by State and Municipal customers. If this program is not pursued, the companies would be subject to fines and penalties for being unresponsive to State and Municipal customers and in violation of its tariff.

#### Project Risks and Mitigation Plan:

The most common risks associated with this work are related to the coordination of utility work in relation to the State/municipality's schedule. Often there are multiple utilities requiring work, and delays are often encountered. To mitigate the schedule risks, utility work schedules are provided to the State/Municipalities by all utilities prior to the start of any work. The utility work schedules outline the utility's work schedule and assumptions that the schedule was based upon, including how/when delays may occur and any contingency time that would be required.

#### Risk of No Action:

The utilities are obligated/mandated to relocate their facilities that are in direct conflict with the State/Municipal project limits. This work is necessary to insure the public safety and no action is not permissible.

#### Project Alternatives:

The nature of State/Municipal highway and bridge relocation/rehabilitation projects is such that there are geographical project limits that define the scope of the work required. In most cases, the work that is required by the utilities is a like-for-like relocation of any facilities that are in direct conflict within the geographical area. Situations do arise where work must be performed by the utilities adjacent to or outside of the immediate geographical area in order for the utility to maintain the operational integrity of its system. This work is still considered mandatory and required.

#### Basis for Project Estimates

The expenditures and volume of work in this program are driven by State/Municipal needs and schedules. If project estimates are known at the time of the annual budget planning process, those costs will be used as the basis for the planned funding, but typically, the cost of this program is based on the 3-year historical average, or a combination of both historical and estimated known projects.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021          | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|---------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 421           | \$ 88           | \$ 85         | \$ 61           | \$ 70           | \$ 117          |  |  |
| # CIAC                 | \$ -243          | \$ -            | \$ -20        | \$ -90          | \$ -70          | \$ -63          |  |  |
| # External Services    | \$ 5,365         | \$ 1,032        | \$ 455        | \$ 929          | \$ 768          | \$ 2,180        |  |  |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 1,172         | \$ 193          | \$ 56         | \$ 223          | \$ 248          | \$ 452          |  |  |
| # Internal, Overheads  | \$ 668           | \$ 123          | \$ 46         | \$ 91           | \$ 106          | \$ 302          |  |  |
| # Materials            | \$ 1,063         | \$ 203          | \$ 101        | \$ 100          | \$ 361          | \$ 297          |  |  |
| # Overheads - External | \$ 1,912         | \$ 279          | \$ 106        | \$ 302          | \$ 394          | \$ 831          |  |  |
| <b>Total</b>           | <b>\$ 10,358</b> | <b>\$ 1,918</b> | <b>\$ 829</b> | <b>\$ 1,616</b> | <b>\$ 1,878</b> | <b>\$ 4,117</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 179           | \$ 24           | \$ 24           | \$ 25           | \$ 26           | \$ 26           | \$ 27           | \$ 28           |
| # CIAC                 | \$ -421          | \$ -58          | \$ -59          | \$ -60          | \$ -60          | \$ -61          | \$ -61          | \$ -62          |
| # External Services    | \$ 9,386         | \$ 1,232        | \$ 1,261        | \$ 1,298        | \$ 1,337        | \$ 1,377        | \$ 1,419        | \$ 1,461        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,534         | \$ 201          | \$ 206          | \$ 212          | \$ 219          | \$ 225          | \$ 232          | \$ 239          |
| # Internal, Overheads  | \$ 548           | \$ 102          | \$ 91           | \$ 84           | \$ 75           | \$ 65           | \$ 63           | \$ 67           |
| # Materials            | \$ 1,637         | \$ 215          | \$ 220          | \$ 226          | \$ 233          | \$ 240          | \$ 247          | \$ 255          |
| # Overheads - External | \$ 1,253         | \$ 217          | \$ 212          | \$ 194          | \$ 174          | \$ 152          | \$ 147          | \$ 156          |
| <b>Total</b>           | <b>\$ 14,117</b> | <b>\$ 1,933</b> | <b>\$ 1,954</b> | <b>\$ 1,980</b> | <b>\$ 2,004</b> | <b>\$ 2,026</b> | <b>\$ 2,075</b> | <b>\$ 2,145</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Make Ready

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>PRJ-001038            | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Make Ready means the administrative, engineering and/or construction activities necessary to make a pole, conduit, or other support equipment available for a new attachment, attachment modifications, or additional facilities. Must follow the pole application process to assure safe, authorized, licensed access from utility owner(s).

The Joint Use Make Ready Program in large part is mandatory work performed as part of a statewide broadband/connect all initiatives. It affects both NYSEG and RG&E. Every project is comprised of work paid directly by the 3rd Party Attacher and work paid by the utility.

The ratio is based on type and location of the proposed work. We manage the work via scalable processes that rely exclusively on contractor resources; however, the work originates entirely from outside the Companies and subject to considerable volatility.

The work started to increase steadily every year. After a brief decline during COVID, a 2022 spike was seen due to venture capital financing. After a record Q1 in 2023, application volume declined in Q2 and continued to decrease further showcasing the extreme volatility.

The volume seen between 2018-2023 is a result of the "NY Broadband for All" initiative which focused on building out broadband in densely populated areas. The Companies have yet to see the impact of the new "Connect ALL" initiative which aims to provide digital equity in rural communities.

Electric Operations has worked with Regulatory and Legal to update the rule making for the cost treatment of the different situations encountered in the field which will decrease our cost exposure in the future and expanded upon the metrics used for measuring the incoming and outgoing work.

Annual attachment requests are inconsistent, and with respect to planning, we are on the receiving end of the process. This exposes RG&E to considerable volatility.

#### Project Scope:

RG&E spend is a direct result of when construction is completed, as-builts are accepted, and an invoice is received, not when applications are initiated. Based on this, RG&E has updated the forecasting methodology using conversion ratios. By examining historically, the amount of construction that converts into ready to pay status both yearly and overall, RG&E is better able to anticipate future spend levels. Attachers do not typically share forecasts years in advance of their build outs.

The following units and average unit costs will be addressed between 2025-2031:

2025

Pole Rearrangement - 1,205 (units) / \$8,626 (unit cost)

Pole Replacement - 1,031 (units) / \$11,367 (unit cost)

2026

Pole Rearrangement - 1,148 (units) / \$8,884 (unit cost)

Pole Replacement - 982 (units) / \$11,708 (unit cost)

2027

Pole Rearrangement - 640 (units) / \$9,151 (unit cost)

Pole Replacement - 547 (units) / \$12,059 (unit cost)

2028

Pole Rearrangement - 621 (units) / \$9,425 (unit cost)

Pole Replacement - 531 (units) / \$12,421 (unit cost)

2029

Pole Rearrangement - 603 (units) / \$9,708 (unit cost)

Pole Replacement - 516 (units) / \$12,794 (unit cost)

2030

Pole Rearrangement - 585 (units) / \$10,000 (unit cost)

Pole Replacement - 501 (units) / \$13,178 (unit cost)

2031

Pole Rearrangement - 568 (units) / \$10,299 (unit cost)

Pole Replacement - 486 (units) / \$13,573 (unit cost)



**Project Benefits:**

Provides an avenue for timely access to distribution pole plant for communications and broadband deployment needs in serving residents of New York State and prevents the Companies from being subject to the significant fines associated with not meeting regulatory targets.

**Project Risks and Mitigation Plan:**

The risks associated with this program are as follows:

- 1) This program and its annual requirements are volume sensitive. Forecasts are volatile and are changed frequently by attachers.
  - 2) Make-ready engineering and construction are external contractors. RG&E coordinates with these entities, but backlog can develop and delays increase.
- RG&E works with attachers and all other entities to ensure that overall broadband expansion plans are not delayed. Work is prioritized and coordinated so that attachers builds are meeting their build timelines.

**Risk of No Action:**

The third party pole attachment application process has compliance timeframes and the Commission could fine NYSEG and/or RG&E \$100K per pole that was refused to be paid for Non-Billable make ready as a violation of the Order and/or 119-a.

Attachers right to bring forth civil suits for recovery of costs/damages.

Attachers could bring claim to regulator in violation of certain Pole Attachment issues.

New York State Public Service Commission (Commission) could bring forth Order to Show Cause and possible penalties.

Commission could require NYSEG & RG&E to take back and complete all Make Ready with its own internal/contracted vendors and meet 45-day construction timelines.

Attachers could go to Media.

Attachers could gain future support from regulators on aggressive rulemaking in favor of Attachers and to the detriment of pole owners.

**Project Alternatives:**

This program aims to replace outage equipment using an "in-kind" replacement strategy.

**Basis for Project Estimates**

CAPEX requirements for this program are volume sensitive and highly volatile. Attachers do not typically share forecasts years in advance of their build outs. The spend and the application volume correlate in that an increase in applications will increase the cost, however, not always in the same calendar year.

The RG&E updated the forecasting methodology using conversion ratios and by examining historically, the amount of construction that converts into ready to pay.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2020        | 2021            | 2022             | 2023             | 2024             |  |  |
|------------------------|-------------------|-------------|-----------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 472            | \$ -        | \$ 3            | \$ -0            | \$ 424           | \$ 45            |  |  |
| # CIAC                 | \$ -3,461         | \$ -        | \$ -13          | \$ -181          | \$ -256          | \$ -3,011        |  |  |
| # External Services    | \$ 101,121        | \$ -        | \$ 7,236        | \$ 39,234        | \$ 32,350        | \$ 22,301        |  |  |
| # Internal - Non-AC    | \$ -              | \$ -        | \$ -            | \$ -             | \$ -             | \$ -             |  |  |
| # Internal, Labor      | \$ 5              | \$ -        | \$ 3            | \$ -             | \$ 0             | \$ 2             |  |  |
| # Internal, Overheads  | \$ 6,879          | \$ -        | \$ 511          | \$ 2,626         | \$ 1,999         | \$ 1,744         |  |  |
| # Materials            | \$ 19             | \$ -        | \$ 3            | \$ -             | \$ 9             | \$ 7             |  |  |
| # Overheads - External | \$ 20,094         | \$ -        | \$ 1,120        | \$ 7,716         | \$ 6,741         | \$ 4,517         |  |  |
| <b>Total</b>           | <b>\$ 125,130</b> | <b>\$ -</b> | <b>\$ 8,863</b> | <b>\$ 49,395</b> | <b>\$ 41,267</b> | <b>\$ 25,605</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 408            | \$ 408           | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # CIAC                 | \$ -17,778        | \$ -2,522        | \$ -2,522        | \$ -2,547        | \$ -2,547        | \$ -2,547        | \$ -2,547        | \$ -2,547        |
| # External Services    | \$ 123,445        | \$ 24,223        | \$ 24,223        | \$ 15,000        | \$ 15,000        | \$ 15,000        | \$ 15,000        | \$ 15,000        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 2              | \$ -             | \$ 2             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ 5,312          | \$ 1,392         | \$ 1,218         | \$ 673           | \$ 586           | \$ 497           | \$ 467           | \$ 480           |
| # Materials            | \$ 2              | \$ 2             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Overheads - External | \$ 10,837         | \$ 2,712         | \$ 2,524         | \$ 1,394         | \$ 1,214         | \$ 1,029         | \$ 968           | \$ 996           |
| <b>Total</b>           | <b>\$ 122,228</b> | <b>\$ 26,215</b> | <b>\$ 25,445</b> | <b>\$ 14,520</b> | <b>\$ 14,253</b> | <b>\$ 13,979</b> | <b>\$ 13,888</b> | <b>\$ 13,929</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE - Res Line

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0016-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program provides distribution line extensions and necessary facilities (poles, transformers, conductors, conduit, hand holes, manholes, etc.) to provide service to both large scale residential development projects and individual residential units or meters.

#### Project Scope:

This is an on-going program for residential overhead and underground new services, underground residential cable repairs, rebuilds, secondary line extension, initial installation of equipment for every subdivision on-going program for residential overhead and underground new services, underground residential cable repairs, rebuilds, secondary line extension, initial installation of equipment for every subdivision (single phase or multiple phases). The scope, designs, estimates and construction is based on customer request that come in throughout the year. This includes new residential service for 3-phase primary overhead or underground, single premise which would be for a multi-unit apartment building with separate metering, requiring a 3-phase transformer. This would include distribution primary system upgrades to serve this new customer. The scope of the construction may include installing new poles, transformers and primary/secondary/service wires. Additionally, the scope would include interconnecting with a neighboring Utility. It could be both billable or non-billable.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 211) \$4,006/unit\*

Transformers (estimated units = 406) \$8,483/unit\*

Overhead Conductor (Wire) Ft - (estimated ft = 901) \$10/ft\*

Underground Conductor (Cable) Ft - (estimated ft = 3,504) \$27/ft\*

Misc Costs -\$96K anchors, arresters, capacitors, cutouts, crossarms, deadend, fuses, insulators, regulators, risers, reclosers, and vaults).

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031.

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

#### Project Benefits:

Project is required for new customers connections. This includes service work for temporary and permanent construction (new, increases, replacements, removals, and demolitions). The work is required to satisfy customer needs to purchase new or additional power for their consumption. NYSEG has an obligation to serve all customers within our franchise area and our policies and procedures are under the regulation of the NY PSC Tariff. .

#### Project Risks and Mitigation Plan:

Inadequate funding, on an annual basis, has been the primary risk associated with this program. Program tracking and monitoring of available budget is continually balanced with remaining/anticipated workload, and in many cases, financial offsets are required from other planned work to fund this mandatory work throughout the year. These offsets create downstream consequences since prioritized work can no longer be executed as planned which can affect any number of factors, mainly system reliability.

#### Risk of No Action:

The Company is required to connect customers requesting service. Delayed or non-execution of customer applications could result in fines, penalties and reputation damages.

#### Project Alternatives:

Each customer application is designed using company standards and adherence to NESC. Alternatives are considered and offered to the customer through the design phase where possible.

#### Basis for Project Estimates

Future annual spending targets are informed by an annual analysis which considers historical itemized component upgrades (poles, transformers, conductor, etc.) and overall spending from prior years. Using prior actuals, by component upgrade type, is the basis for future spending projections and a current and justified escalation factor is used to inform each subsequent out-year.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 616           | \$ 64           | \$ 117          | \$ 163          | \$ 181          | \$ 90           |  |  |
| # CIAC                 | \$ -2,690        | \$ -222         | \$ -543         | \$ -641         | \$ -608         | \$ -676         |  |  |
| # External Services    | \$ 8,502         | \$ 882          | \$ 1,387        | \$ 2,397        | \$ 1,311        | \$ 2,525        |  |  |
| # Internal - Non-AC    | \$ 0             | \$ 0            | \$ -            | \$ -            | \$ 0            | \$ -            |  |  |
| # Internal, Labor      | \$ 2,592         | \$ 277          | \$ 445          | \$ 538          | \$ 772          | \$ 560          |  |  |
| # Internal, Overheads  | \$ 1,701         | \$ 162          | \$ 271          | \$ 322          | \$ 331          | \$ 615          |  |  |
| # Materials            | \$ 6,822         | \$ 669          | \$ 1,162        | \$ 1,108        | \$ 1,845        | \$ 2,039        |  |  |
| # Overheads - External | \$ 4,433         | \$ 340          | \$ 584          | \$ 933          | \$ 1,116        | \$ 1,459        |  |  |
| <b>Total</b>           | <b>\$ 21,976</b> | <b>\$ 2,172</b> | <b>\$ 3,424</b> | <b>\$ 4,820</b> | <b>\$ 4,948</b> | <b>\$ 6,612</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total        | 2020         | 2021         | 2022         | 2023        | 2024         |  |  |
|------------------|--------------|--------------|--------------|--------------|-------------|--------------|--|--|
| Outside Services | \$ 70        | \$ 13        | \$ 24        | \$ 18        | \$ 3        | \$ 12        |  |  |
| Materials        | \$ 1         | \$ 0         | \$ 0         | \$ 0         | \$ 0        | \$ 0         |  |  |
| Other O&M        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -        | \$ -         |  |  |
| <b>Total</b>     | <b>\$ 71</b> | <b>\$ 13</b> | <b>\$ 24</b> | <b>\$ 19</b> | <b>\$ 3</b> | <b>\$ 13</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 518           | \$ 69           | \$ 68           | \$ 71           | \$ 74           | \$ 76           | \$ 78           | \$ 81           |
| # CIAC                 | \$ -4,368        | \$ -594         | \$ -613         | \$ -620         | \$ -626         | \$ -632         | \$ -638         | \$ -645         |
| # External Services    | \$ 21,880        | \$ 2,850        | \$ 2,942        | \$ 3,030        | \$ 3,121        | \$ 3,215        | \$ 3,311        | \$ 3,411        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 4,188         | \$ 546          | \$ 563          | \$ 580          | \$ 597          | \$ 615          | \$ 634          | \$ 653          |
| # Internal, Overheads  | \$ 1,767         | \$ 329          | \$ 293          | \$ 270          | \$ 242          | \$ 211          | \$ 205          | \$ 217          |
| # Materials            | \$ 12,457        | \$ 1,622        | \$ 1,675        | \$ 1,725        | \$ 1,777        | \$ 1,830        | \$ 1,885        | \$ 1,942        |
| # Overheads - External | \$ 3,787         | \$ 652          | \$ 640          | \$ 588          | \$ 527          | \$ 461          | \$ 446          | \$ 473          |
| <b>Total</b>           | <b>\$ 40,228</b> | <b>\$ 5,474</b> | <b>\$ 5,568</b> | <b>\$ 5,645</b> | <b>\$ 5,713</b> | <b>\$ 5,776</b> | <b>\$ 5,921</b> | <b>\$ 6,131</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total        | 2025         | 2026         | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 94        | \$ 12        | \$ 13        | \$ 13        | \$ 14        | \$ 14        | \$ 14        | \$ 14        |
| Materials        | \$ 1         | \$ 0         | \$ 0         | \$ 0         | \$ 0         | \$ 0         | \$ 0         | \$ 0         |
| Other O&M        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 96</b> | <b>\$ 13</b> | <b>\$ 13</b> | <b>\$ 13</b> | <b>\$ 14</b> | <b>\$ 14</b> | <b>\$ 14</b> | <b>\$ 15</b> |

## Town of Brighton Arc-Lighting Circuit

### PROJECT INFORMATION

|                                   |                                             |                                                |                                           |                                    |
|-----------------------------------|---------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-003466            | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H1 2026 |

#### Project description:

Cable and subway infrastructure for the entirety of Circuits 12, 19, 62, 107, 130, and 155 will be replaced, as failure of the older lighting system results in unsafe conditions for pedestrians. The Town of Brighton has requested the replacement of the existing lighting system. Existing concrete poles along said circuits will be replaced as needed. All existing light fixtures along the aforementioned circuits will be replaced with LED fixtures.

#### Project Scope:

The solution will include the replacement of 6 OL Circuits (12, 19, 62, 107, 130, 155) new primary and secondary cable and subway infrastructure to replace the old unusable wooden duct and paper-insulated lead cable circuits. In addition to the circuits, replacement of existing damaged or deteriorated concrete poles is required. Finally, all light fixtures, consisting of decorative harp and globe fixture atop concrete poles and cobra head fixtures atop steel/fiberglass poles are to be replaced with LED fixtures.

- Project Exclusions: Originally this scope include 9 total OL Circuits, but it was determined that OL 7, 67, and 76 did not require replacements and are excluded from this scope of work.

#### Project Benefits:

Arc-lighting replacements along project circuits contribute to safe travel in the Town of Brighton. Failure of the older lighting system results in unsafe conditions for pedestrians and requests from the Town to replace the failing system have been ongoing for several years. Replacement parts for the fixtures are also very challenging to find and are becoming obsolete. The project will help decrease streetlight outages, decrease O&M repair costs, and provide insight into a broader replacement program for aging facilities.

#### Project Risks and Mitigation Plan:

- Project must be completed by September 26th, 2029. The Town's Historic Preservation Commission approved a certificate of appropriateness for the project on September 26th, 2024 with the requirements to start construction of the project within one year and complete all work within five years.
- Considerations for construction schedule. Town's Residential Street Resurfacing Program, Town's construction requirements and limitations, construction / traffic / other permit approvals, religious holidays in the neighborhood,
- Mitigation of construction conflicts: construction coordination sequencing required with the Towns of Brighton and Pittsford as well as other utilities performing work in the area (residential asphalt resurfacing program) and lane closures for other utility work zones
- Disposal requirements. Soil samples obtained for characterization and planning proper disposal
- Project location. Ensure design remains with the Towns of Brighton and Pittsford streets and right of way during design phase and investigations.
- Research of existing utilities will be part of the detailed engineering contract. GPR/test pits to confirm these locations will also be recommended to have best available information
- Emergent storm support by project staff. Coordinate construction coverage with CM and FCM will occur to ensure work continues if other key team members are activated for work storm
- Work with ECC as required

#### Risk of No Action:

Avangrid will be at risk of fostering poor relations by not addressing inadequate lighting and pedestrian safety concerns raised by the Towns of Brighton and Pittsford.

#### Project Alternatives:

No action toward replacement of existing light fixtures within the project scope would diminish the likelihood of positive and timely communication and coordination on projects between Avangrid and the Towns of Brighton and Pittsford. Solutions for this project have been limited due to the existing light structures identified as "historic landmarks" by the Town of Brighton, which can't be altered.

#### Basis for Project Estimates

Utilize estimating tools as well as historical data and bid PayID to forecast a project cost approximately at \$25.3M

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022         | 2023          | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|--------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 75           | \$ -        | \$ -        | \$ 0         | \$ 11         | \$ 64           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # External Services    | \$ 1,083        | \$ -        | \$ -        | \$ -         | \$ 157        | \$ 927          |  |  |
| # Internal - Non-AC    | \$ 17           | \$ -        | \$ -        | \$ 0         | \$ 0          | \$ 17           |  |  |
| # Internal, Labor      | \$ 297          | \$ -        | \$ -        | \$ 22        | \$ 154        | \$ 122          |  |  |
| # Internal, Overheads  | \$ 160          | \$ -        | \$ -        | \$ 2         | \$ 22         | \$ 136          |  |  |
| # Materials            | \$ 290          | \$ -        | \$ -        | \$ -         | \$ 2          | \$ 288          |  |  |
| # Overheads - External | \$ 529          | \$ -        | \$ -        | \$ 10        | \$ 118        | \$ 400          |  |  |
| <b>Total</b>           | <b>\$ 2,452</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 34</b> | <b>\$ 465</b> | <b>\$ 1,954</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027             | 2028          | 2029        | 2030        | 2031        |
|------------------------|------------------|-----------------|-----------------|------------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ 700           | \$ 372          | \$ 114          | \$ 151           | \$ 62         | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -             | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 17,013        | \$ 1,947        | \$ 2,037        | \$ 12,821        | \$ 208        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -             | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 743           | \$ 96           | \$ 287          | \$ 336           | \$ 24         | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 858           | \$ 118          | \$ 131          | \$ 601           | \$ 8          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 2,810         | \$ 327          | \$ 498          | \$ 1,985         | \$ -          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 2,056         | \$ 274          | \$ 336          | \$ 1,425         | \$ 21         | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 24,180</b> | <b>\$ 3,135</b> | <b>\$ 3,402</b> | <b>\$ 17,320</b> | <b>\$ 323</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## RGE - Serv Conn

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0020-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program installs new electric service to single phase residential or commercial units including temporary service at the customer's request.

#### Project Scope:

This on-going program installs electric service to single phase residential or commercial units including temporary service at the customer's request. Included within the program is anything required for constructing, expanding, replacing, or relocating electric infrastructure assets to connect customers. Meters required as part of customer projects are also included on this line item. The cost of the service is comprised of tariff portions as well as customer payments for the amounts above the tariff required provision.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 543) 2,628/unit\*

Transformers (estimated units = 142) \$3,932/unit\*

Overhead Conductor (Wire) ft - (estimated ft = 19,185) \$11/ft\*

Underground Conductor (Cable) ft - (estimated ft = 1,297) \$32/ft\*

In addition to the above units and average costs, the budget includes \$503K for miscellaneous items: anchors, arresters, capacitors, cutouts, crossarms, deadend, fuses, insulators, regulators, risers, reclosers, and vaults.

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

#### Project Benefits:

RGE is required to perform the work associated with single phase commercial and residential service orders. This work is required to satisfy customer needs for power consumption, including for temporary services. RGE has an obligation to serve all customers within our franchise territory in accordance with our tariffs.

#### Project Risks and Mitigation Plan:

Inadequate funding, on an annual basis, has been the primary risk associated with this program. Program tracking and monitoring of available budget is continually balanced with remaining/anticipated workload, and in many cases, financial offsets are required from other planned work to fund this mandatory work throughout the year. These offsets create downstream consequences since prioritized work can no longer be executed as planned which can affect any number of factors, mainly system reliability.

#### Risk of No Action:

The Company is required to connect customers requesting service. Delayed or non-execution of customer applications could result in fines, penalties and reputation damages.

#### Project Alternatives:

Each customer application is designed using company standards and adherence to NESC. Alternatives are considered and offered to the customer through the design phase where possible.

#### Basis for Project Estimates

Future annual spending targets are informed by an annual analysis which considers historical itemized component upgrades (poles, transformers, conductor, etc.) and overall spending from prior years. Using prior actuals, by component upgrade type, is the basis for future spending projections and a current and justified escalation factor is used to inform each subsequent out-year.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 346           | \$ 35           | \$ 62           | \$ 77           | \$ 75           | \$ 97           |  |  |
| # CIAC                 | \$ -4,488        | \$ -739         | \$ -604         | \$ -723         | \$ -985         | \$ -1,437       |  |  |
| # External Services    | \$ 3,834         | \$ 489          | \$ 677          | \$ 601          | \$ 578          | \$ 1,488        |  |  |
| # Internal - Non-AC    | \$ 0             | \$ 0            | \$ -            | \$ -            | \$ 0            | \$ -0           |  |  |
| # Internal, Labor      | \$ 8,264         | \$ 1,367        | \$ 1,531        | \$ 1,674        | \$ 1,745        | \$ 1,947        |  |  |
| # Internal, Overheads  | \$ 1,506         | \$ 219          | \$ 232          | \$ 248          | \$ 251          | \$ 557          |  |  |
| # Materials            | \$ 3,695         | \$ 532          | \$ 475          | \$ 550          | \$ 756          | \$ 1,383        |  |  |
| # Overheads - External | \$ 5,304         | \$ 738          | \$ 732          | \$ 998          | \$ 1,139        | \$ 1,698        |  |  |
| <b>Total</b>           | <b>\$ 18,462</b> | <b>\$ 2,640</b> | <b>\$ 3,105</b> | <b>\$ 3,426</b> | <b>\$ 3,558</b> | <b>\$ 5,732</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total         | 2020         | 2021         | 2022         | 2023         | 2024         |  |  |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--|--|
| Outside Services | \$ 102        | \$ 22        | \$ 36        | \$ 15        | \$ 20        | \$ 9         |  |  |
| Materials        | \$ 6          | \$ 3         | \$ 0         | \$ 0         | \$ 0         | \$ 2         |  |  |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| <b>Total</b>     | <b>\$ 107</b> | <b>\$ 25</b> | <b>\$ 36</b> | <b>\$ 15</b> | <b>\$ 21</b> | <b>\$ 11</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 361           | \$ 50           | \$ 45           | \$ 50           | \$ 51           | \$ 53           | \$ 55           | \$ 57           |
| # CIAC                 | \$ -7,409        | \$ -996         | \$ -1,042       | \$ -1,053       | \$ -1,063       | \$ -1,074       | \$ -1,085       | \$ -1,096       |
| # External Services    | \$ 6,233         | \$ 802          | \$ 840          | \$ 865          | \$ 891          | \$ 917          | \$ 945          | \$ 973          |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 15,037        | \$ 1,935        | \$ 2,026        | \$ 2,086        | \$ 2,149        | \$ 2,213        | \$ 2,280        | \$ 2,348        |
| # Internal, Overheads  | \$ 1,422         | \$ 262          | \$ 237          | \$ 218          | \$ 195          | \$ 170          | \$ 165          | \$ 175          |
| # Materials            | \$ 7,335         | \$ 944          | \$ 988          | \$ 1,018        | \$ 1,048        | \$ 1,080        | \$ 1,112        | \$ 1,145        |
| # Overheads - External | \$ 4,394         | \$ 718          | \$ 751          | \$ 690          | \$ 618          | \$ 540          | \$ 523          | \$ 554          |
| <b>Total</b>           | <b>\$ 27,373</b> | <b>\$ 3,715</b> | <b>\$ 3,843</b> | <b>\$ 3,873</b> | <b>\$ 3,889</b> | <b>\$ 3,900</b> | <b>\$ 3,995</b> | <b>\$ 4,157</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total        | 2025         | 2026         | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 81        | \$ 11        | \$ 11        | \$ 11        | \$ 12        | \$ 12        | \$ 12        | \$ 12        |
| Materials        | \$ 4         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         |
| Other O&M        | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 85</b> | <b>\$ 11</b> | <b>\$ 12</b> | <b>\$ 12</b> | <b>\$ 12</b> | <b>\$ 12</b> | <b>\$ 13</b> | <b>\$ 13</b> |



## RGE - Ind/Comm

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0014-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

RGE is obligated to connect all customers within its franchise area to the electric distribution system in accordance with tariffs, specific Terms & Conditions, Construction Standards, the National Electrical Safety Code (NESC), RGE's Guidebook of Requirements for Electric Service, policies, and procedures. RGE Industrial Commercial is an annual blanket program covers hundreds of individual commercial or industrial customer-related service requests each year.

#### Project Scope:

This program provides service connections for industrial and commercial customers. It includes construction work for services supplied by either overhead or underground powerlines for new, increased, replacement, removal, or demolition electric services. Each individual customer request is a unique project with its own design scope of work, schedule, and cost. The scope of the job can include distribution primary system upgrades to serve new customers by installing new poles, transformers, primary wires, and other system equipment. The program covers all activities required for constructing, expanding, replacing, or relocating electric infrastructure assets to connect commercial customers.

The cost of the service comprises tariff portions and customer payments for amounts above the tariff-required provision. Many of these requests are made in-year by our commercial customers and are therefore unplanned.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 382) \$4,579/unit\*

Transformers (estimated units = 151) \$6,760/unit\*

Overhead Conductor (Wire) Ft - (estimated ft = 5,359) \$15/ft\*

Underground Conductor (Cable) Ft - (estimated ft = 3,118) \$23/ft\*

Misc Costs: ~\$300K anchors, arresters, capacitors, cutouts, crossarms, deadend, fuses, insulators, regulators, risers, reclosers, and vaults.

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031.

\*Exclusion of overheads impacting miscellaneous costs

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rate of poles, transformers, feet of conductor installed/replaced.

#### Project Benefits:

The program allows RGE to efficiently address all commercial and industrial customer requests for engineering consultations. Whether for new installations, revamp/replacement projects, temporary setups, or demolition services, RGE ensures timely and effective responses, enhancing customer satisfaction and operational efficiency.

#### Project Risks and Mitigation Plan:

The primary risk associated with this program is inadequate annual funding. Continuous tracking and monitoring of the available budget are essential to balance the remaining and anticipated workload. Often, financial offsets from other planned work are necessary to fund this mandatory work throughout the year. These offsets can lead to downstream consequences, as prioritized work may not be executed as planned, potentially affecting various factors, primarily system reliability.

#### Risk of No Action:

The Company is obligated to connect customers requesting service. Delays or failure to process customer applications could result in fines, penalties, and reputational damage.

#### Project Alternatives:

Each customer application is designed in accordance with company standards and the National Electrical Safety Code (NESC). Where possible, alternatives are considered and offered to the customer during the design phase.

**Basis for Project Estimates**

Future annual spending targets are determined through an annual analysis that considers historical itemized component upgrades (such as poles, transformers, and conductors) and overall spending from prior years. Projections for future spending are based on prior actuals by component upgrade type, with a current and justified escalation factor used to inform each subsequent out-year.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 298           | \$ 43           | \$ 66           | \$ 74           | \$ 44           | \$ 72           |  |  |
| # CIAC                 | \$ -6,678        | \$ -1,450       | \$ -1,046       | \$ -1,148       | \$ -1,651       | \$ -1,383       |  |  |
| # External Services    | \$ 5,161         | \$ 658          | \$ 1,111        | \$ 967          | \$ 1,064        | \$ 1,361        |  |  |
| # Internal - Non-AC    | \$ 0             | \$ 0            | \$ 0            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 4,322         | \$ 836          | \$ 911          | \$ 930          | \$ 741          | \$ 904          |  |  |
| # Internal, Overheads  | \$ 1,471         | \$ 251          | \$ 266          | \$ 239          | \$ 245          | \$ 470          |  |  |
| # Materials            | \$ 5,812         | \$ 1,077        | \$ 1,019        | \$ 889          | \$ 1,252        | \$ 1,577        |  |  |
| # Overheads - External | \$ 4,189         | \$ 637          | \$ 672          | \$ 797          | \$ 887          | \$ 1,196        |  |  |
| <b>Total</b>           | <b>\$ 14,576</b> | <b>\$ 2,052</b> | <b>\$ 2,998</b> | <b>\$ 2,748</b> | <b>\$ 2,582</b> | <b>\$ 4,196</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total         | 2020         | 2021         | 2022         | 2023         | 2024         |  |  |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--|--|
| Outside Services | \$ 243        | \$ 23        | \$ 52        | \$ 50        | \$ 70        | \$ 47        |  |  |
| Materials        | \$ 6          | \$ 5         | \$ 0         | \$ 1         | \$ 0         | \$ 0         |  |  |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| <b>Total</b>     | <b>\$ 249</b> | <b>\$ 28</b> | <b>\$ 52</b> | <b>\$ 51</b> | <b>\$ 71</b> | <b>\$ 47</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 333           | \$ 41           | \$ 49           | \$ 45           | \$ 47           | \$ 49           | \$ 50           | \$ 52           |
| # CIAC                 | \$ -7,901        | \$ -1,080       | \$ -1,109       | \$ -1,120       | \$ -1,131       | \$ -1,142       | \$ -1,154       | \$ -1,165       |
| # External Services    | \$ 9,889         | \$ 1,294        | \$ 1,329        | \$ 1,369        | \$ 1,410        | \$ 1,452        | \$ 1,496        | \$ 1,540        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 8,128         | \$ 1,064        | \$ 1,092        | \$ 1,125        | \$ 1,159        | \$ 1,193        | \$ 1,229        | \$ 1,266        |
| # Internal, Overheads  | \$ 1,352         | \$ 254          | \$ 224          | \$ 206          | \$ 185          | \$ 161          | \$ 156          | \$ 166          |
| # Materials            | \$ 9,944         | \$ 1,301        | \$ 1,336        | \$ 1,376        | \$ 1,417        | \$ 1,460        | \$ 1,504        | \$ 1,549        |
| # Overheads - External | \$ 3,428         | \$ 580          | \$ 582          | \$ 534          | \$ 479          | \$ 418          | \$ 405          | \$ 429          |
| <b>Total</b>           | <b>\$ 25,173</b> | <b>\$ 3,454</b> | <b>\$ 3,503</b> | <b>\$ 3,535</b> | <b>\$ 3,565</b> | <b>\$ 3,591</b> | <b>\$ 3,687</b> | <b>\$ 3,837</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total         | 2025         | 2026         | 2027         | 2028         | 2029         | 2030         | 2031         |
|------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outside Services | \$ 350        | \$ 46        | \$ 48        | \$ 49        | \$ 50        | \$ 51        | \$ 52        | \$ 53        |
| Materials        | \$ 9          | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         | \$ 1         |
| Other O&M        | \$ -          | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |
| <b>Total</b>     | <b>\$ 360</b> | <b>\$ 47</b> | <b>\$ 49</b> | <b>\$ 50</b> | <b>\$ 52</b> | <b>\$ 53</b> | <b>\$ 54</b> | <b>\$ 55</b> |

## RGE - Trans line

### PROJECT INFORMATION

|                                              |                                             |                                              |                                          |                                        |
|----------------------------------------------|---------------------------------------------|----------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0024-RGE-ET       | <b>Charge Code:</b><br>Electric Transmission | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Transmission Line program encompasses both planned work and emergency responses to service interruptions. This program addresses safety concerns by replacing reject poles, car-hit poles, damaged conductors, and other unplanned, reactive work on the electric transmission system at 34.5 kV or higher. Additionally, it includes replacing individual units of property identified as emergent from the transmission line inspection program and addressing Customer Average Interruption Duration Index (CAIDI) and System Average Interruption Frequency Index (SAIFI) Hot Spots within the same calendar year.

#### Project Scope:

This program covers both planned and unplanned, reactive work on the electric transmission system, including tasks such as replacing car-hit poles, damaged conductors, crossarms, cutouts, and poles. The majority of the program activities are related to planned work.

The TLD program consists of a field inspection that generates notifications for maintenance work execution on company equipment within transmission lines. The execution happens following a workplan based on a prioritization matrix of transmission line segments that includes maintenance status, notifications priority, asset data, customer exposure and reliability history. At RGE an average of 14,000 customers were interrupted annually by company equipment failure causes on transmission lines over the past 3 years.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

Poles (estimated units = 27) \$45,090/unit\*

Arms/Insulators (estimated units = 8) \$32,400/unit\*

Pole and Switch (estimated units = 1) \$67,500/unit\*

Lightning Arrestor (estimated units = 4) \$13,500/unit\*

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rates.

#### Project Benefits:

Addressing CAIDI/SAIFI Hot Spots and replacing damaged equipment will positively impact the continuity and quality of service needed to maintain the transmission system. This will also help avoid penalties associated with failing reliability metrics. A Power BI dashboard ranks all notifications based on reliability, which determines their prioritization.

#### Project Risks and Mitigation Plan:

Potential increased power losses due to degraded conductors, risk of outages from weakened components, increased maintenance needs, potential for sagging or breaking wires, and reduced capacity to transmit electricity efficiently could all affect reliability and stability. Regular inspections and maintenance of the lines are essential to promptly identify and address these potential issues. While there is a strategies to complete planned work, emergent tasks may arise that will need to be prioritized. This could impact the completion timeline of corrective actions, extending them into future years.

#### Risk of No Action:

Failure to replace deteriorated poles and equipment will result in non-compliance with National Electrical Safety Code (NESC) requirements, putting the safety of the public and utility workers at risk. Potential increased power losses due to degraded conductors, risk of outages from weakened components, increased maintenance needs, potential for sagging or breaking wires, and reduced capacity to transmit electricity efficiently could all affect reliability and stability.

#### Project Alternatives:

This program aims to replace outage equipment using an "in-kind" replacement strategy.

**Basis for Project Estimates**

Future annual spending targets are determined through an annual analysis that considers historical itemized component upgrades (such as poles and conductors) and overall spending from previous years.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 392          | \$ 45         | \$ 83           | \$ 104          | \$ 80           | \$ 79           |  |  |
| # CIAC                 | \$ -379         | \$ -28        | \$ -101         | \$ -14          | \$ -4           | \$ -231         |  |  |
| # External Services    | \$ 3,911        | \$ 359        | \$ 815          | \$ 755          | \$ 851          | \$ 1,130        |  |  |
| # Internal - Non-AC    | \$ 0            | \$ -          | \$ -            | \$ 0            | \$ 0            | \$ -            |  |  |
| # Internal, Labor      | \$ 943          | \$ 143        | \$ 224          | \$ 138          | \$ 239          | \$ 201          |  |  |
| # Internal, Overheads  | \$ 555          | \$ 57         | \$ 134          | \$ 63           | \$ 81           | \$ 220          |  |  |
| # Materials            | \$ 1,557        | \$ 190        | \$ 567          | \$ 81           | \$ 193          | \$ 526          |  |  |
| # Overheads - External | \$ 1,470        | \$ 135        | \$ 284          | \$ 194          | \$ 323          | \$ 534          |  |  |
| <b>Total</b>           | <b>\$ 8,450</b> | <b>\$ 901</b> | <b>\$ 2,006</b> | <b>\$ 1,320</b> | <b>\$ 1,763</b> | <b>\$ 2,460</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2020        | 2021        | 2022        | 2023          | 2024          |  |  |
|------------------|-----------------|-------------|-------------|-------------|---------------|---------------|--|--|
| Outside Services | \$ 1,078        | \$ 7        | \$ 1        | \$ 5        | \$ 517        | \$ 547        |  |  |
| Materials        | \$ 2            | \$ -        | \$ 0        | \$ 0        | \$ -          | \$ 1          |  |  |
| Other O&M        | \$ 0            | \$ -        | \$ -        | \$ 0        | \$ -          | \$ -          |  |  |
| <b>Total</b>     | <b>\$ 1,080</b> | <b>\$ 7</b> | <b>\$ 1</b> | <b>\$ 6</b> | <b>\$ 517</b> | <b>\$ 549</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 184           | \$ 26           | \$ 23           | \$ 25           | \$ 26           | \$ 27           | \$ 28           | \$ 29           |
| # CIAC                 | \$ -615          | \$ -82          | \$ -86          | \$ -87          | \$ -88          | \$ -89          | \$ -90          | \$ -91          |
| # External Services    | \$ 7,502         | \$ 964          | \$ 1,011        | \$ 1,041        | \$ 1,072        | \$ 1,104        | \$ 1,138        | \$ 1,172        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,859         | \$ 239          | \$ 250          | \$ 258          | \$ 266          | \$ 274          | \$ 282          | \$ 290          |
| # Internal, Overheads  | \$ 584           | \$ 107          | \$ 97           | \$ 89           | \$ 80           | \$ 70           | \$ 68           | \$ 72           |
| # Materials            | \$ 3,463         | \$ 445          | \$ 467          | \$ 481          | \$ 495          | \$ 510          | \$ 525          | \$ 541          |
| # Overheads - External | \$ 1,320         | \$ 223          | \$ 224          | \$ 206          | \$ 185          | \$ 161          | \$ 156          | \$ 165          |
| <b>Total</b>           | <b>\$ 14,298</b> | <b>\$ 1,922</b> | <b>\$ 1,986</b> | <b>\$ 2,013</b> | <b>\$ 2,036</b> | <b>\$ 2,057</b> | <b>\$ 2,106</b> | <b>\$ 2,178</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 4,191        | \$ 548        | \$ 576        | \$ 588        | \$ 601        | \$ 613        | \$ 626        | \$ 639        |
| Materials        | \$ 6            | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ 1          |
| Other O&M        | \$ 1            | \$ 0          | \$ 0          | \$ 0          | \$ 0          | \$ 0          | \$ 0          | \$ 0          |
| <b>Total</b>     | <b>\$ 4,198</b> | <b>\$ 549</b> | <b>\$ 577</b> | <b>\$ 589</b> | <b>\$ 602</b> | <b>\$ 614</b> | <b>\$ 627</b> | <b>\$ 640</b> |

## Aqueduct Re-Imagined

### PROJECT INFORMATION

|                                   |                                             |                                               |                                          |                                    |
|-----------------------------------|---------------------------------------------|-----------------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-003467            | <b>Charge Code:</b><br>Electric Distribution  | <b>Project Sponsor:</b><br>Malone, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2025            | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

The City of Rochester is executing a program called Roc the Riverway, which includes two dozen transformation projects along the Genesee River. The program is intended to allow Rochester to better leverage the riverfront. Aqueduct Re-Imagined will include the removal of the Street Surface of the Broad Street Bridge to expose the historic Aqueduct.

RG&E has approximately 11 Circuits (654, 652N, 681, 384, 347, 332, 302, 306, 309 and Pilot Wire 35, 38, 48, 50) in the raceway that will need some type of relocation/replacement to facilitate the city's plans. There is both State and Federal funding behind the initiative and the City of Rochester has put forward an aggressive schedule.

#### Project Scope:

This is a multiphase project with details determined for Phase 1 at this time. Phase 1 construction was completed in 2023: the addition of new 5" duct along side of existing Tile and McRoy duct system instead of rebuild or replacement, 10 Manholes rebuilt (including new roofs, frames and covers) with associated sub-holes for services, (2) network vaults rebuilt with associated equipment (2023). Phase 2 consists of the removal of the Broad Street Bridge Deck and reconstruction of the bridge to include pedestrian features. In order to remove the deck the existing 4kV and (3) 11kV circuits need to be removed and temporarily relocated to continue service during construction. Phase 3 consists of reconstruction of Stone and South Avenues to accommodate two way traffic and will require upgrades as needed to RG&E infrastructure as required.

#### Project Benefits:

RG&E Electric will maintain a positive working relationship with the City of Rochester by coordinating work and scheduling within individual project scopes for ROC the Riverway, including Aqueduct Re-Imagined. Circuits replaced through this project scope will require less maintenance in the near future.

#### Project Risks and Mitigation Plan:

- The City requests that all Phase 2 and 3 HWY Projects (Broad St, South Ave, Stone St, Court St/Promenades) be completed before their street reconstruction work begins.
- Roc the Riverway timeline will constrain activities across all City of Rochester projects which RG&E must coordinate with.
- Phase 2 requires removal of Electric facilities from Broad Street bridge prior to City construction, and inactive status for said facilities until associated City work is complete.
- The City will perform all construction for the Aqueduct Re-Imagined portion of the project (Broad Street Bridge deck removal).
- Coordination is required between utilities due to limited underground space within project scope area, possibly complicating Electric construction schedules and in-service dates for anticipated work.
- Team is working with the City of Rochester to accept the shallow grades of the existing infrastructure by coordinating our design plans with the City's. The City of Rochester has verbally accepted our coordination efforts, but the team is awaiting written confirmation.
- Traffic control and other permitting needs to be obtained before construction. Team is currently working to get in front of the Traffic Control Board as early as possible to mitigate issues
- Coordinate construction sequencing with the City of Rochester as well as other utilities performing work in the area (Charter) to mitigate construction conflicts and road closures.
- Soil samples obtained for characterization and planning proper disposal
- Mitigation of construction conflicts: construction coordination sequencing required with the Towns of Brighton and Pittsford as well as other utilities performing work in the area (residential asphalt resurfacing program) and lane closures for other utility work zones
- Disposal requirements. Soil samples obtained for characterization and planning proper disposal
- Research of existing utilities will be part of the detailed engineering contract. GPR/test pits to confirm these locations will also be recommended to have best available information
- Emergent storm support by project staff. Coordinate construction coverage with CM and FCM will occur to ensure work continues if other key team members are activated for work storm
- Work with ECC as required

#### Risk of No Action:

City of Rochester construction moratorium could apply to work on Aqueduct Re-Imagined streets for multiple years, meaning extensive road surface restoration requirements for any work, including emergency scenarios, preventing cost-effective Electric work. If this project is not pursued, there is potential for litigation with the City of Rochester as the re-route has the support of New York State with pledged funding, both federal and state. RG&E would be supporting a betterment initiative while facilitating a mandated relocation within the City Right of Way. The City anticipates that we provide a system robust enough to last as long as their facilities and street improvements, and any upgrades in the area would be under a five year moratorium after their work is completed.

A full rebuild of the underground subway system and assets in the impacted Aqueduct Streets after completion of the City of Rochester's project has been considered. This would require additional duct, cables, and due to the moratorium would require a full mill and resurfacing of all streets in the area upon completion of the project. This alternative is not preferred, as it exceeds the estimated cost of completing scoped work in the same timeframe as the Aqueduct Re-Imagined.

Utilize estimating tools as well as historical data and bid PayID to forecast a project cost approximately at \$23M

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE CAPEX EL Meters

### PROJECT INFORMATION

|                                           |                                             |                                              |                                                 |                                        |
|-------------------------------------------|---------------------------------------------|----------------------------------------------|-------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>UI-R3068-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>Ongoing                   | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Dollars budgeted for the purchase and installation of electric meters, metering transformers, and metering equipment to replace existing, aged meters and equipment as they are removed from service as well as for new installations.

#### Project Scope:

Dollars budgeted for the purchase and installation of electric meters, metering transformers, and metering equipment, to replace existing, aged meters as they are removed from service as well as for new installations.

AMI meters are not included in the 2025 scope of this program because they are being covered under the AMI Project.

In 2026, after the conclusion of the AMI Project, this program will assume the CapEx costs of AMI meters which will have a significantly higher material cost compared to legacy meters.

#### Project Benefits:

Required by 16 NYCRR Part 92 and Tariff (PSC 19- 4 (Metering and Billing) for new meters and replacement programs. Revenue meters are necessary to record electric usage and recoup operational costs provided to our customers. This project also replaces any existing meters that do not meet PSC accuracy guidelines.

#### Project Risks and Mitigation Plan:

Material lead times - ensure orders are placed 1 year in advance / work with multiple suppliers.  
Large meter group failure - perform in house first article testing and review.

#### Risk of No Action:

Loss of revenue due to lack of meter inventory or inaccurate revenue metering equipment.

#### Project Alternatives:

None - it is mandatory to install and replace customer meters as required.

#### Basis for Project Estimates

Previous years actuals, annual inflation, new customer popuation, increased meter costs due to Smart Meter Technology  
2026 - 2031 forecasts based on annual inflation of 3%. In addition, a larger increase from 2025 to 2026 is based on the cost increase from legacy meters to AMI meters as a result of the NY AMI Project (Legacy Meter Cost \$36.49 / AMI Meter Cost \$124.41 --- 29% increase). We also anticipate 2% of opt out customers opting back into AMI in 2026. This cost although a result of AMI will be assumed by this budget.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ 1            | \$ 1          | \$ 0          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ 1,489        | \$ 564        | \$ 280        | \$ 299        | \$ 269        | \$ 76         |  |  |
| # Materials            | \$ 1,404        | \$ 395        | \$ 313        | \$ 328        | \$ 287        | \$ 81         |  |  |
| # Overheads - External | \$ 13           | \$ 6          | \$ 3          | \$ 2          | \$ 2          | \$ 1          |  |  |
| <b>Total</b>           | <b>\$ 2,907</b> | <b>\$ 967</b> | <b>\$ 596</b> | <b>\$ 628</b> | <b>\$ 558</b> | <b>\$ 158</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 4,235        | \$ 272        | \$ 438        | \$ 572          | \$ 667          | \$ 715          | \$ 762          | \$ 810          |
| # Materials            | \$ 4,445        | \$ 285        | \$ 460        | \$ 600          | \$ 700          | \$ 750          | \$ 800          | \$ 850          |
| # Overheads - External | \$ 50           | \$ 3          | \$ 5          | \$ 7            | \$ 8            | \$ 8            | \$ 9            | \$ 10           |
| <b>Total</b>           | <b>\$ 8,730</b> | <b>\$ 560</b> | <b>\$ 903</b> | <b>\$ 1,178</b> | <b>\$ 1,375</b> | <b>\$ 1,473</b> | <b>\$ 1,571</b> | <b>\$ 1,669</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## RGE - Street Light

### PROJECT INFORMATION

|                                              |                                             |                                                |                                          |                                        |
|----------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                         | <b>Project ID:</b><br>UI-R0022-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Shail, Joshua | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Electric Operations | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program provides new overhead street and area lighting and replaces damaged lighting facilities. This program also includes the conversion of existing lighting to LED lighting to those municipalities that request this change.

#### Project Scope:

The scope includes lights that are fed from overhead and underground, secondary and service wire work, poles and light heads and civil work for bases and conduit and miscellaneous hardware. In addition, the LED conversion capital program for municipalities ended in 12/2024; therefore, the 2025 conversion work is planned in this program.

Below are the 2025-2031 estimated annual units and average unit rates excluding overheads based on a 3-year historical average (2022 - 2024):

LED (estimated units = 5,040) \$342/unit\*

Street Light (estimated units = 120) \$254/unit\*

Area/ODL (estimated units = 92) \$295/unit\*

Hourly Street Light Emergent Work (estimated units = 4,820) \$209.81/unit\* - Begins in 2026

In addition to the above units and average costs, the budget includes \$320K for miscellaneous items.

\*Unit rates are calculated with a 3% annual escalation for 2025- 2031

Refer to the 'The RC\_Historical Analysis' tab for year-by-year breakdown of estimated units and average unit rates.

#### Project Benefits:

This program creates safe and inviting areas throughout the communities we serve. The conversion to LED lighting will also increase energy efficiency. NYSEG Is tariff mandated to replace/repair lights within three business days

#### Project Risks and Mitigation Plan:

Program managers works with each customer/municipality conduct assessment of in service plant, reviews needs with the customer and develop alternatives where possible to select the most feasible repair/replace designs. Temporary repairs made by the workforce are sent to engineering to follow-up to ensure permanent repairs are made to current construction standards and adherence to industry codes.

#### Risk of No Action:

This program is customer facing. NYSEG has a service obligation to execute this work. Delayed or non-execution of street light installations could result in fines, penalties, and reputation damages.

#### Project Alternatives:

The company responds to customer needs, replacement is like-for-like.

#### Basis for Project Estimates

The budget for this program is based on 3 years average actual costs.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ 62           | \$ 6          | \$ 14         | \$ 23         | \$ 15         | \$ 4          |  |  |
| # CIAC                 | \$ -41          | \$ -9         | \$ -3         | \$ -8         | \$ -1         | \$ -19        |  |  |
| # External Services    | \$ 903          | \$ 81         | \$ 104        | \$ 230        | \$ 340        | \$ 149        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ 0          | \$ -0         |  |  |
| # Internal, Labor      | \$ 28           | \$ 5          | \$ 6          | \$ 8          | \$ 8          | \$ 2          |  |  |
| # Internal, Overheads  | \$ 143          | \$ 14         | \$ 45         | \$ 22         | \$ 38         | \$ 24         |  |  |
| # Materials            | \$ 726          | \$ 74         | \$ 326        | \$ 61         | \$ 181        | \$ 83         |  |  |
| # Overheads - External | \$ 324          | \$ 23         | \$ 72         | \$ 60         | \$ 116        | \$ 54         |  |  |
| <b>Total</b>           | <b>\$ 2,147</b> | <b>\$ 193</b> | <b>\$ 563</b> | <b>\$ 397</b> | <b>\$ 696</b> | <b>\$ 298</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| Outside Services | \$ 2,018        | \$ 332        | \$ 413        | \$ 811        | \$ 304        | \$ 158        |  |  |
| Materials        | \$ 168          | \$ 68         | \$ 106        | \$ 3          | \$ -7         | \$ -1         |  |  |
| Other O&M        | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| <b>Total</b>     | <b>\$ 2,186</b> | <b>\$ 400</b> | <b>\$ 519</b> | <b>\$ 814</b> | <b>\$ 297</b> | <b>\$ 157</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 97           | \$ 13           | \$ 13           | \$ 13           | \$ 14           | \$ 14           | \$ 15           | \$ 15           |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 3,528        | \$ 461          | \$ 474          | \$ 488          | \$ 503          | \$ 518          | \$ 534          | \$ 550          |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 112          | \$ 15           | \$ 15           | \$ 15           | \$ 16           | \$ 16           | \$ 17           | \$ 17           |
| # Internal, Overheads  | \$ 307          | \$ 58           | \$ 51           | \$ 47           | \$ 42           | \$ 37           | \$ 35           | \$ 38           |
| # Materials            | \$ 2,975        | \$ 389          | \$ 400          | \$ 412          | \$ 424          | \$ 437          | \$ 450          | \$ 464          |
| # Overheads - External | \$ 571          | \$ 100          | \$ 96           | \$ 88           | \$ 79           | \$ 69           | \$ 67           | \$ 71           |
| <b>Total</b>           | <b>\$ 7,590</b> | <b>\$ 1,035</b> | <b>\$ 1,049</b> | <b>\$ 1,064</b> | <b>\$ 1,078</b> | <b>\$ 1,091</b> | <b>\$ 1,118</b> | <b>\$ 1,154</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details:     | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Outside Services | \$ 4,498        | \$ 588        | \$ 618        | \$ 631        | \$ 645        | \$ 658        | \$ 672        | \$ 686        |
| Materials        | \$ 374          | \$ 49         | \$ 51         | \$ 53         | \$ 54         | \$ 55         | \$ 56         | \$ 57         |
| Other O&M        | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>     | <b>\$ 4,873</b> | <b>\$ 637</b> | <b>\$ 669</b> | <b>\$ 684</b> | <b>\$ 698</b> | <b>\$ 713</b> | <b>\$ 728</b> | <b>\$ 743</b> |

## RGE Customer Cost Allocation Program (CCAP)

### PROJECT INFORMATION

|                                                  |                                             |                                              |                                       |                                    |
|--------------------------------------------------|---------------------------------------------|----------------------------------------------|---------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                             | <b>Project ID:</b><br>PRJ-006432            | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Gay, Ruben | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Planning & Coordination | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>Ongoing         | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This Customer Cost Allocation Program (CCAP) allows the company to support customers with Contributions in Aid of Construction (CIAC) costs and addresses emergent capacity constraints to support new business growth across NYSEG's territory.

When new large customer loads seek to interconnect to RG&E's system, they are studied to determine whether they create any reliability violations. Generally, when a customer causes a reliability violation, they have full cost responsibility for system upgrades to mitigate the violations. However, in some cases it is appropriate for RG&E to have partial cost responsibility for these upgrades, and this program establishes this fund.

An example may be if a large customer causes an existing transformer to become overloaded. Since the customer is large, RG&E's forecasted load growth may not have identified this transformer as needing replacement or it may be a lower priority than more urgent projects. However, this customer is not the only customer supplied by this transformer, and if they pay for a larger transformer, they may be creating system capacity above what they need. With funds from the CCAP, RG&E could fund a transformer that is deliberately sized to support projected future load growth while collecting an appropriate CIAC from the customer.

The main goal of the project is to address capacity constraints at substations or circuits due to increased electrification and load interconnection requests in excess of forecasted load growth. This project is needed to ensure the reliability and safety of the electric grid by addressing infrastructure needs that restrict capacity.

There is urgency towards funding this program due to a recent surge in large load interconnection requests. Electrification initiatives require significant system upgrades that are currently not fully funded. Without dedicated funding, utilities struggle to adapt long-term plans in response to short-term growth in excess of forecasted load. This leads to potential service disruptions, safety hazards, and increased costs.

#### Project Scope:

By design, this is a reactive program, which means it is impractical to anticipate the exact scope that will be required. The program will develop a fund for emerging CIAC projects to support new business growth and ensure grid reliability and security. The proposal outlines a funding plan, with cost estimates, for emerging CIAC projects from 2026 to 2031 based on historical requests. This structured approach ensures that utilities have the financial resources they need to address urgent infrastructure needs quickly and efficiently.

#### Project Benefits:

The proposal offers three key benefits:

- (1) Financial Stability: Establishing a dedicated fund for emergent CIAC projects helps secure the necessary financial resources without having to pull funding from an in-execution project. This improves efficiency, reduces schedule delays, and mitigates financial risk.
- (2) Grid Reliability and Agility: Emergent CIAC projects are essential for maintaining the reliability of the electric grid. By establishing this CCAP, NYSEG will be able to address urgent reliability needs that were impractical to predict. By addressing infrastructure needs that restrict capacity, these projects help prevent service disruptions, safety hazards, increased costs, and thereby result in safeguarding the electric grid.
- (3) Support for New Business Growth: New business growth (small and large) will benefit directly from the CCAP. Without CCAP, higher costs may become the responsibility of the developer, which may suppress economic development.

#### Project Risks and Mitigation Plan:

Without CCAP funding, it may be necessary to re-prioritize in-execution projects, potentially delaying or canceling some urgent infrastructure upgrades. This could result in larger portions of the system experiencing capacity constraints, as the existing infrastructure would be unable to support additional load demands.

The costs for economic growth in constrained regions may become prohibitive, as customers will bear the responsibility for a larger portion of upgrade costs.

**Risk of No Action:**

If no action is taken, several significant risks could arise:

- (1) Customer impact: Without the necessary funding for infrastructure upgrades, utilities may not be able to accommodate new load interconnection requests. This could lead to delays or high costs to support connection requests, frustrating customers who are eager to electrify their homes or businesses. As a result, the number of complaints about lack of access to electricity could increase.
- (2) Financial Instability: Utilities may face substantial financial risks if emergent CIAC projects are not funded. The lack of a clear mechanism for cost recovery could lead to cash flow issues and credit metric pressures, jeopardizing the financial stability. This could also impact their credit ratings and access to capital markets. If funding must be redirected from other projects, this reduced efficiency will result in higher costs for those project, which reduces the total amount of work the utility can complete.
- (3) Operational Performance: Operating electrical equipment beyond its specified limitations due to capacity constraints can lead to equipment failure, reduced lifespan of utility facilities, and degradation of service reliability. This could result in increased maintenance costs and potential load-shedding events.

**Project Alternatives:**

The main alternative to the CCAP would be to wait until an applicable load request is received, and request funding for the specific scope of work to support this project at the next opportunity (whether it is a future rate case, proactive planning proceeding, or other funding opportunity). This would greatly extend the timeline for developers to understand their costs and will almost certainly suppress economic development in constrained regions.

**Basis for Project Estimates**

The basis for the funding amount was developed by analyzing historical data from previous CIAC projects carried out between 2022 and 2024. This analysis included the cost estimates and the number of projects completed by RG&E during this period.

To determine the average cost per project, the average value of CIAC projects was calculated by considering that 50% of the historical projects would require company funding. This value was then divided by the number of projects within the same period. Additionally, the dollar amounts for the years 2022 and 2023 were adjusted for inflation to reflect their 2024 value, ensuring that the estimates are current and account for changes in the economic environment.

For future projections, the proposal for the years 2026 to 2031 was based on the historical average cost per project. An annual increase cost of 5% per year was considered from 2026 onwards to account for inflation. The number of projects for RG&E was assumed to remain constant from 2026 to 2031, with 5 projects per year.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026            | 2027            | 2028             | 2029             | 2030             | 2031             |
|------------------------|------------------|-------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 622           | \$ -        | \$ 21           | \$ 68           | \$ 119           | \$ 131           | \$ 138           | \$ 145           |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 32,980        | \$ -        | \$ 1,107        | \$ 3,620        | \$ 6,301         | \$ 6,963         | \$ 7,312         | \$ 7,677         |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ -             | \$ -        | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ 2,113         | \$ -        | \$ 101          | \$ 294          | \$ 445           | \$ 417           | \$ 412           | \$ 445           |
| # Materials            | \$ 20,534        | \$ -        | \$ 689          | \$ 2,254        | \$ 3,923         | \$ 4,336         | \$ 4,552         | \$ 4,780         |
| # Overheads - External | \$ 3,962         | \$ -        | \$ 189          | \$ 551          | \$ 835           | \$ 782           | \$ 772           | \$ 834           |
| <b>Total</b>           | <b>\$ 60,211</b> | <b>\$ -</b> | <b>\$ 2,106</b> | <b>\$ 6,787</b> | <b>\$ 11,622</b> | <b>\$ 12,629</b> | <b>\$ 13,186</b> | <b>\$ 13,881</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Community Distributed Generation Billing Program

### PROJECT INFORMATION

|                                           |                                             |                                              |                                                 |                                        |
|-------------------------------------------|---------------------------------------------|----------------------------------------------|-------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-006449            | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>Ongoing                   | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program covers software enhancements and new functionality related to Distributed Generation Billing requirements. This functionality is a regulatory compliance requirement.

#### Project Scope:

The scope of work under this program would be necessary software upgrades and implementation of new functionality to our billing system to comply with any community distributed generation (CDG) billing regulations that are not covered under a separate project.

#### Project Benefits:

Regulatory compliance requirement.

Risks of not doing this work include penalties and non-compliance.

#### Project Risks and Mitigation Plan:

Not applicable at this time. Will update as regulatory needs arise

#### Risk of No Action:

Risk of not complying with future distributed generation billing requirements that become mandated would be penalties and NRAs.

#### Project Alternatives:

Not applicable at this time. Will update as regulatory needs arise

#### Basis for Project Estimates

Estimated Cost based on historical projects with similar development. Four percent interest factor added for 2027 and beyond.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026 | 2027     | 2028     | 2029     | 2030     | 2031     |
|------------------------|-----------------|------|------|----------|----------|----------|----------|----------|
| # AFUDC                | \$ 173          | \$ - | \$ - | \$ 32    | \$ 33    | \$ 35    | \$ 36    | \$ 37    |
| # CIAC                 | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # External Services    | \$ 3,954        | \$ - | \$ - | \$ 730   | \$ 759   | \$ 790   | \$ 821   | \$ 854   |
| # Internal - Non-AC    | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Internal, Labor      | \$ 1,826        | \$ - | \$ - | \$ 337   | \$ 351   | \$ 365   | \$ 379   | \$ 394   |
| # Internal, Overheads  | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Materials            | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Overheads - External | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| <b>Total</b>           | <b>\$ 5,954</b> | \$ - | \$ - | \$ 1,099 | \$ 1,143 | \$ 1,189 | \$ 1,237 | \$ 1,286 |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Community Distributed Generation Billing Phase II

### PROJECT INFORMATION

|                                           |                                             |                                                |                                                 |                                    |
|-------------------------------------------|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005290            | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Jul-2024                  | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This project covers software enhancements to the billing system and new functionality related to Distributed Generation Billing requirements. This functionality is a regulatory compliance requirement mandated by NY Public Service Commission issued and approved orders as well as pending filings. The project will begin in June 2024 and be completed by December 2026.

#### Project Scope:

The below three deliverable releases are included in a System Integrator package for CDG (Community Distributed Billing) Phase 2:

- A. DG Bill 01-CDG VS (Value Stack) Billing Automation Project - Phase 2-Deferred.
- B. DG Bill 02-Volumetric Net Crediting, including Volumetric Unresolved (11) Production Issues.
- C. DG Bill 03 - Value Stack Multiple Net Crediting Savings Rate.

The NY Community Distributed Generation (CDG) Billing Automation Phase 2 implementation is very complex and will need to ensure CDG functionality is implemented effectively/efficiently within regulatory deadlines. System changes must conform with NY Regulation, including but not limited to NYSEG and RG&E tariffs as well as NY Public Service Commission issued Orders. System enhancements and requirements are included in the attached Scope of Project attached document.

#### Project Benefits:

Regulatory compliance requirement. Approved Order for multiple CDG savings rates was filed only under Case 21-E-0629 (Solar Roadmap). Order for Volumetric Net Crediting was filed only under Case 19-M-0463 (Consolidated Billing).

It is vital that CDG automation enhancements and technical initiatives are completed as they address a critical business need. NYSEG and RG&E's current processes require a team of 60+ internal and external resources to issue bills to ~55K Community Distributed Generation (CDG) customers costing approximately \$500K monthly in O&M expenses. Once implemented, continued automation will positively impact the companies' service level, customer complaints, negative revenue adjustments (NRA's), and customer satisfaction priority targets.

Risks of not doing this work include penalties and non-compliance. The Commission (DPS) is currently working with utilities to establish CDG billing and crediting metrics that will be tied to an NRA's. Automation will position the Companies better to meet any imposed metrics. Additionally, failure to complete the project would also result in a loss of the investment already made to automation. Completing these projects will put us in a better position to bill CDG satellites correctly and timely, which will prevent JP \$10 customer bill credits. It will also strengthen our performance to help avoid NRAs that will be ordered soon for CDG Billing and Crediting Metrics (NY risk = \$17M).

#### Project Risks and Mitigation Plan:

Any delays in project scheduling due to defects, miss milestones, and scope creep. Mitigation: Risks not meeting project milestones and quality of services have strong SLAs and penalty charge 10% including service warranty.

Potential Staffing Resource Concerns: Statewide Solar For All, Renewables Energy Access, and Community Help (REACH), Value Stack CDG Billing Conversion, and other Regulatory projects planned during same time that may require same internal business and IT resources with the business and system knowledge and expertise. Need adequate staffing to support project and operational needs simultaneously. Risk can be mitigated by adding temporary external resources to perform project deliverables and address resource constraints. Resource Allocation and adjustment to secure internal resources.

Delays with NY PSC commission order/decisions or new order passed during project lifecycle – Potential Mitigation: Project will monitor/work closely with Rates and Regulatory and NY PSC to communicate any future approved orders that may impact project timeline and deliverables.

Unavailability of Avangrid System landscapes. Mitigation – Notification and detailed plans for all planned system downtimes throughout the project duration to plan for project activities. New Quality Landscape Environment created for CDG Phase 2 Project work.

Potential Budget Variances due to unforeseen project delays that may incur additional costs. Mitigation - will closely monitor project activities, risk assessment, and progress to take measures to prevent delays and cost overruns.



**Risk of No Action:**

Risks of no action for NYSEG and RG&E includes penalties and non-compliance with commission mandated regulatory orders for multiple savings rate and approved order on 12/20/2024 for Volumetric Net Crediting Order filing under case 19-M-0463 (Consolidated Billing).

**Project Alternatives:**

For all risks that may become a reality with any project deliverables and timelines. The contingency plan is to review and escalate jointly with system integrator and efforts will be handled through mutually agreed Change Control Process.

**Basis for Project Estimates**

The project cost estimates encompass required internal labor, external resources such as SWF (Software Factory), and a system integrator considered for appropriate project support costs. These estimates are derived from multiple sources, including historical man-hour data, resource allocation pricing quotes from suppliers for necessary services, and corresponding cost estimates from similar projects within NYSEG and RG&E. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, as more detailed information becomes available.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 10         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 814        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 814        |  |  |
| # Internal - Non-AC    | \$ 48         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 48         |  |  |
| # Internal, Labor      | \$ 11         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 11         |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 882</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 882</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

[illegible]

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 138          | \$ 33           | \$ 105          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,683        | \$ 981          | \$ 702          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 533          | \$ 209          | \$ 324          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,355</b> | <b>\$ 1,224</b> | <b>\$ 1,131</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## RGE STORM ELECTRIC

### PROJECT INFORMATION

|                                          |                                             |                                                |                                            |                                       |
|------------------------------------------|---------------------------------------------|------------------------------------------------|--------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric | <b>Project ID:</b><br>UI-RS000-RGE-ED       | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Matyjas, Walter | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Storms          | <b>Rate Case Category</b><br>Customer Focus | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>1/1/2026             | <b>In-Service Date:</b><br>12/31/2026 |

**Project description:**

Division T&D Program pertains to various customer driven and growth/reliability work in each of the NYSEG Operating Areas. Project totals tied to these blankets are below the Major Project threshold of \$200K.

**Project Scope:**

Division T&D Program pertains to various customer driven and growth/reliability work in each of the NYSEG Operating Areas. Project totals tied to these blankets are below the Major Project threshold of \$200K.

**Project Benefits:**

Storm Electric blanket for distribution and/or transmission broken pole and/or conductor replacement during a qualifying storm event.

**Project Risks and Mitigation Plan:**

This is a reactive program subject to weather related incidents and expanded storm restoration activities.

|                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Risk of No Action:</b><br>Failure to fund and execute storm related repairs would lead to regulatory review with the state of New York and poor customer satisfaction ratings |
| <b>Project Alternatives:</b><br>N/A                                                                                                                                              |
| <b>Basis for Project Estimates</b><br>Based on 3 years of historical data                                                                                                        |

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2021            | 2022            | 2023            | 2024          | 2025            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 460           | \$ 81           | \$ 192          | \$ 156          | \$ 8          | \$ 23           |  |  |
| # CIAC                 | \$ -115          | \$ -            | \$ -43          | \$ -36          | \$ -25        | \$ -11          |  |  |
| # External Services    | \$ 12,616        | \$ 2,854        | \$ 4,130        | \$ 2,648        | \$ 183        | \$ 2,802        |  |  |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -          | \$ -            |  |  |
| # Internal, Labor      | \$ 125           | \$ 18           | \$ 23           | \$ 33           | \$ 18         | \$ 34           |  |  |
| # Internal, Overheads  | \$ 759           | \$ 183          | \$ 120          | \$ 55           | \$ 45         | \$ 356          |  |  |
| # Materials            | \$ 494           | \$ 17           | \$ 28           | \$ 58           | \$ 174        | \$ 217          |  |  |
| # Overheads - External | \$ 1,818         | \$ 409          | \$ 362          | \$ 203          | \$ 99         | \$ 745          |  |  |
| <b>Total</b>           | <b>\$ 16,157</b> | <b>\$ 3,561</b> | <b>\$ 4,811</b> | <b>\$ 3,116</b> | <b>\$ 501</b> | <b>\$ 4,166</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total            | 2026            | 2027            | 2028            | 2029            | 2030            |             |             |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 594           | \$ 119          | \$ 119          | \$ 119          | \$ 119          | \$ 119          |             |             |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |             |             |
| # External Services    | \$ 11,600        | \$ 2,320        | \$ 2,320        | \$ 2,320        | \$ 2,320        | \$ 2,320        |             |             |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |             |             |
| # Internal, Labor      | \$ 122           | \$ 24           | \$ 24           | \$ 24           | \$ 24           | \$ 24           |             |             |
| # Internal, Overheads  | \$ 366           | \$ 73           | \$ 73           | \$ 73           | \$ 73           | \$ 73           |             |             |
| # Materials            | \$ 434           | \$ 87           | \$ 87           | \$ 87           | \$ 87           | \$ 87           |             |             |
| # Overheads - External | \$ 1,106         | \$ 221          | \$ 221          | \$ 221          | \$ 221          | \$ 221          |             |             |
| <b>Total</b>           | <b>\$ 14,222</b> | <b>\$ 2,844</b> | <b>\$ 2,844</b> | <b>\$ 2,844</b> | <b>\$ 2,844</b> | <b>\$ 2,844</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **NYSEG Electric Modernization**

## EMS/ADMS Deployment

### PROJECT INFORMATION

|                                                |                                         |                                         |                                    |                                     |
|------------------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG                          | <b>Project ID:</b><br>UI-N0160-NYSEG-ED | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Electric Distribution | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Chapero, Jorge | <b>Start Date:</b><br>H1 2027      | <b>In-Service Date:</b><br>H2 2030  |

#### Project description:

The EMS/ADMS Replacement Project will bring all Avangrid (Electric) Operating Companies onto the same EMS (Energy Management System) and ADMS (Advanced Distribution Management System) platforms. This will be a multiple year effort, with a staggered implementation approach, focusing on one Operating Company at a time for deployment. The goal is to replace existing EMS and OMS (Outage Management System) systems with one unified EMS/ADMS solution.

The first phase of this project will focus on requirements gathering, implementation planning, and vendor selection for all Operating Companies. NYSEG & RGE utilize the same EMS/OMS solution and will be part of this discovery effort in 2025.

#### Project Scope:

This project will replace EMS and OMS systems at all 3 Avangrid Electric ECC's (Energy Control Centers); which includes NY, CMP, and UI. These complex systems are currently on different software and platforms. This project will provide a single unified solution for all our electric ECCs. The project will include updates to hardware, software, and infrastructure.

The project will begin with a discovery phase and will require 2 RFPs - one for a System Integrator and another for the software vendor. The discovery phase of this project will take place throughout 2025, and will focus on requirements gathering, implementation planning and vendor selection. NYSEG & RGE will have a key role during this phase, along with CMP & UI. In 2026, we will begin implementation of the new system, starting with NYSEG & RGE. We anticipate a staggered approach for implementation, with roughly a 2 year effort for each operating company, however, specific details will be provided from the discovery phase.

Below is the estimated timeline for NY:

- 2025 - Discovery phase - Requirements gathering, Implementation Planning, and Vendor Selection
- 2026-2027 NY Implementation (impacts NYSEG & RGE)

#### Project Benefits:

- Platform Lifecycle – current solutions are at or beyond expected lifespan
- Technological Obsolescence – reducing performance, security, vendor support
- Regulatory compliance including new requirements (FERC Orders 881 and 2222)
- New system and new technology can offer expanded and improved performance and functionality
- Advanced ADMS – provides more robust functionality, utilizing control capabilities of electric infrastructure
- Single unified solution across Avangrid
- Knowledge base across all users and administrators
- Centralized Operations and Redundancy
- Unified Licensing and Management
- Unified Vendor Support
- Unified Training

### **Project Risks and Mitigation Plan:**

1 – There's a risk with our internal resources around availability, bandwidth, and consistency (long term project) for technical and project management roles. Additional risk around availability of ECC personnel and engagement with union employees.

Impact: timeline and quality

Preventative measures: Plan for project roles to have more than one person to support; work with leadership for resource commitments; build a detailed project timeline so that no more than one Operating Company implementation at time; work with union leadership; work with system integrator(s) and vendors to provide technical and project support

Contingency Plan: Plan for flexibility with our vendors to provide additional resources as needed. Plan early on for any additional FTEs that may be needed.

2 – There's a critical risk regarding the Infrastructure that support these systems. Some key concern is available physical space within our current data centers and back-up data centers to house this equipment. Cybersecurity, system redundancy, and disaster recovery requirements will drive the need for additional hardware and data center space, but are each critical components for a safe and robust ADMS system. There should be a plan for future data center space requirements to account for software and hardware obsolescence, due to the extended timeframe of these implementations.

Impact: timeline & budget

Preventative measures: Create detailed plans with Infrastructure, Cybersecurity, Facilities, and ECC very early on in the project to understand all requirements. Work with OSG, IT and Facilities to plan data center space. Explore use of cloud and virtualization, in order to reduce physical space requirements. Plan for a Data Center Lead role with the system integrator.

Contingency Plan: Explore purchase/rental of data center space.

3 – There may be key related projects, such as, GMEP, NY AMI, SAP HANA, that will have dependencies with this project. This can impact timelines for all projects and needs to be carefully coordinated.

Impact: quality & timeline

Preventative measures: Work with leadership, PMO and PMs to learn about projects that may have an impact or dependency on this project.

Coordinate with PMs for any dependent projects.

Contingency Plan: Adjust timelines and implementation plans to align with other project dependencies

### **Risk of No Action:**

1. Outdated hardware and software of these critical ECC (Energy Control Center) systems can pose a reliability and operational risk. This would make controlling the grid very manual, increasing the restoration time and possibility of regulatory fines. These types of systems require the ability to react immediately to issues in the field, impacting our SAIFI and CAIDI numbers.

2. Reliability and Customer impact: The ECC would not be able to take advantage of new functionality that allows for remote restoration which improves SAIFI and CAIDI numbers. Would also not have access to new functionality related to FERC orders, such as, 881 for AAR (Ambient Adjusted Ratings) and 2222 DERMS (Distributed Energy Resource Management System).

3. Safety of field operations impacted due to need for manual intervention of field devices, as opposed to remote management of these devices, such as, reclosers and switches. Today's outdated systems do not allow for full remote disconnection of these devices, which would make operations safer, which increases the safety risk for our field personnel.

4. There is the potential for extensive social and corporate impacts if our distribution and/or transmission system fails. This failure has NPCC (Northeast Power Coordinating Council) implications and potential fines. These types of system failure would be highly visible to our customers and decrease our reliability and have a reputational impact.

### **Project Alternatives:**

The project did an early analysis of the following:

- Implementing all Operating Companies to the current (NY and CMP) Siemens Spectrum
- Implementing all Operating Companies to the current (UI) ABB Hitachi Energy System
- Submitting an RFP to explore other vendor options

These options were presented to leadership and it was determined that the best approach was to submit an RFP and select the most appropriate vendor.

They decided to go out to the market and investigate the different, most advanced available options to cover the requirements of Operations, rather than staying with one of the current systems, with the intent of finding an industry leading solution in North America.

Also, with regards to Siemens Spectrum, there have been several times when the Tech Support has not met expectations and there have been numerous system failures, which led our senior leadership to the decision to look for other solutions. Resources constraints, delays in the timeline and budget overspend have also been known issues with this vendor.

Before the decision, the project team met with several neighboring utilities to investigate the system being used, and find out their pros and cons.

Although the final decision on what vendor will be used to install the ADMS system is still to be determined, it is clear the team will begin the RFP process to find a solution in the market.



The team captured budget information from previous Avangrid EMS/OMS projects. These were used to estimate timing, effort and cost for this project. At a high level, the team determined a staggered two year implementation schedule per state (NY, ME, CT), which makes the overall implementation a six year effort, starting in 2026.

In 2025, the team will engage with a system integrator to conduct an ADMS Readiness effort, which will include a robust business case with a cost analysis that will provide more accurate estimates of time, scope and cost.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## MV90/IEE Service Mode

### PROJECT INFORMATION

|                                           |                                            |                                              |                                                 |                                    |
|-------------------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-003619           | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2025                   | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Currently, MV90 is used to collect data from meters that require interval data. There is opportunity to exchange a large majority of these for AMI meters, but enhancements are required. The IEE (Itron Enterprise Edition) Service Mode implementation project includes addition of the IEE Service Mode and interval billing determinant calculation. The Service Mode solution will support Avangrid's data collection and management requirements in New York.

#### Project Scope:

NYSEG and RG&E currently have ~1,800 meters that require interval data including MHP, Net Meter Installations, and other accounts. By 2026, Net Meter Installations projected volume is expected to double, adding an additional 350 meters to the system. Existing meters will be exchanged for AMI meters, and IEE Service Mode and interval billing determinants will be implemented to replace the functionality of AMI and automate some tasks required for billing.

**\*\*2025 update** - The original scope has been under discussion. We have been involved in discussions with Itron and it has been determined there will most likely be 3 phases:

Phase1) Simple Interval / RKVAH read customers that are not using EOP for interval data – Converted to AMI meter- This phase is where most of the SAP changes will be taken.

Phase2) More complex where something is modified for usage to be used for billing (i.e. subtractive or additive of more than one meter – Converted to AMI meter).

Phase3) True Service mode implementation – Meter stays MV90 but Service mode does the communication.

Current estimate for a projected start time for the project is April 2025 to September 2026.

#### Project Benefits:

~1800 of our largest and most high profile customers are on an antiquated meter system that relies on phone lines and manual intervention, which delays billing. This project will allow us to leverage our state of the art AMI system to better serve these customers.

Benefits include more timely and accurate bills to customers, elimination of manual work, and a more sustainable model to accommodate future growth.

#### Project Risks and Mitigation Plan:

Customers impacted by this project are high profile and/or some of NYSEG and RG&E's largest accounts. If there are defects or shortcomings in the project design, testing, or implementation there is a risk of lost revenue, customer dissatisfaction, PSC complaints, and Negative Revenue Adjustments resulting from missed Regulatory targets.

#### Risk of No Action:

Plain Old Telephone Service (POTS) lines are required to communicate data from meters to the MV90 system. POTS lines are becoming obsolete and are no longer being installed by many telephone companies. Meters with built in cellular service are an option for some but not all meters based on cell service coverage across the state. Many cell meters use 2G service which is also being phased out. When communication with the meters is not possible, data must be downloaded manually by a meter tech (NYSEG twice a month due to 5-minute intervals as opposed to 15-minute intervals at RG&E). Phone line issues result in lost data requiring time-consuming editing to estimate and fill in the usage and generation gaps. Troubleshooting issues currently requires .31 FTE. Delayed bills caused by communication failures negatively impact customer satisfaction. The current state also jeopardizes the State's CLCPA goals because NYSEG and RG&E's current requirement for customers to install a dedicated telephone line to transmit data from an interval meter can be looked at as a deterrent for them to install DER (Distributed Energy Resource) systems.

The alternative to moving forward with this project is to leave things status quo, as outlined in the project scope outlined above.

The project cost estimates encompass required internal labor and external services. These estimates are derived from multiple sources, including an analysis performed by IT and function business areas, in conjunction with a budgetary quote from Itron for their services. Project estimates will be revisited and revised if applicable as specific requirements are mapped out and as more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Java SS Microgrid BESS

### PROJECT INFORMATION

|                                   |                                            |                                              |                                           |                                    |
|-----------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-001543           | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Fairchild, Jon | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG's Java electric substation, located in the town of Java, Wyoming County, within NYSEG's Lancaster Division, comprises three 34.5-4.8 kV 1.667 MVA transformers, providing a total substation bank capacity of 5 MVA. This substation serves approximately 1,700 residential and small commercial customers via two 4.8 kV distribution circuits: circuit #280 and circuit #281. The identified needs for either a traditional wires solution or a Non-Wires Alternative (NWA) solution include reducing the peak loading on the individual transformer bank to below its nameplate rating of 5 MVA, addressing reliability and power quality issues on the Java circuit #280, and mitigating the potential risk of existing transformer failure.

The proposed Java Substation Microgrid will address the reliability need for a substation transformer loss through the installation of a Microgrid utilizing a Battery Energy Storage System (BESS). This innovative solution, one of the first of its kind in New York, does not sell energy back into the market. The Microgrid, owned by NYSEG, will provide backup to multiple substation circuits during outages.

The project aims to use batteries and a fault current source to maintain backup capacity for operating an electrical island on the Java 4.8 kV distribution circuits during network contingencies, preventing extended power loss for customers. In the event of a transformer bank or transmission line #520 failure, over 1,700 customers on two distribution circuits would experience an outage. If these events took place, a mobile substation must be deployed and connected. This process takes a minimum of 8 hours due to the lack of circuit ties for load transfer.

The identified project needs, whether through a traditional wires solution or a Non-Wires Alternative (NWA), include:

- 1.) Reducing peak loading on the transformer bank to below its 5 MVA nameplate rating,
- 2.) Addressing reliability and power quality issues on the Java circuit #280, and
- 3.) Mitigating the potential risk of existing transformer failure.

The project team completed conceptual drawings and developed the battery RFP, which was released in December 2022. They subsequently began reviewing the technical bids for the battery. The team was in the process of reviewing and assessing the total project costs and updated BCA with the preliminary equipment prices received; however, these activities were placed on hold pending further review of the BCA and the outcome of the 2022 rate case.

The project team met with the DPS Staff on September 28, 2023, to discuss the project, budget, schedule, and BCA. Due to higher-than-budgeted equipment costs based on market conditions during the Battery RFP, the overall project costs were estimated to be a minimum of \$33.5 million and a maximum of \$42.4 million. The original BCA ratio was 1.24, which included a peak shaving portion that has since been separated into another project and placed on hold. Based on the mid-range estimated project costs of \$39.3 million, the re-estimated BCA is 0.42 for the project. NYSEG recommended to the DPS Staff that the Java Microgrid Project be put on hold until 2027.

#### Project Scope:

The Java Microgrid will feature a NYSEG-owned 4 MW/35 MWh Battery Energy Storage System (BESS) with an 8 MVA inverter. This 35 MWh BESS will serve as the primary grid-forming source for the microgrid, capable of supporting loads during outages for up to 8 hours under most operating conditions. The Java substation, located in the town of Java, Wyoming County, within the Lancaster Division, currently includes a 5 MVA (3 x 1667 kVA) transformer bank and two 4.8 kV distribution circuits (Java #280 and #281).

The project encompasses several key components: determining the appropriate battery size, leasing or purchasing real estate, engineering, procuring equipment and a microgrid controller, as well as construction, testing, and commissioning.

The key steps when revisiting the project in 2027 will be as follows:

- 1.) Revisit the Need Statement, Load Data, and Battery Sizing for the project. If needed, adjust the battery size.
- 2.) Complete an update of the Traditional Solution Scope and Cost Estimate.
- 3.) Complete an update of the Java Microgrid Cost Estimate.
- 4.) Complete an update of the BCA.
- 5.) Avangrid Steering Committee to review the BCA.
- 6.) Meet with DPS Staff to review cost estimates and determine the path forward.

**Project Benefits:**

This project proposes utilizing batteries and a fault current source to provide backup capacity for operating an electrical island on the Java 4.8 kV distribution circuits during network contingencies, thereby preventing extended power loss for customers. The project aims to prevent outages for over 1,700 customers on two distribution circuits in the event of a transformer bank or transmission line #52 failure. Currently, a mobile substation must be deployed and connected, a process that can take up to 12 hours due to the lack of circuit ties for load transfer.

NYSEG's ownership and implementation of an energy storage microgrid solution offer opportunities for the company to gain integration and operational experience. This experience will support the development of advanced technologies and distributed energy resources (DER), such as battery storage, across NYSEG's service territory.

**Project Risks and Mitigation Plan:**

If battery costs increase it may result in the benefit-cost analysis (BCA) falling below 1, rendering the project non-viable. This project will be evaluated and re-bid in 2027. Alternative battery sizes and scenarios will be considered to meet BCA requirements and ensure project feasibility.

There is a risk that the transformer may fail and be replaced with a larger unit, potentially negating the need for the Microgrid. Additionally, there is a risk that the landowner may refuse to lease or sell the land required for the Microgrid installation on their farm. We have previously engaged in discussions with the landowner to mitigate this risk and will reconvene these discussions as the project progresses.

If the Microgrid does not move forward, a traditional solution will need to be implemented.

**Risk of No Action:**

If this project is not pursued, a loss of the transformer bank or transmission line will result in an outage for 1,700 customers until a mobile substation can be set up, which takes a minimum of 8 hours. In such a scenario, a traditional solution would need to be implemented.

**Project Alternatives:**

1. The proposed traditional wires solution alternative was to replace the existing 5 MVA transformer bank with two (2) new 14 MVA LTC 34.5-12.47 kV units, install 12.5 kV Gas Insulated Switchgear, and a new control house. The proposed wires alternative also includes a 12.5 kV conversion of Java circuit #280 and #281 and a new second 34.5 kV transmission line to create an in-and-out configuration to provide a redundant sub-transmission supply ("N-1"). The estimated costs for the proposed traditional solution alternative as of April 2019 were \$35.8 million.
2. A BESS size of 26 MWh, 35 MWh, 44 MWh, and 52 MWh was reviewed, and success rates and costs estimates. The project cost estimate ranges were from \$10M to \$26M for construction and equipment, without overheads.
3. A synchronous condenser was evaluated as an alternative to a larger inverter, but it would add \$1.2M to the base costs.
4. BESS connected to the Substation Bus versus one of the circuits was reviewed but connecting to the bus would add an additional \$1M costs for substations upgrades.

**Basis for Project Estimates**

The battery request for proposals (RFP) in 2022 resulted in higher-than-budgeted battery costs, increasing the overall project expenses. The project costs are now estimated to range between \$33.5 million and \$42.4 million. Consequently, the project is currently on hold until 2027.

The cost estimates include required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. Additionally, applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses and more detailed information becomes available.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021          | 2022          | 2023          | 2024         |  |  |
|------------------------|-----------------|-------------|---------------|---------------|---------------|--------------|--|--|
| # AFUDC                | \$ 162          | \$ -        | \$ 7          | \$ 32         | \$ 55         | \$ 68        |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -         |  |  |
| # External Services    | \$ 708          | \$ -        | \$ 233        | \$ 297        | \$ 177        | \$ -         |  |  |
| # Internal - Non-AC    | \$ 24           | \$ -        | \$ 9          | \$ 15         | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ 10           | \$ -        | \$ 9          | \$ 2          | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ 88           | \$ -        | \$ 35         | \$ 33         | \$ 20         | \$ -         |  |  |
| # Materials            | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -         |  |  |
| # Overheads - External | \$ 150          | \$ -        | \$ 51         | \$ 56         | \$ 42         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 1,143</b> | <b>\$ -</b> | <b>\$ 344</b> | <b>\$ 435</b> | <b>\$ 295</b> | <b>\$ 68</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025         | 2026         | 2027             | 2028            | 2029            | 2030            | 2031        |
|------------------------|------------------|--------------|--------------|------------------|-----------------|-----------------|-----------------|-------------|
| # AFUDC                | \$ 5,085         | \$ 74        | \$ 79        | \$ 538           | \$ 1,751        | \$ 2,050        | \$ 593          | \$ -        |
| # CIAC                 | \$ -             | \$ -         | \$ -         | \$ -             | \$ -            | \$ -            | \$ -            | \$ -        |
| # External Services    | \$ 11,869        | \$ -         | \$ -         | \$ 1,708         | \$ 1,232        | \$ 2,455        | \$ 6,473        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -         | \$ -         | \$ -             | \$ -            | \$ -            | \$ -            | \$ -        |
| # Internal, Labor      | \$ 3,000         | \$ -         | \$ -         | \$ 951           | \$ 943          | \$ 951          | \$ 155          | \$ -        |
| # Internal, Overheads  | \$ 2,421         | \$ -         | \$ -         | \$ 1,464         | \$ 296          | \$ 224          | \$ 437          | \$ -        |
| # Materials            | \$ 16,938        | \$ -         | \$ -         | \$ 15,114        | \$ 1,824        | \$ -            | \$ -            | \$ -        |
| # Overheads - External | \$ 2,787         | \$ -         | \$ -         | \$ 1,482         | \$ 439          | \$ 385          | \$ 481          | \$ -        |
| <b>Total</b>           | <b>\$ 42,099</b> | <b>\$ 74</b> | <b>\$ 79</b> | <b>\$ 21,256</b> | <b>\$ 6,486</b> | <b>\$ 6,065</b> | <b>\$ 8,139</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **RG&E Electric Modernization**

## MV90/IEE Service Mode

### PROJECT INFORMATION

|                                           |                                            |                                              |                                                 |                                    |
|-------------------------------------------|--------------------------------------------|----------------------------------------------|-------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-003620           | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate       | <b>Start Date:</b><br>H1 2025                   | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Currently, MV90 is used to collect data from meters that require interval data. There is opportunity to exchange a large majority of these for AMI meters, but enhancements are required. The IEE (Itron Enterprise Edition) Service Mode implementation project includes addition of the IEE Service Mode and interval billing determinant calculation. The Service Mode solution will support Avangrid's data collection and management requirements in New York.

#### Project Scope:

NYSEG and RG&E currently have ~1,800 meters that require interval data including MHP, Net Meter Installations, and other accounts. By 2026, Net Meter Installations projected volume is expected to double, adding an additional 350 meters to the system. Existing meters will be exchanged for AMI meters, and IEE Service Mode and interval billing determinants will be implemented to replace the functionality of AMI and automate some tasks required for billing.

**\*\*2025 update -** The original scope has been under discussion. We have been involved in discussions with Itron and it has been determined there will most likely be 3 phases:

Phase1) Simple Interval / RKVAH read customers that are not using EOP for interval data – Converted to AMI meter- This phase is where most of the SAP changes will be taken.

Phase2) More complex where something is modified for usage to be used for billing (i.e. subtractive or additive of more than one meter – Converted to AMI meter).

Phase3) True Service mode implementation – Meter stays MV90 but Service mode does the communication.

Current estimate for a projected start time for the project is April 2025 to September 2026.

#### Project Benefits:

~1800 of our largest and most high profile customers are on an antiquated meter system that relies on phone lines and manual intervention, which delays billing. This project will allow us to leverage our state of the art AMI system to better serve these customers.

Benefits include more timely and accurate bills to customers, elimination of manual work, and a more sustainable model to accommodate future growth.

#### Project Risks and Mitigation Plan:

Customers impacted by this project are high profile and/or some of NYSEG and RG&E's largest accounts. If there are defects or shortcomings in the project design, testing, or implementation there is a risk of lost revenue, customer dissatisfaction, PSC complaints, and Negative Revenue Adjustments resulting from missed Regulatory targets.

#### Risk of No Action:

Plain Old Telephone Service (POTS) lines are required to communicate data from meters to the MV90 system. POTS lines are becoming obsolete and are no longer being installed by many telephone companies. Meters with built in cellular service are an option for some but not all meters based on cell service coverage across the state. Many cell meters use 2G service which is also being phased out. When communication with the meters is not possible, data must be downloaded manually by a meter tech (NYSEG twice a month due to 5-minute intervals as opposed to 15-minute intervals at RG&E). Phone line issues result in lost data requiring time-consuming editing to estimate and fill in the usage and generation gaps. Troubleshooting issues currently requires .31 FTE. Delayed bills caused by communication failures negatively impact customer satisfaction. The current state also jeopardizes the State's CLCPA goals because NYSEG and RG&E's current requirement for customers to install a dedicated telephone line to transmit data from an interval meter can be looked at as a deterrent for them to install DER (Distributed Energy Resource) systems.



The alternative to moving forward with this project is to leave things status quo, as outlined in the project scope outlined above.

The project cost estimates encompass required internal labor and external services. These estimates are derived from multiple sources, including an analysis performed by IT and function business areas, in conjunction with a budgetary quote from Itron for their services. Project estimates will be revisited and revised if applicable as specific requirements are mapped out and as more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## EMS/ADMS Deployment

### PROJECT INFORMATION

|                                                |                                  |                                         |                                    |                                     |
|------------------------------------------------|----------------------------------|-----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E                           | <b>Project ID:</b><br>PRJ-000318 | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Electric Distribution | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Chapero, Jorge | <b>Start Date:</b><br>H2 2027      | <b>In-Service Date:</b><br>H2 2030  |

#### Project description:

The EMS/ADMS Replacement Project will bring all Avangrid (Electric) Operating Companies onto the same EMS (Energy Management System) and ADMS (Advanced Distribution Management System) platforms. This will be a multiple year effort, with a staggered implementation approach, focusing on one Operating Company at a time for deployment. The goal is to replace existing EMS and OMS (Outage Management System) systems with one unified EMS/ADMS solution.

The first phase of this project will focus on requirements gathering, implementation planning, and vendor selection for all Operating Companies. NYSEG & RGE utilize the same EMS/OMS solution and will be part of this discovery effort in 2025.

#### Project Scope:

This project will replace EMS and OMS systems at all 3 Avangrid Electric ECC's (Energy Control Centers); which includes NY, CMP, and UI. These complex systems are currently on different software and platforms. This project will provide a single unified solution for all our electric ECCs. The project will include updates to hardware, software, and infrastructure.

The project will begin with a discovery phase and will require 2 RFPs - one for a System Integrator and another for the software vendor. The discovery phase of this project will take place throughout 2025, and will focus on requirements gathering, implementation planning and vendor selection. NYSEG & RGE will have a key role during this phase, along with CMP & UI. In 2027, we will begin implementation of the new system, starting with NYSEG & RGE. It is anticipated that NYSEG & RGE's system implementation will take place from 2027-2030, however, specific details will be provided from the discovery phase.

Below is the estimated timeline for NY:

- 2025 - Discovery phase - Requirements gathering, Implementation Planning, and Vendor Selection
- 2027-2030 NY Implementation (impacts NYSEG & RGE)

#### Project Benefits:

- Platform Lifecycle – current solutions are at or beyond expected lifespan
- Technological Obsolescence – reducing performance, security, vendor support
- Regulatory compliance including new requirements (FERC Orders 881 and 2222)
- New system and new technology can offer expanded and improved performance and functionality
- Advanced ADMS – provides more robust functionality, utilizing control capabilities of electric infrastructure
- Single unified solution across Avangrid
- Knowledge base across all users and administrators
- Centralized Operations and Redundancy
- Unified Licensing and Management
- Unified Vendor Support
- Unified Training

### **Project Risks and Mitigation Plan:**

1 – There's a risk with our internal resources around availability, bandwidth, and consistency (long term project) for technical and project management roles. Additional risk around availability of ECC personnel and engagement with union employees.

- Impact: timeline and quality
- Preventative measures: Plan for project roles to have more than one person to support; work with leadership for resource commitments; build a detailed project timeline so that no more than one Operating Company implementation at time; work with union leadership; work with system integrator(s) and vendors to provide technical and project support
- Contingency Plan: Plan for flexibility with our vendors to provide additional resources as needed. Plan early on for any additional FTEs that may be needed.

2 – There's a critical risk regarding the Infrastructure that support these systems. Some key concern is available physical space within our current data centers and back-up data centers to house this equipment. Cybersecurity, system redundancy, and disaster recovery requirements will drive the need for additional hardware and data center space, but are each critical components for a safe and robust ADMS system. There should be a plan for future data center space requirements to account for software and hardware obsolescence, due to the extended timeframe of these implementations.

- Impact: timeline & budget
- Preventative measures: Create detailed plans with Infrastructure, Cybersecurity, Facilities, and ECC very early on in the project to understand all requirements. Work with OSG, IT and Facilities to plan data center space. Explore use of cloud and virtualization, in order to reduce physical space requirements. Plan for a Data Center Lead role with the system integrator.
- Contingency Plan: Explore purchase/rental of data center space.

3 – There may be key related projects, such as, GMEP, NY AMI, SAP HANA, that will have dependencies with this project. This can impact timelines for all projects and needs to be carefully coordinated.

- Impact: quality & timeline
- Preventative measures: Work with leadership, PMO and PMs to learn about projects that may have an impact or dependency on this project. Coordinate with PMs for any dependent projects.
- Contingency Plan: Adjust timelines and implementation plans to align with other project dependencies.

### **Risk of No Action:**

1. Outdated hardware and software of these critical ECC (Energy Control Center) systems can pose a reliability and operational risk. This would make controlling the grid very manual, increasing the restoration time and possibility of regulatory fines. These types of systems require the ability to react immediately to issues in the field, impacting our SAIFI and CAIDI numbers.

2. Reliability and Customer impact: The ECC would not be able to take advantage of new functionality that allows for remote restoration which improves SAIFI and CAIDI numbers. Would also not have access to new functionality related to FERC orders, such as, 881 for AAR (Ambient Adjusted Ratings) and 2222 DERMS (Distributed Energy Resource Management System).

3. Safety of field operations impacted due to need for manual intervention of field devices, as opposed to remote management of these devices, such as, reclosers and switches. Today's outdated systems do not allow for full remote disconnection of these devices, which would make operations safer, which increases the safety risk for our field personnel.

4. There is the potential for extensive social and corporate impacts if our distribution and/or transmission system fails. This failure has NPCC (Northeast Power Coordinating Council) implications and potential fines. These types of system failure would be highly visible to our customers and decrease our reliability and have a reputational impact.

### **Project Alternatives:**

The project did an early analysis of the following:

- Implementing all Operating Companies to the current (NY and CMP) Siemens Spectrum
- Implementing all Operating Companies to the current (UI) ABB Hitachi Energy System
- Submitting an RFP to explore other vendor options

These options were presented to leadership and it was determined that the best approach was to submit an RFP and select the most appropriate vendor.

They decided to go out to the market and investigate the different, most advanced available options to cover the requirements of Operations, rather than staying with one of the current systems, with the intent of finding an industry leading solution in North America.

Also, with regards to Siemens Spectrum, there have been several times when the Tech Support has not met expectations and there have been numerous system failures, which led our senior leadership to the decision to look for other solutions. Resources constraints, delays in the timeline and budget overspend have also been known issues with this vendor.

Before the decision, the project team met with several neighboring utilities to investigate the system being used, and find out their pros and cons.

Although the final decision on what vendor will be used to install the ADMS system is still to be determined, it is clear the team will begin the RFP process to find a solution in the market.

The team captured budget information from previous Avangrid EMS/OMS projects. These were used to estimate timing, effort and cost for this project. At a high level, the team determined a staggered two year implementation schedule per state (NY, ME, CT), which makes the overall implementation a six year effort, starting in 2026.

In 2025, the team will engage with a system integrator to conduct an ADMS Readiness effort, which will include a robust business case with a cost analysis that will provide more accurate estimates of time, scope and cost.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **NYSEG Electric Innovation**

## NYSEG IEDR Phase II

### PROJECT INFORMATION

|                                                     |                                         |                                                |                                       |                                    |
|-----------------------------------------------------|-----------------------------------------|------------------------------------------------|---------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                               | <b>Project ID:</b><br>PRJ-003865        | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Ras, Shawn | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Processes and Technologies | <b>Rate Case Category</b><br>Innovation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Apr-2024        | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The Integrated Energy Data Resource project is mandated by the Public Service Commission (Case #20-M-0082 Proceeding on Motion of the Commission Regarding Strategic Use of Energy Related Data). The creation of an IEDR platform will serve to expedite effective and expanded access to useful energy data for all types of users, including Energy Service Entities, utilities, governmental agencies, ... The Commission directed that the development of the IEDR be executed in two phases, Phase 1 and Phase 2. Phase 1 started in February 2021 and finished in March 2024 with the release of the IEDR Minimum Viable Product (MVP). In Phase 2 the IEDR's capabilities will be expanded with the addition of approximately 40 use cases. This project is to implement NYSEG's portion of Phase II

#### Project Scope:

According to the IEDR Order, Phase 1, the initial IEDR implementation should have enabled at least five of the highest priority use cases. Program Phase 1 finally covered the following use cases:

- Installed Distributed Energy Resources (DER) and Planned DER. DERs are critical to the state's Climate Leadership and Community Protection Act. DER data is provided on a monthly basis and contains assets of 5 megawatts or less connected in parallel with utility distribution systems.
- Photovoltaic Hosting Capacity Maps: An estimate of the amount of solar generation that may be accommodated without adversely impacting power quality or reliability under current configurations and without requiring infrastructure upgrades.
- Electrification Hosting Capacity Maps: amount of electric power that can be supplied to EVs without overloading the grid.
- Battery Energy Storage Hosting Capacity Maps: An estimate of the amount of charging and discharging that may be accommodated without adversely impacting power quality or reliability under current configurations and without requiring infrastructure upgrades.
- Rate Plan Browser: A central repository of structured, machine-readable data from participating IEDR utilities that is in a standardized form for populating analytical tools used for rate plan modeling. It is a powerful tool that optimizes rate plan data access for users who gather and utilize electric, gas, and steam rate plan data to make informed recommendations and decisions.

Phase 2 shall expand and enhance the initial IEDR to enable approximately an additional forty use cases incrementally, building upon the success of Phase 1. For each of those use cases, NYSEG will gather, format, transform and transfer internal data to NYSERDA's (New York State Energy Research and Development Authority) Development team.

#### Project Benefits:

New York is transforming its electricity system into one that is cleaner, more resilient, and more affordable. Effective access to useful energy data will play a critical role in this transformation, unleashing the power of integrated energy customer data and energy system data to speed the deployment of clean energy solutions. This will attract investment, enable analytics, help identify operational efficiencies, promote innovation, and encourage new business models, which will in-turn create value for customers and the State's energy system. The creation of an Integrated Energy Data Resource (IEDR) will provide New York's energy stakeholders with a platform that enables effective access and use of such integrated energy customer data and energy system data.

Expected benefits from the project include:

- Informed Investment Decisions: By providing centralized access to useful energy data, the IEDR will help stakeholders make better investment decisions.
- Operational Efficiency: The platform will identify operational inefficiencies, allowing for improvements in energy system operations.
- Policy Effectiveness: Monitoring the effectiveness of policy objectives will be easier with the data and insights provided by the IEDR.
- Innovation and New Business Models: The IEDR will promote innovation and support the development of new clean energy business models.
- Customer Benefits: Ultimately, these improvements will benefit New York energy customers by making the energy system more reliable and cost-effective.

**Project Risks and Mitigation Plan:****Data Management and Governance Risks**

Business units operate in silos, creating their own data assets, models, and repositories that are not aligned with those of other units. There is no universal data repository, leading to bureaucratic hurdles in accessing and gathering data. A lack of standardized data governance practices across the company could increase the cost of the IEDR due to additional tasks needed to ensure data quality. Multiple, unharmonized data models further complicate the process, potentially increasing costs. Complexities in automating data sets, customer consent management costs, and necessary modifications to SAP or other source systems are not included in the budget. Limited bandwidth of data owner SMEs and company resources, along with competing priorities, pose additional challenges. Furthermore, the lack of internal resources to manually create and maintain data reports, and the absence of data repositories for some operational systems, necessitate manual data gathering.

**Mitigation**

The completion of ongoing plans and projects that will deliver data and improve their quality (including but not limited to: DSIP, automation, resiliency, Grid Model Enhancement Project (GMEP), AMI) is key for a better implementation of the IEDR in our Companies.

**Project Management and Planning Risks**

The high level of uncertainty and complexity makes it difficult to accurately estimate the total cost and efforts, as there was no clear roadmap for Phase 1 use case deployment. This necessitated a certain level of iteration and rework. Additionally, changes in requested data elements and use cases impacted the estimated working hours for each role, while short notice actions may require additional resources and budget. Furthermore, assuming that the Platforms Administrator will not need to work on additional integrations with the Data Assessment tool is a risk that could affect the project's timeline and budget.

**Mitigation**

To mitigate the identified risks, it was deployed and implemented specialized data lifecycle and management tools, which reduced project complexity and resource requirements. Integrating small business databases into the data lake also reduced complexity, though data extraction from various source systems like SAP, GIS, EMS, and MDM may require additional time and resources. Reviewing project requirements and consulting with the Azure platform and data assessment tool administrator to identify necessary tools or services in advance, along with continuous monitoring and evaluation, to ensure optimal efficiency and cost-effectiveness.

**Risk of No Action:**

This program has been mandated by the Public Service Commission in the Integrated Energy Resource Order issued February 11, 2021. Not making the necessary investments to build the internal capabilities to meet the IEDR requirements will make Avangrid utilities not compliance with the Commission mandates.

**Project Alternatives:**

The pathway was defined by the PSC Order "Order Implementing an Integrated Energy Data Resource", released in February 11, 2021.

**Basis for Project Estimates**

The project cost estimates include the following categories:

-Internal Labor: The IEDR Order directed the Joint Utilities to "establish an Integrated Energy Data Resource Implementation Team, led by a member of the company's senior management team". To support implementation of such a team a total of 5 Full Time Equivalent (FTE) resources needed to be fully dedicated. They include a Project Director, Business Project Manager, Business Product Owner, Principal Data Scientist, Senior Data Engineer and It Project Manager. Also, numerous internal resources from different areas have collaborated and support the IEDR Use Cases.

-External Services: Additional resources were required for the IEDR by leveraging external services. External services were necessary to incorporate a unique set of skills or competencies required for IEDR not available in house or their bandwidth to dedicate to the IEDR is less than what it is required. These services included a Lead Data Analyst (responsible for data discovery, analysis, research, and identification) a Business Analyst (responsible for providing expert knowledge and identify the complexity of data sets, perform user acceptance testing and define configuration specifications), a Scrum Master (responsible for implementing project management and best practices, ensuring all parties being on track), a Solution Architect (responsible for the solution architect strategy) , Data Engineers (responsible for data automation and monitoring), Platform Admin (responsible for Azure platform management).

-AFUDC/OH: Allowance for funds used during construction, AFUDC, is a regulatory methodology of compensating a utility for the financing costs it incurs during construction of new facilities. Overheads are business costs that are related to the day-to-day running of the business. Unlike operating expenses, overheads cannot be traced to a specific cost unit or business activity. Instead, they support the overall revenue-generating activities of the business.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023        | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|--|--|
| # AFUDC                | \$ 64           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 64           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # External Services    | \$ 1,656        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,656        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Internal, Labor      | \$ 326          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 326          |  |  |
| # Internal, Overheads  | \$ 312          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 312          |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Overheads - External | \$ 527          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 527          |  |  |
| <b>Total</b>           | <b>\$ 2,885</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2,885</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 411          | \$ 165          | \$ 246          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,716        | \$ 1,861        | \$ 1,855        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 1,688        | \$ 691          | \$ 997          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 285          | \$ -            | \$ 285          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 354          | \$ 354          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 518          | \$ -            | \$ 518          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,971</b> | <b>\$ 3,071</b> | <b>\$ 3,900</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Stephentown BESS NYSEG

### PROJECT INFORMATION

|                                   |                                         |                                               |                                       |                                    |
|-----------------------------------|-----------------------------------------|-----------------------------------------------|---------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-003786        | <b>Charge Code:</b><br>Electric Distribution  | <b>Project Sponsor:</b><br>Mader, Jim | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects | <b>Rate Case Category</b><br>Innovation | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2025         | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

NYSEG's Stephenstown Substation Bank #1 is a 34.5 - 4.8 kV station located in the Mechanicville Division. The 2.5 MVA substation transformer has an average summer peak load of 97% of its nameplate. However, the load at the station has exceeded its nameplate rating in 2019 and 2021. While the loading is approaching the nameplate rating, these loading values are based on instantaneous reads. By factoring in the average peak 15-minute interval data, it is expected that continuous thermal loads will not occur for the next few years. To avoid these future potential overload issues, it is proposed to install Energy Storage at the substation which will result in peak demand reduction at the station and will increase the transformer loading efficiency.

Due to the rural location of the station, there is approximately 0.34 MW of interconnected residential DER (Distributed Energy Resources) on the substation transformer. Installing energy storage at the station will enhance this station's ability to host a higher level of proposed DER.

#### Project Scope:

Installing battery energy storage (1 MW/4MWh) at the substation will result in Peak Demand Reduction, increase the Transformer Loading Efficiency, and increase hosting capacity

As a secondary use case, the battery system will be used to optimize the use of the existing connected DER by using the peak daylight hours to charge the battery with the solar generation and discharge the battery during the evening hours to offset the peak load of the Station

#### Project Benefits:

1. Supports NY Policy goals – 6 GW energy storage goal
2. Supports new cost recovery pathway for energy storage currently under review by NY PSC (Case 18-E-0130)
3. Supports utility ownership of battery storage rather than a third-party owning and interconnecting storage to the NYSEG system for reliability
4. Ability to switch use cases seasonally and over time (e.g. peak shaving, hosting capacity support, etc.)
5. Leverage Investment Tax Credit (ITC) under Inflation Reduction Act (IRA) – Potential to reduce CapEx cost by 30-40%
6. Wholesale market revenues in NYISO reducing total cost of ownership over the life of the asset:

#### Project Risks and Mitigation Plan:

The project team has identified risks throughout the lifecycle of the project, and has used industry best practices to effectively develop a plan to mitigate these risks. Risks and mitigation efforts are present in the design, construction, commissioning, and project close out phases of the project. Examples of risks during the design phase include: unforeseen subsurface conditions, unidentified property owner rights, and design impacts not identified. Ways that we will mitigate these risks include, conducting detailed site visits, conducting necessary preparatory subsurface testing, and involving the appropriate project team members early (including permitting) to effectively plan solutions to these.

Examples of risks during the construction and commissioning phases of the project include: material delays, contractors giving us change orders for unresolved scope, and poor community relations during construction. Ways that we will mitigate these include proper procurement planning prior to construction, thoroughly reviewing scope with the contractor prior to agreement, and engaging NYSEG community relations representatives early to address public concern.

Examples of risks during project close are generally financial and administrative, and are very important to address. Ways that we will mitigate these are by effectively planning and managing our project budget throughout the project, resolving potential financial disputes in a timely manner, and adhering to all NYSEG guidelines when administratively closing out the project.

#### Risk of No Action:

The 2.5 MVA substation transformer may exceed nameplate rating and fail. It has an average summer peak load of 97% of its nameplate (load of 2.43 MVA). Load at the station has exceeded its nameplate rating in 2019 and 2021. While the loading is approaching the nameplate rating, these loading values are based on instantaneous reads. There is 0.47 MW of interconnected DER on the substation transformer that would also be at risk if the transformer fails.

1. Install 1.31 MW / 2.21 MWh BESS: Cost - \$2.2M, ISD - 2026, Pros - approved in rate case, supports NY State, PSC goals & Company goals, fast deployment of battery. Cons - Newer technology
2. 4 MVA In Kind Transformer Replacement, Cost: \$2.9M, ISD - 2028, Pros - Cost, Cons - 46 month project duration, project costs may increase due to possible contaminated soil.
3. Short Tie Line & New Padmount Transformer; Cost - \$3.9M, ISD - 2028, Pros - works around existing substation, leaving substation as backup as needed, ease of installation, Cons - 46 month project duration
4. Load Transfer onto Stephentown 621 Circuit: Cost - \$4.1M, ISD - 2026, Pros - Will reduce the loading on Stephentown 2.5MVA 4.8KV substation transformer from 100% to 68%, short deration project - 22mo, Cons - cost, additional risk due to line work (permitting, working along ROW)

**\*\*Perferred Solution is Option 1. BESS**

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 4          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 4          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 54         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 54         |  |  |
| # Internal - Non-AC    | \$ 106        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 106        |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ 22         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 22         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ 33         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 33         |  |  |
| <b>Total</b>           | <b>\$ 219</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 219</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 89           | \$ 62         | \$ 27         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 340          | \$ 335        | \$ 5          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 19           | \$ 18         | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 78           | \$ 26         | \$ 52         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 480          | \$ -          | \$ 480        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 75           | \$ 29         | \$ 46         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,081</b> | <b>\$ 470</b> | <b>\$ 611</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

| Wales Center Energy Storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |                                               |                                       |                                    |
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| PROJECT INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         |                                               |                                       |                                    |
| <b>OpCo:</b><br>NYSEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Project ID:</b><br>PRJ-003788        | <b>Charge Code:</b><br>Electric Distribution  | <b>Project Sponsor:</b><br>Mader, Jim | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Projects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Rate Case Category</b><br>Innovation | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>H1 2025         | <b>In-Service Date:</b><br>H2 2026 |
| <b>Project description:</b><br>Wales Center is a 34.5 - 4.8 kV station. The 5 MVA substation transformer has an average summer peak load of 92% of its nameplate. However, the load at the station has exceeded its nameplate rating in 2011, 2012, 2013 and 2014. There is over 2.3 MW of interconnected DER (Distributed Energy Resources) and over 2.5 MW of queued DER on the substation transformer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |                                               |                                       |                                    |
| <b>Project Scope:</b><br>Installing battery energy storage (1 MW/4MWh) at the substation will result in Peak Demand Reduction, increase the Transformer Loading Efficiency, and increase hosting capacity<br>As a secondary use case, the battery system will be used to optimize the use of the existing connected DER by using the peak daylight hours to charge the battery with the solar generation and discharge the battery during the evening hours to offset the peak load of the Station<br>Due to its location, the potential ties in the area (2 existing, and 1 future if converted to 12.47kV) are all unusable due to capacity and voltage issues.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                         |                                               |                                       |                                    |
| <b>Project Benefits:</b><br>1. Supports NY Policy goals – 6 GW energy storage goal<br>2. Supports new cost recovery pathway for energy storage currently under review by NY PSC (Case 18-E-0130)<br>3. Supports utility ownership of battery storage rather than a third-party owning and interconnecting storage to the NYSEG system for reliability<br>4. Ability to switch use cases seasonally and over time (e.g. peak shaving, hosting capacity support, etc.)<br>5. Leverage Investment Tax Credit (ITC) under Inflation Reduction Act (IRA) – Potential to reduce CapEx cost by 30-40%<br>6. Wholesale market revenues in NYISO reducing total cost of ownership over the life of the asset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                         |                                               |                                       |                                    |
| <b>Project Risks and Mitigation Plan:</b><br>The project team has identified risks throughout the lifecycle of the project, and has used industry best practices to effectively develop a plan to mitigate these risks. Risks and mitigation efforts are present in the design, construction, commissioning, and project close out phases of the project. Examples of risks during the design phase include: unforeseen subsurface conditions, unidentified property owner rights, and design impacts not identified. Ways that we will mitigate these risks include, conducting detailed site visits, conducting necessary preparatory subsurface testing, and involving the appropriate project team members early (including permitting) to effectively plan solutions to these.<br>Examples of risks during the construction and commissioning phases of the project include: material delays, contractors giving us change orders for unresolved scope, and poor community relations during construction. Ways that we will mitigate these include proper procurement planning prior to construction, thoroughly reviewing scope with the contractor prior to agreement, and engaging NYSEG community relations representatives early to address public concern.<br>Examples of risks during project close are generally financial and administrative, and are very important to address. Ways that we will mitigate these are by effectively planning and managing our project budget throughout the project, resolving potential financial disputes in a timely manner, and adhering to all NYSEG guidelines when administratively closing out the project. |                                         |                                               |                                       |                                    |
| <b>Risk of No Action:</b><br>The 5 MVA substation transformer may exceed nameplate rating and fail. It has an average summer peak load of 92% of its nameplate (load of 4.6 MVA).<br>Load at the station has exceeded its nameplate rating in 2011, 2012, 2013 and 2014.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                         |                                               |                                       |                                    |
| <b>Project Alternatives:</b><br>1. Install 1 MW/ 4.34MWh BESS: Cost - \$2.2M, ISD - 2026, Pros - approved in rate case, increases DG hosting capacity, supports NY State & PSC goals, fast deployment of battery storage, Cons - Higher cost than load transfer, Newer technology<br>2. Load Transfer onto West Varysburg 355: Cost - \$609k, ISD - 2026, Pros - cost, project duration, Cons - DG queued at West Varysburg exceeds capacity - may be infeasible, no new capacity, may not address load growth in the area<br>3. Installation of 10 MVA transformer: Cost - \$9.5M, ISD - 2028, Pros - Standard NYSEG project, Cons - 46 month duration, project costs may increase with possible contaminated soil, cost<br>**Preferred Solution - 1. BESS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                         |                                               |                                       |                                    |

The project cost estimates encompass required internal labor, external resources, materials, internal and external engineering, and appropriate project support costs. These estimates are derived from multiple sources, including the analysis of historical man-hour data and construction costs for similar activities, budgetary quotes from suppliers for necessary materials, equipment, and services, and analogous cost estimates from similar projects within NYSEG. Additionally, appropriate project support costs and applicable overheads and allocations are considered. Project estimates are routinely reviewed and updated as the project progresses, and more detailed information becomes available.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 44         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 44         |  |  |
| # Internal - Non-AC    | \$ 84         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 84         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ 17         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 17         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ 27         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 27         |  |  |
| <b>Total</b>           | <b>\$ 173</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 173</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 164          | \$ 61         | \$ 103          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,737        | \$ 369        | \$ 1,368        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 87           | \$ 30         | \$ 57           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 82           | \$ 30         | \$ 52           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,801        | \$ -          | \$ 1,801        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 82           | \$ 35         | \$ 47           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,953</b> | <b>\$ 524</b> | <b>\$ 3,429</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NY Spectrum HW Refresh CapEx

### PROJECT INFORMATION

|                                                |                                         |                                      |                                |                                    |
|------------------------------------------------|-----------------------------------------|--------------------------------------|--------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                          | <b>Project ID:</b><br>UI-N5334-NYSEG-ED | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>0   | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Electric Distribution | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>Jan-2020 | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The New York Hardware and Software Refresh Project is designated project to replace the current hardware platform that hosts the Siemens Spectrum Power v4.75 Energy Management System that operates the electric grid for New York operating companies, NYSEG and RGE. The current hardware platform is aging and obsolete as it was installed in 2012. In addition, the project must upgrade the application support modules, such as the operating system upgrade to Solaris 11 and the database management system upgrade to ORACLE 19 in order to support functionality and tools to the latest supportable and compatible with the Spectrum software.

#### Project Scope:

The scope of the project in 2024 is to finalize the buildout of new hardware and software platform by executing the designed plans which entail the upgrades as a whole. Complete full system installation of the new hardware to replace all of the current hardware that contains the Spectrum 4.75 system. Installation of the new version of Solaris 11 Operating System and Oracle 19 Database Management System; Update the newest code including any changes for the new Solaris OS, Oracle and the enhancements that will include data migrations and validations during the Site Acceptance Testing (SAT) and performance fine tuning of the new system environments with a planned go-live in Q4 of 2024. This effort will also include required developmental services with vendors that can customize the interfaces between GIS, SAP, and Spectrum data transfers. Finally, the scope will include the installation/upgrade of the current Outage Management System (OMS) to the latest version supporting required business area changes to the application and its integration with the Siemens Spectrum Power v4.75 energy management system.

NYSEG: \$2M

- Hardware/Software: Development, testing, implementation of code changes, corrections to system functionality, system interface development to achieve milestone based vendor targets. Testing support and system interface development: \$1.8M
- Internal Labor and Overhead- Core technical team and internal subject matter experts supporting implementations and ensuring design and compliance standards: \$104.3K
- AFUDC - \$96.8K

#### Project Benefits:

Hardware upgrade is required due to the unsupported and aging hardware platform currently hosting the Siemens Spectrum v4.75 Energy Management System. Current hardware fails from time to time and currently does not provide a stable environment to support the latest upgrades or additional functionality required. Upgrading the Operating Systems from Solaris 10 to Solaris 11 as well as upgrading the database management system to ORACLE 19 will provide the Spectrum Energy Management System with more efficiency in processing power to support the additional functionality. Upgrading the hardware to new servers will provide a stable and supportable hardware platform in which to host the upgraded Siemens Spectrum System and related Outage Management System enhancements. The upgrade is also a strategic organizational alignment in Energy Management System platforms across the AVANGRID organization by providing proven standards and processes as well as increased functionality.

#### Project Risks and Mitigation Plan:

Top risks of the project include the age of the hardware and incompatibility of operating system and database management systems in relation to new hardware platforms. The hardware that is being replaced was implemented in 2012. This hardware has reached end of life and is not capable of handling an upgrade of the Solaris Operating System and is no longer be under warranty. The new hardware will allow additional functionality with the new operating system and upgrades to the Oracle database. Should these hardware and licensing upgrades not be made, the current operating system will no longer be under warranty, preventing any future patching (software corrections due to bug or vulnerability fixes), making the system non-compliant with NERC CIP regulations and standards. Further, the aging system is increasingly vulnerable to hardware failures, which would lead to extended interruptions in real time assessment of the Bulk Electric System (BES) that Avangrid is required to continuously monitor as a Transmission Operation (TOP) company. These potential extended interruptions are not NERC TOP compliant. Mitigation plans include the purchase of parts from third party support vendors and aftermarket parts.

**Risk of No Action:**

The risk of no action taken to complete this project is directly related to the failure of hardware hosting the Energy Management System (EMS). Depending on the hardware that may fail within the system architecture design, the impact to operations would vary. While there is redundancy the overall impact to the system interoperability could severely affect an operators control of the grid. This could force the operations team to initiate disaster recovery plans to operate from the backup location, it may require operations to turn over Real Time Assessment to the New York Independent System Operator (NY ISO). Negatively impacting the company's customer service, along with CAIDI and SAIFI KPI's and overall control of the system are all factors that will attribute to the risk of no actions taken to remedy the currently, obsolete hardware. The risk of no action may also lead to an increase in fines from state and federal regulatory agencies, the risk not being able to safely and effectively operate the electrical grid may result in injury or harm to field personnel. Public perception of the company would be negatively impacted as customers may see delays in service restoration times, grid resiliency, and lack of confidence in the companies' operational abilities.

**Project Alternatives:**

Solution alternatives were considered prior to the project's inception. However, due the age of the hardware and the incompatibility and general risk to effective operation of the electric grid it was determined, through executive leadership decisions, to move forward with the upgrade to the existing platform. The decision to upgrade the existing system was the preferred solution that better aligned with global and local strategic direction to standardize systems, processes, procedures, and general technical support across AVANGRID operating companies. In comparison to installing a new EMS with either the same or different vendor, it was determined that upgrading an existing platform provides efficiencies in execution and support. An upgrade to the existing EMS would also have simplified training as operators have a long-standing familiarity with the existing system as opposed to training on an entirely new system.

**Basis for Project Estimates**

The project cost estimates are driven by internal labor, external resources, hardware purchases, software licensing, and professional support services considered as required to be able to meet the project objectives. Estimates are derived from multiple sources that include the number of resources identified as subject matter experts in their fields to help decision the architectural designs, that meet or exceed system requirements and recommendations as detailed by the NPCC, NYISO, and NERC standards. Cost estimates provided by the system EMS manufacturer are based on the achievement of defined milestones within the project timelines as determined through their experience in executing upgrades to their products as they guide project timelines. Proposed external services required to augment internal staffing in the support of point-to-point testing and validations of the Site Acceptance Testing (SAT) are based on the number resources dedicated to the project and the estimated hours need to complete their supportive tasks. The purchase of hardware required to support updated versions of the Solaris operating system and ORACLE database management system is driven by the vendor (Siemens) as guided by their expertise in systemic upgrade of their Energy Management System (EMS) platform. All costs associated with the project objectives are split proportionally between the NYSEG and RGE operating companies as is common practice.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022          | 2023            | 2024          |  |  |
|------------------------|-----------------|-------------|-------------|---------------|-----------------|---------------|--|--|
| # AFUDC                | \$ 257          | \$ -        | \$ -        | \$ 6          | \$ 94           | \$ 157        |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -          |  |  |
| # External Services    | \$ 2,226        | \$ -        | \$ -        | \$ 570        | \$ 1,364        | \$ 292        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -          |  |  |
| # Internal, Labor      | \$ 103          | \$ -        | \$ -        | \$ 34         | \$ 33           | \$ 37         |  |  |
| # Internal, Overheads  | \$ 292          | \$ -        | \$ -        | \$ 72         | \$ 169          | \$ 51         |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -          |  |  |
| # Overheads - External | \$ 588          | \$ -        | \$ -        | \$ 133        | \$ 372          | \$ 83         |  |  |
| <b>Total</b>           | <b>\$ 3,466</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 815</b> | <b>\$ 2,032</b> | <b>\$ 619</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Line 1       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 2       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 3       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 4       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 5       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 6       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 7       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Line 8       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 92           | \$ -        | \$ 92           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 969          | \$ -        | \$ 969          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 48           | \$ -        | \$ 48           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 106          | \$ -        | \$ 106          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 107          | \$ -        | \$ 107          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 119          | \$ -        | \$ 119          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,441</b> | <b>\$ -</b> | <b>\$ 1,441</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **RG&E Electric Innovation**



## RG&E IEDR Phase II

### PROJECT INFORMATION

|                                                     |                                         |                                                |                                       |                                    |
|-----------------------------------------------------|-----------------------------------------|------------------------------------------------|---------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                | <b>Project ID:</b><br>PRJ-003864        | <b>Charge Code:</b><br>Electric Distribution   | <b>Project Sponsor:</b><br>Ras, Shawn | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Processes and Technologies | <b>Rate Case Category</b><br>Innovation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Apr-2024        | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

New York is transforming its electricity system into one that is cleaner, more resilient, and more affordable. Effective access to useful energy data will play a critical role in this transformation, unleashing the power of integrated energy customer data and energy system data to speed the deployment of clean energy solutions. This will attract investment, enable analytics, help identify operational efficiencies, promote innovation, and encourage new business models, which will in-turn create value for customers and the State's energy system. The creation of an Integrated Energy Data Resource (IEDR) will provide New York's energy stakeholders with a platform that enables effective access and use of such integrated energy customer data and energy system data.

The IEDR shall collect and integrate a large and diverse set of energy-related information on one statewide data platform. As defined in the Order to Case #20-M-0082 "Proceeding on Motion of the Commission Regarding Strategic Use of Energy Related Data", the Commission directs the implementation of an IEDR that securely collects, integrates and provides useful access to a large and diverse set of energy-related information on the statewide data platform.

The order directs RG&E to work with the Department of Public Service Staff and the New York State Energy Research and Development Authority (NYSERDA) to implement a statewide Integrated Energy Data Resource Program.

#### Project Scope:

2025 scope includes providing NYSERDA (New York State Energy Research and Development Authority) the following datasets:

- Installed and Planned DER (Distributed Energy Resources).
- Hosting Capacity Maps (including Electric Vehicles, Battery Energy Storage and Photovoltaic)
- Rate Plan Data in machine readable format.
- Customer Data.
- AMI (Advanced Metering Infrastructure) data.
- Additional data sets might be requested by NYSERDA due to the definition of new Use Cases.

Budget for 2025: \$1,791,040 (Labor: \$392,131, External Services: \$1,003,750). Phase 2 has been approved by the Public Service Commission.

Deferred costs will be eligible for recovery in subsequent rate case filings, after Phase 2 of the IEDR is completed.

External Services will be used to:

- Design, implement, commission and operate a process and system capable of gathering and assembling all data requested by the NY Public Service Commission to be transfer to the IEDR platform.
- Propose functional and technical specifications to meet the requirements for the IEDR Administrator: Configure and define the integrations, data models, standards and taxonomies for the IEDR project.

2025 cost estimates are part of the complete Phase 2 budget estimated according to the scope established by the IEDR Order. It was approved by the NY Public Service Commission and it is fully recoverable in the next rate case after Phase 2 ends.

#### Project Benefits:

New York is transforming its electricity system into one that is cleaner, more resilient, and more affordable. Effective access to useful energy data will play a critical role in this transformation, unleashing the power of integrated energy customer data and energy system data to speed the deployment of clean energy solutions. This will attract investment, enable analytics, help identify operational efficiencies, promote innovation, and encourage new business models, which will in-turn create value for customers and the State's energy system. The creation of an Integrated Energy Data Resource (IEDR) will provide New York's energy stakeholders with a platform that enables effective access and use of such integrated energy customer data and energy system data.

Expected benefits from the project include:

- Informed Investment Decisions: By providing centralized access to useful energy data, the IEDR will help stakeholders make better investment decisions.
- Operational Efficiency: The platform will identify operational inefficiencies, allowing for improvements in energy system operations.
- Policy Effectiveness: Monitoring the effectiveness of policy objectives will be easier with the data and insights provided by the IEDR.
- Innovation and New Business Models: The IEDR will promote innovation and support the development of new clean energy business models.
- Customer Benefits: Ultimately, these improvements will benefit New York energy customers by making the energy system more reliable and cost-effective.

**Project Risks and Mitigation Plan:****Data Management and Governance Risks**

Business units operate in silos, creating their own data assets, models, and repositories that are not aligned with those of other units. There is no universal data repository, leading to bureaucratic hurdles in accessing and gathering data. A lack of standardized data governance practices across the company could increase the cost of the IEDR due to additional tasks needed to ensure data quality. Multiple, unharmonized data models further complicate the process, potentially increasing costs. Complexities in automating data sets, customer consent management costs, and necessary modifications to SAP or other source systems are not included in the budget. Limited bandwidth of data owner SMEs and company resources, along with competing priorities, pose additional challenges. Furthermore, the lack of internal resources to manually create and maintain data reports, and the absence of data repositories for some operational systems, necessitate manual data gathering.

**Mitigation**

The completion of ongoing plans and projects that will deliver data and improve their quality (including but not limited to: DSIP, automation, resiliency, Grid Model Enhancement Project (GMEP), AMI) is key for a better implementation of the IEDR in our Companies.

**Project Management and Planning Risks**

The high level of uncertainty and complexity makes it difficult to accurately estimate the total cost and efforts, as there was no clear roadmap for Phase 1 use case deployment. This necessitated a certain level of iteration and rework. Additionally, changes in requested data elements and use cases impacted the estimated working hours for each role, while short notice actions may require additional resources and budget. Furthermore, assuming that the Platforms Administrator will not need to work on additional integrations with the Data Assessment tool is a risk that could affect the project's timeline and budget.

**Mitigation**

To mitigate the identified risks, it was deployed and implemented specialized data lifecycle and management tools, which reduced project complexity and resource requirements. Integrating small business databases into the data lake also reduced complexity, though data extraction from various source systems like SAP, GIS, EMS, and MDM may require additional time and resources. Reviewing project requirements and consulting with the Azure platform and data assessment tool administrator to identify necessary tools or services in advance, along with continuous monitoring and evaluation, to ensure optimal efficiency and cost-effectiveness.

**Risk of No Action:**

This program has been mandated by the Public Service Commission in the Integrated Energy Resource Order issued February 11, 2021. Not making the necessary investments to build the internal capabilities to meet the IEDR requirements will make Avangrid utilities not compliance with the Commission mandates.

**Project Alternatives:**

The pathway was defined by the PSC Order "Order Implementing an Integrated Energy Data Resource", released in February 11, 2021.

**Basis for Project Estimates**

The project cost estimates include the following categories:

-Internal Labor: The IEDR Order directed the Joint Utilities to "establish an Integrated Energy Data Resource Implementation Team, led by a member of the company's senior management team". To support implementation of such a team a total of 5 Full Time Equivalent (FTE) resources needed to be fully dedicated. They include a Project Director, Business Project Manager, Business Product Owner, Principal Data Scientist, Senior Data Engineer and It Project Manager. Also, numerous internal resources from different areas have collaborated and support the IEDR Use Cases.

-External Services: Additional resources were required for the IEDR by leveraging external services. External services were necessary to incorporate a unique set of skills or competencies required for IEDR not available in house or their bandwidth to dedicate to the IEDR is less than what it is required. These services included a Lead Data Analyst (responsible for data discovery, analysis, research, and identification) a Business Analyst (responsible for providing expert knowledge and identify the complexity of data sets, perform user acceptance testing and define configuration specifications), a Scrum Master (responsible for implementing project management and best practices, ensuring all parties being on track), a Solution Architect (responsible for the solution architect strategy) , Data Engineers (responsible for data automation and monitoring), Platform Admin (responsible for Azure platform management).

-AFUDC/OH: Allowance for funds used during construction, AFUDC, is a regulatory methodology of compensating a utility for the financing costs it incurs during construction of new facilities. Overheads are business costs that are related to the day-to-day running of the business. Unlike operating expenses, overheads cannot be traced to a specific cost unit or business activity. Instead, they support the overall revenue-generating activities of the business.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023        | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|--|--|
| # AFUDC                | \$ 37           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 37           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # External Services    | \$ 902          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 902          |  |  |
| # Internal - Non-AC    | \$ 7            | \$ -        | \$ -        | \$ -        | \$ -        | \$ 7            |  |  |
| # Internal, Labor      | \$ 217          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 217          |  |  |
| # Internal, Overheads  | \$ 126          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 126          |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Overheads - External | \$ 367          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 367          |  |  |
| <b>Total</b>           | <b>\$ 1,655</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,655</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 219          | \$ 89           | \$ 130          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,001        | \$ 1,002        | \$ 999          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 909          | \$ 372          | \$ 537          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 85           | \$ -            | \$ 85           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 190          | \$ 190          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 252          | \$ -            | \$ 252          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,656</b> | <b>\$ 1,654</b> | <b>\$ 2,002</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NY Spectrum HW Refresh CapEx

### PROJECT INFORMATION

|                                                     |                                         |                                              |                                            |                                      |
|-----------------------------------------------------|-----------------------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric            | <b>Project ID:</b><br>UI-R5321-RGE-ED   | <b>Charge Code:</b><br>Electric Distribution | <b>Project Sponsor:</b><br>Bean, Jacquelyn | <b>Project Type:</b><br>Project      |
| <b>Business Area:</b><br>Processes and Technologies | <b>Rate Case Category</b><br>Innovation | <b>Project Stage:</b><br>IP4 Change          | <b>Start Date:</b><br>1/0/1900             | <b>In-Service Date:</b><br>2/16/2026 |

#### Project description:

This project includes hardware replacement of the Spectrum Power 4.75 Energy Management System (EMS) at the New York Energy Control Center. The new hardware will replace the original hardware purchased and implemented in 2012. The replacement of the hardware will allow Avangrid to install the latest version of the Solaris Operating System and Oracle Database (DB) components. The purpose of this project is to replace the aged out and currently unsupported hardware platform that is hosting the Siemens Spectrum v4.75 EMS for New York. The hardware and software is being upgraded to the latest versions of the applications and tools that will include new versions of the hardware operating system (from Solaris 10 to Solaris 11) as well as the latest version of the database management system to ORACLE version 12.

#### Project Scope:

The hardware will include changes to network traffic communications from the field back to Vestal and Kirkwood in New York. Tools and system functionality enhancements will be added to the project to expand system operability and provide increased control and visibility of field devices and circuits. The tools and functionality being implemented include: Transmission Network Application (TNA) Schema and code changes to allow a Transformer bypass button to be added to operator screens; Geographical Information System (GIS) identification (GISID) that allows for a unique identifier to be added to each piece of equipment deployed to the field.

2019-2024 Cost Summary: 2,205,574 (\$1,363,036 Distribution, \$842,538 Common).

The total 2025 expense is \$876,743:

- Primary project vendor and application manufacturer project milestone achievement \$202,917  
- Third party vendor supporting point to point testing, SAT validations, and go-live support; Performance testing; Disaster Recover testing support; Cutover Dry Runs; CyberVulnerability Assessment; TNA Training Support, Support services for hardware integration and configuration support \$244,411  
AFUDC - \$98,974

OH - \$149,682  
Internal Labor - \$59,789  
Internal Non AC - \$120,970

Some costs were incorrectly charged to Common work orders, primarily in prior years. A journal entry will be done this year to move these costs to Distribution. This will have a 2025 impact of \$905,593

AFUDC \$209,875  
External Services \$379,674  
Internal Non-AC \$316,070

Due to performance issues with the system, the go-live has been scheduled for Q1 2026 and the following cost will be required (\$261,769):

AFUDC - \$33,019  
External Services (Primary project vendor and application manufacturer project milestone achievement) - \$117,094  
OH - 43,266  
Internal labor - \$14,737  
Internal non-AC - \$53,653

#### Project Benefits:

- Increased resource availability with cross functional resources across Operating Companies
- Reductions in Support and Maintenance with a common platform
- Increased/updated Security Controls
- Improved architecture and infrastructure to support current platform with improved system redundancy and resiliency

Additional project benefits include the expansion of the electronic secure perimeter (ESP) to foster robust RTU testing and increased redundancy for the Independent Front-End System (IFS) servers and communications while keeping devices secure by meeting our compliance requirements.

#### Project Risks and Mitigation Plan:

Top risks of the project include the age of the hardware and incompatibility of operating system and database management systems in relation to new hardware platforms. The hardware that is being replaced was implemented in 2012. This hardware has reached end of life and is not capable of handling an upgrade of the Solaris Operating System and is no longer be under warranty. The new hardware will allow additional functionality with the new operating system and upgrades to the Oracle database. Should these hardware and licensing upgrades not be made, the current operating system will no longer be under warranty, preventing any future patching (software corrections due to bug or vulnerability fixes), making the system non-compliant with NERC CIP regulations and standards. Further, the aging system is increasingly vulnerable to hardware failures, which would lead to extended interruptions in real time assessment of the Bulk Electric System (BES) that Avangrid is required to continuously monitor as a Transmission Operation (TOP) company. These potential extended interruptions are not NERC TOP compliant. Mitigation plans include the purchase of parts from third party support vendors and aftermarket parts.

**Risk of No Action:**

The risk of no action taken to complete this project is directly related to the failure of hardware hosting the Energy Management System (EMS). Depending on the hardware that may fail within the system architecture design, the impact to operations would vary. While there is redundancy the overall impact to the system interoperability could severely affect an operators control of the grid. This could force the operations team to initiate disaster recovery plans to operate from the backup location, it may require operations to turn over Real Time Assessment to the New York Independent System Operator (NY ISO). Negatively impacting the company's customer service, along with CAIDI and SAIFI KPI's and overall control of the system are all factors that will attribute to the risk of no actions taken to remedy the currently, obsolete hardware. The risk of no action may also lead to an increase in fines from state and federal regulatory agencies, the risk not being able to safely and effectively operate the electrical grid may result in injury or harm to field personnel. Public perception of the company would be negatively impacted as customers may see delays in service restoration times, grid resiliency, and lack of confidence in the companies' operational abilities.

**Project Alternatives:**

Solution alternatives were considered prior to the project's inception. However, due the age of the hardware and the incompatibility and general risk to effective operation of the electric grid it was determined, through executive leadership decisions, to move forward with the upgrade to the existing platform. The decision to upgrade the existing system was the preferred solution that better aligned with global and local strategic direction to standardize systems, processes, procedures, and general technical support across AVANGRID operating companies. In comparison to installing a new EMS with either the same or different vendor, it was determined that upgrading an existing platform provides efficiencies in execution and support. An upgrade to the existing EMS would also have simplified training as operators have a long-standing familiarity with the existing system as opposed to training on an entirely new system.

**Basis for Project Estimates**

The project cost estimates are driven by internal labor, external resources, hardware purchases, software licensing, and professional support services considered as required to be able to meet the project objectives. Estimates are derived from multiple sources that include the number of resources identified as subject matter experts in their fields to help decision the architectural designs, that meet or exceed system requirements and recommendations as detailed by the NPCC, NYISO, and NERC standards. Cost estimates provided by the system EMS manufacturer are based on the achievement of defined milestones within the project timelines as determined through their experience in executing upgrades to their products as they guide project timelines. Proposed external services required to augment internal staffing in the support of point-to-point testing and validations of the Site Acceptance Testing (SAT) are based on the number resources dedicated to the project and the estimated hours need to complete their supportive tasks. The purchase of hardware required to support updated versions of the Solaris operating system and ORACLE database management system is driven by the vendor (Siemens) as guided by their expertise in systemic upgrade of their Energy Management System (EMS) platform. All costs associated with the project objectives are split proportionally between the NYSEG and RGE operating companies as is common practice.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2021        | 2022         | 2023            | 2024          | 2025            |  |  |
|------------------------|-----------------|-------------|--------------|-----------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 407          | \$ -        | \$ 1         | \$ 30           | \$ 61         | \$ 315          |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -         | \$ -            | \$ -          | \$ -            |  |  |
| # External Services    | \$ 1,663        | \$ -        | \$ 62        | \$ 770          | \$ 110        | \$ 721          |  |  |
| # Internal - Non-AC    | \$ 440          | \$ -        | \$ -         | \$ -            | \$ 22         | \$ 419          |  |  |
| # Internal, Labor      | \$ 66           | \$ -        | \$ -         | \$ -            | \$ 6          | \$ 60           |  |  |
| # Internal, Overheads  | \$ 197          | \$ -        | \$ 4         | \$ 48           | \$ 15         | \$ 130          |  |  |
| # Materials            | \$ -            | \$ -        | \$ -         | \$ -            | \$ -          | \$ -            |  |  |
| # Overheads - External | \$ 496          | \$ -        | \$ 12        | \$ 183          | \$ 40         | \$ 262          |  |  |
| <b>Total</b>           | <b>\$ 3,269</b> | <b>\$ -</b> | <b>\$ 80</b> | <b>\$ 1,031</b> | <b>\$ 253</b> | <b>\$ 1,906</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

[illegible]

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |



# **NYSEG Electric Hydro-Generation**

## Upper Mechanicville Intake Upgrades And Downstream Passage Project

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-1743-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

NYSEG Upper Mechanicville Hydroelectric Project (FERC Project No. P-2934) is located on the Hudson River in Saratoga and Rensselaer Counties, in the Town of Stillwater, NY. The facility is unstaffed with two turbine-generating units that are remotely monitored and controlled with a total rated capacity of 16.53 MW. The Project has a significant hazard dam that is owned by New York State Canal Corporation with pneumatic crest gates owned and operated by NYSEG. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

A requirement of NYSEG's new 50-year hydropower operating license issued by the Federal Energy Regulatory Commission (FERC), effective on April 1, 2021, is for NYSEG to replace and upgrade the existing river water intake trashracks from 5.5-inch clear space opening to 0.75-inch clear space opening for protection of aquatic species, specifically American Eel. In addition, NYSEG is currently required to design and install a new structure to safely convey entrained aquatic species safely downstream of the facilities (river) water intake.

Since April 2021, NYSEG has assessed the technical, financial, and operational impacts to upgrade the existing intake trashracks from 5.5-inch clear space opening to 0.75-inch clear space opening and determined the financial investment would not be cost-effective for NYSEG ratepayers.

NYSEG is collaborating with the Settlement Parties involved with relicensing of the facility and revisiting the reduction of intake trash rack spacing requirement. Since issuance of the new license to NYSEG in 2021, the means and methods to increase the survivability of American Eels has been expanded by federal and state agencies giving potentially more options to NYSEG to achieve federal and state survivability targets than reduction of intake trash rack spacing (5.5-inch to 0.75-inch).

NYSEG is currently exploring an upgrade to the existing turbine runners (Unit 1 & Unit 2) with fish-friendly runners to improve American eel survivability rates. Potential upgrade of the existing turbine runners to fish-friendly runners would be addressed under Unit 1, and Unit 2, Turbine-Generator Major Rebuild Projects.

The current intake trash racks, rack raking and debris removal equipment (a.k.a. clammer) at Upper Mechanicville hydroelectric facility is original to the facility, circa 1981, and are at end-of-life. Based on this, it is necessary that NYSEG replace and upgrade the existing 5.5-inch trash racks, for the protection of the turbine-generating units from river debris, along with the existing trash rack raker, and clammer.

#### Project Scope:

NYSEG Upper Mechanicville Intake Upgrades Project is comprised of the following activities:

- Design and installation of a new automated trash rack raker and clammer to remove river debris accumulation on the intake trash racks, along with safe installation and removal of intake stop gates to safely isolate each turbine-generating unit.
- Conceptual and detailed design of foundations, raker rails, electrical supply, and controls, etc. needed for new trash rack raker and clammer.
- Design and installation of new 5.5-inch upgraded, corrosion resistant intake trash racks.

#### Project Benefits:

Upper Mechanicville Intake Upgrade Project is a project to upgrade the existing water intake trash racks, installation of a new automated trash rack raker and debris removal equipment. Installation of new intake trash racks and rack raking equipment is necessary for continued operation, improved operational efficiency and reliability of the hydroelectric facility necessary to support New York State's Clean Energy Goals and initiatives.



### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with vendor(s) availability / interest to guide in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.New Trash Rack Raker Fabrication / Delivery Lead Times

a.Fabrication of new rack rakers can take approximately 18-24 months to fabricate / supply.

b.NYSEG to initiate procurement of new rack raker prior to construction and installation request for proposal (RFP) to ensure new rack raker arrives on site prior to General Contractor mobilization.

2.Unknown damage / condition to existing rack raker rails / foundation

a.NYSEG to perform detailed condition assessment and survey of existing Upper Mechanicville water intake (trash racks, rails, rack raker, clammer, foundations, structural steel, etc.) prior to design and bid to mitigate / reduce risk.

3.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials in advance of or during design to identify need for abatement during construction.

4.Dredging / handling of impacted riverbed materials during installation of new trash racks

a.NYSEG to perform bathymetric survey / dive studies to confirm river sediment accumulation / volume in and around the water intake. NYSEG to take samples of river sediment buildup and test for understanding of safe handling during trash racks installation.

### **Risk of No Action:**

#### **Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

The existing intake trash racks, rack raker and debris handling equipment at Upper Mechanicville routinely requires repairs. The following would occur if no action were taken to upgrade the intake trash racks, trash rack raker and clammer:

1.NYSEG would be required to manually rake and remove debris from river, as required, leading to potential personnel injury. Due to the Hudson River having excessive debris, hand raking is not an option when the two (2) turbine-generator units running at full load.

2.NYSEG may be required to decrease generation or be forced into an outage if staff is unavailable or unable to remove the accumulated debris.

3.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

NYSEG to assess and evaluate the following project alternative(s) / scope:

2.Modification of trash rack raker rails on intake deck,

3. Upgrades to intake stop log gate storage hatches / covers to facilitate easier access to intake stop logs,

b.NYSEG to research trash rack raker options, including the functionality / lifting capabilities and impacts to raker rails during conceptual engineering.

## Basis for Project Estimates

Project cost estimates are:

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c.analogous cost estimated from similar projects,

d. appropriate project support costs,

e.applicable overheads and allocations.

3. Project estimates are routinely reviewed according to Avangrid Networks Quality Management System, updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Kents Falls - Capital Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>UJ-N4013-NYSEG-EG       | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

NYSEG Kents Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 13.68 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Kents Falls dam, water conveyance system, and powerhouse was constructed circa 1928.

The purpose of NYSEG Kents Falls Capital Project is to address the following issues that will result in extending the life and improving reliable operation of the facility upon completion:

- 1.The existing ring girders that support approximately 1,000 feet of 11-ft diameter penstock are creating pressure points on the steel penstocks resulting in stress cracks and water leakage. The penstock is at end-of-life and ring girder design outdated with current design practices. Installation of a new 1,000-ft section penstock and ring girder design will eliminate stress points and penstock cracking. The balance of the penstock section was replaced circa 1990's along with redesign of the penstock support system.
- 2.The penstock trifurcation, which conveys water to each of the three turbine-generators at the powerhouse is original to the plant, is of riveted construction and is at end-of-life. NYSEG will excavate around the existing penstock trifurcation, coat the existing trifurcations interior and exterior surfaces, and encase the remainder of the trifurcation in reinforced concrete to withstand surge pressures, limit steel temperature differential, and omit the need for a fiber-reinforced polymer (FRP) lining and / or trifurcation replacement.
- 3.Unit 1 & Unit 2 turbine penstock sections, that start at the outlet of the penstock trifurcation to the inlet of the turbine-generator isolation valves are original to the plant (circa 1928), are of riveted construction, and are at end-of-life. The penstock sections require routine inspection and repairs to address on-going leaks. Installation of a new FRP liner on each of the penstocks will eliminate the need for further repairs and extend the life of the asset.
- 4.The existing gabion wall at the fishing access area is experiencing active displacement that is imparting loads against several penstock saddles that support the elevated section of penstock. NYSEG will replace the existing gabion wall with a new concrete retaining wall, anchoring the wall and existing penstock saddle foundation slab, backfilling between the slope and the retaining wall, and incorporating drainage for the new wall.

#### Project Scope:

Kents Falls Capital Project is comprised of the following activities:

- Detailed inspection and investigative studies (geotechnical drillings, site survey, etc.) to confirm the extent of upgrades to the trifurcation, penstock sections, and gabion wall,
- Confirm detailed design of new ring girders to replace existing penstock support saddles, new trifurcation encasement, penstock FRP relining, and retaining wall installation.
- Procurement of services, equipment, and material to implement the detailed design, which includes.
  - oRemoval of approximately upper 1,000 feet of 11-ft diameter steel penstock, support saddles (circa 1928), and foundations which are at end of life.
  - oInstallation of new ring girders, new steel penstock, and associated foundations.
  - oExcavation of existing trifurcated penstock section, application of coating system on existing trifurcation, and installation of reinforced concrete encasement around existing trifurcation,
  - oInstallation of new FRP lining on existing penstock sections (fabricated circa 1928 and end-of-life) from the outlet of the trifurcation to the inlet to the turbine-generator isolation valves.

#### Project Benefits:

Kent Falls Capital Project involves installation of approximately 1000-ft of new 11-ft diameter steel penstock, including new ring girders and foundations, installation of a new concrete encasement / coating system on the existing penstock trifurcation section, and FRP lining on the existing penstock sections leading into the powerhouse and turbine isolation valves. The existing infrastructure is at end-of-life and is not fit for operation without required upgrades. Upgrades to the Kents Falls water conveyance infrastructure will allow NYSEG to increase reliable operation of the facility, extend the life of the existing infrastructure, and continue NYSEG's responsibility and FERC's requirement for safe and reliable operation of the facility, which support New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1. Availability of Engineering, Project Management, Regulatory and Construction resources.

a. Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2. Equipment and Material Lead times.

a. Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2)

Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3. Unforeseen conditions encountered during Construction.

a. Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4. Reduction of, or Insufficient Project Funding

a. Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5. Adverse River / Weather Conditions:

a. Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1. Penstock Fabrication Lead Times

a. NYSEG to initiate procurement of new steel penstock and ring girders prior to construction and install RFP to ensure the new steel penstock and ring girders arrive on site prior to General Contractor mobilization.

2. Integration of new penstock into existing dam right abutment and existing / remaining penstock section

a. NYSEG to mitigate risk by requesting detailed site-specific health and safety plans and work plans from Contractor(s) on site to ensure careful consideration is accounted for when fitting up the new penstocks into the existing dam right abutment and remaining penstock section.

b. NYSEG to employ an on-site Field Construction Manager during construction to oversee construction methods for strict adherence to the project work plan.

c. NYSEG to survey existing conditions (dam right abutment / existing penstock to remain) prior to and after removal of the existing 1,000-ft upper penstock section for use during penstock / ring girder fabrication.

3. Unknown subsurface conditions

a. NYSEG to perform detailed subsurface investigations (borings, test pits, etc.) to document existing conditions along existing penstock / trifurcation for new penstock / ring girder design, and to mitigate construction risk.

4. Difficult Site Access for Construction

a. Contractor(s) to utilize existing access road(s) during construction and / or use crane(s) for mobilizing materials and equipment to site. NYSEG to perform mandatory on-site pre-bid walkthrough with Contractor's bidding on project to verify all bidders understand and consider means for access.

b. NYSEG to complete constructability review during conceptual / detailed design to mitigate risk(s).

5. Work around / near existing wetlands on site.

a. NYSEG to survey and stake existing wetlands on site and require strict compliance, with independent verification and monitoring, to the project developed Storm Water Pollution and Prevention Plan (SWPPP) prior to and during construction.

**Risk of No Action:**

Common Risk of No Action:

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

In the event of a failure with the penstock / trifurcation, it could potentially result in the following consequences including but not limited to:

1. Uncontrolled release of flows requiring activation of the Emergency Action Plan.
2. Negative impact to ecological systems.
3. Potential damage to facility property, powerhouse structure, equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel and / or public.
4. Forced outage of turbine-generating units (and other associated equipment) due to not being able to convey water for generation of renewable energy.
5. NYSEG being unable to comply with FERC Hydropower Operating License.
6. NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG has assessed and evaluated the following project alternatives:

1. Trifurcation
  - a. Install coating on interior / exterior of existing trifurcation and install reinforced concrete encasement around trifurcation – Selected Alternative
  - b. Upgrade existing trifurcation with steel lining and concrete encasement.
  - c. Replace Trifurcation with new steel trifurcation.
2. Penstock Sections Leading into Powerhouse
  - a. Install FRP lining on each of the three (3) penstock legs – Selected Alternative
  - b. Upgrade penstock legs with steel lining and concrete encasement
  - c. Replace 6-ft diameter penstock sections with new steel penstock sections.
3. Upper Penstock
  - a. Remove existing penstock saddles and install new ring girders with new interior / exterior coating.
  - b. Install saddle horn extensions on existing penstock saddles and install coating system on interior / exterior of existing upper penstock.
  - c. Remove existing upper penstock / saddles / foundation and install new upper steel penstock / ring girders / foundations – Selected Alternative
4. Gabion Wall
  - a. Surcharge removal and drainage improvements
  - b. Remove existing gabion wall and install new reinforced concrete retaining wall and access road on south side of existing penstock.
  - c. Remove existing gabion wall and install new reinforced concrete retaining wall and access road on north / river side of existing penstock – Selected Alternative

NYSEG contracted an Independent Consultant (IC) to develop a detailed analysis of project alternatives, including cost estimates, and determined selected alternatives meet the most stakeholder requirements and is most cost-effective.

NYSEG will further assess all project alternatives during project planning in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ 1,061        | \$ 303          | \$ 171        | \$ 159        | \$ 194        | \$ 235        |  |  |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ 1,498        | \$ 956          | \$ 43         | \$ 30         | \$ 146        | \$ 323        |  |  |
| # Internal - Non-AC    | \$ 140          | \$ 69           | \$ 19         | \$ 5          | \$ 16         | \$ 32         |  |  |
| # Internal, Labor      | \$ 33           | \$ 7            | \$ -          | \$ 4          | \$ 15         | \$ 7          |  |  |
| # Internal, Overheads  | \$ 199          | \$ 116          | \$ 9          | \$ 5          | \$ 20         | \$ 49         |  |  |
| # Materials            | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ 330          | \$ 186          | \$ 13         | \$ 8          | \$ 46         | \$ 77         |  |  |
| <b>Total</b>           | <b>\$ 3,261</b> | <b>\$ 1,637</b> | <b>\$ 255</b> | <b>\$ 210</b> | <b>\$ 436</b> | <b>\$ 723</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026             | 2027             | 2028          | 2029        | 2030        | 2031        |
|------------------------|------------------|-----------------|------------------|------------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ 3,700         | \$ 305          | \$ 700           | \$ 2,095         | \$ 601        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -             | \$ -             | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 24,442        | \$ 1,250        | \$ 8,976         | \$ 14,146        | \$ 70         | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -             | \$ -             | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 370           | \$ 20           | \$ 150           | \$ 200           | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 1,806         | \$ 94           | \$ 763           | \$ 945           | \$ 4          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -             | \$ -            | \$ -             | \$ -             | \$ -          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 1,940         | \$ 95           | \$ 825           | \$ 1,016         | \$ 4          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 32,258</b> | <b>\$ 1,763</b> | <b>\$ 11,414</b> | <b>\$ 18,401</b> | <b>\$ 680</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## High Falls Intake Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-3258-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The NYSEG High Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 15.0 MW. The Project has a high hazard dam used to impound water for use in generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

A requirement of NYSEG's current 40-year hydropower operating license issued by the Federal Energy Regulatory Commission (FERC), effective on April 13, 2006, is for NYSEG to replace and upgrade the existing river water intake trashracks from 2-inch clear space opening to 1-inch space opening for protection of aquatic species. Upgrade of the intake trash racks is required to comply with License Article 404, Section 3.4 of the Settlement Agreement, and condition B.10 of the New York State Department of Environmental Conservation (NYSDEC) 401 Water Quality Certification (WQC). Installation of the new intake trash racks at High Falls is to be completed by no later than January 19, 2026, as outlined in the Settlement Agreement and FERC License.

#### Project Scope:

In addition to the intake rack upgrades, the project is comprised of the following upgrades:

- Design and installation of a new automated trash rack raker to remove increased river debris accumulation on the intake trash racks due to reduction in intake trash rack openings from 2-inch to 1-inch.
- Reconfiguration and expansion of the intake structure to reduce intake flow velocities to comply with US Fish and Wildlife Service fish guidance requirements.
- Provisions adjacent to the upgraded intake structure and new rack raker for loading river debris into dump trucks and/or roll-off dumpster(s) for proper disposal.
- Associated intake structural steel and concrete improvements to accommodate installation of the new rackraker and intake trashracks during operation of the facility.

#### Project Benefits:

Upon completion of the NYSEG High Falls Intake Upgrade Project, NYSEG will fulfill its obligation to comply with License Article 404, Section 3.4 of the Settlement Agreement and condition B.10 of the NYSDEC 401 Water Quality Certification, as outlined in the April 13, 2006 FERC license, and will have reduced the intake trash rack clear space opening from 2-inches to 1-inches for the protection of aquatic species.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability.

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials during design, and construction, as necessary, to identify need for abatement during construction.

2.Unforeseen existing conditions resulting in design changes during construction.

a.During design, NYSEG to mitigate / reduce risk by using existing drawings, if available, and performing field inspections (including bathymetric survey, dive inspection, etc.) to document existing conditions and reduce assumptions on design drawings.

3.Cofferdam design / construction and leakage

a.NYSEG to contract professional engineer to design cofferdam using bathymetric survey information. NYSEG to develop and execute inspection and monitoring plan to verify stability is maintained throughout construction.

**Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

By NYSEG not installing 1" racks at the NYSEG High Falls intake, NYSEG will not be in compliance of License Article 404, Section 3.4 of the Settlement Agreement, and condition B.10 of the NYSDEC 401 Water Quality Certification, which could subject NYSEG to fines, corrective action, and / or suspending operation of the hydroelectric facility.

**Project Alternatives:**

NYSEG has assessed and evaluated the following project alternative(s) / scope:

1.Cofferdam Construction

a.NYSEG has assessed multiple cofferdam designs (earthen cofferdam, cellular cofferdam) to determine the best and most-cost effective means to isolate and protect the construction work area.

2.Pile Supported Construction

a.NYSEG has assessed the feasibility of installing new intake upgrades on piles into bedrock.

NYSEG to assess all project alternatives upon initiation of the project in accordance with the Quality Management System.



Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020         | 2021          | 2022          | 2023            | 2024            |  |  |
|------------------------|-----------------|--------------|---------------|---------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 352          | \$ 0         | \$ 4          | \$ 18         | \$ 67           | \$ 262          |  |  |
| # CIAC                 | \$ -            | \$ -         | \$ -          | \$ -          | \$ -            | \$ -            |  |  |
| # External Services    | \$ 5,539        | \$ 19        | \$ 155        | \$ 232        | \$ 769          | \$ 4,363        |  |  |
| # Internal - Non-AC    | \$ 208          | \$ -         | \$ 9          | \$ 26         | \$ 74           | \$ 99           |  |  |
| # Internal, Labor      | \$ 131          | \$ -         | \$ 2          | \$ 4          | \$ 23           | \$ 102          |  |  |
| # Internal, Overheads  | \$ 862          | \$ 2         | \$ 24         | \$ 29         | \$ 116          | \$ 691          |  |  |
| # Materials            | \$ 498          | \$ -         | \$ -          | \$ -          | \$ 111          | \$ 388          |  |  |
| # Overheads - External | \$ 1,391        | \$ 3         | \$ 35         | \$ 49         | \$ 240          | \$ 1,064        |  |  |
| <b>Total</b>           | <b>\$ 8,981</b> | <b>\$ 25</b> | <b>\$ 230</b> | <b>\$ 358</b> | <b>\$ 1,399</b> | <b>\$ 6,969</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025            | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 682          | \$ 509          | \$ 173        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 5,963        | \$ 5,913        | \$ 50         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 85           | \$ 75           | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 474          | \$ 469          | \$ 5          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 270          | \$ 270          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 471          | \$ 463          | \$ 8          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,945</b> | <b>\$ 7,699</b> | <b>\$ 246</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## NYSEG Minor Capital Program

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                        |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-002801              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The NYSEG Minor Capital Program implements minor capital projects each year to address both planned and emergent projects that typically have a per project cost of less than \$500,000.

The NYSEG Minor Capital Program is in place to address multiple small capital investment projects, or as projects emerge, such as equipment upgrades needed to support generation of electricity, improve and maintain safe operation of the hydroelectric operating systems, as well as compliance upgrades (e.g. safety, regulatory, environmental) at NYSEG hydroelectric generating facilities.

#### Project Scope:

NYSEG's Hydroelectric Minor Capital Program is comprised of the following activities:

- Detailed inspection/investigation of existing conditions, as required.
- Conceptual and detailed design of required upgrades.
- Implementation of detailed designs to address required upgrades.

#### Project Benefits:

Projects are implemented to address a variety of electrical, mechanical, civil/structural, and compliance (i.e. safety, environmental, regulatory) requirements at NYSEG hydroelectric generating facilities. Upon project completion, upgrades at the facilities improve and address stakeholder requirements along with supporting safe operation and generation of clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Minor Capital projects such as those projects identified under the NYSEG Minor Capital Program contain many inherent risks and NYSEG has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Program / Minor Capital Project Unique Risks:**

1.Coordination with Large Major Capital Projects and Operations Activities

a.NYSEG to collaborate schedule(s) of minor capital project(s) with major capital projects and Operations to ensure site activities do not interfere (i.e. turbine-generators must be operational to support major capital project and should not operate for minor capital project).

2.NYSEG Minor Capital Projects are not subject to all Avangrid Networks Quality Management System (QMS)

a.NYSEG to assess risk(s) on each minor capital project and develop mitigation plan(s) as required.

b.NYSEG to implement QMS standards on minor capital projects as needed depending on project complexity.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

By neglecting to perform the required minor capital upgrades at the NYSEG hydroelectric facilities, NYSEG inherits additional risk of injury to personnel and / or public, and damage to the facility structure and equipment (turbine-generators, controls, auxiliary systems, etc.) inside and around each facility, which could require NYSEG to remove turbine-generating units from service and reduce available clean renewable energy capacity from New York State's renewable energy portfolio.

**Project Alternatives:**

NYSEG to assess and evaluate the following criteria for minor capital projects to prioritize project implementation:

1.Customer Focus / Compliance Projects / Regulatory Mandated

2.Safety - Dam Safety / Personnel Safety

3.Reliability Projects

4.Asset Condition Projects

5.Strategic and Efficiency

After the program / project prioritization process, NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System (as required).

Project cost estimates are:

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Kents Falls Unit 2 Turbine-Generator Major Rebuild

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>UJ-N0082-NYSEG-EG       | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG Kents Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 13.68 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Kents Falls Unit 2 turbine-generator was originally installed circa 1928 and has a rated capacity of 3.84 MW. The purpose of Kents Falls Unit 2 Turbine-Generator Major Rebuild Project is to address excessive bearing, journals, and sealing surface wear, etc. along with upgrading internal turbine components that are at end-of-life due to years of service. Rebuild of Unit 2 turbine-generator will restore the unit to service, which has been out of service since circa 2015, extend the operational life of the turbine-generating unit, and improve operational efficiency and reliability. Rebuild of Unit 2 turbine-generating unit is necessary to return the unit to service in support of New York State's Clean Energy Goals and initiatives.

#### Project Scope:

Kents Falls Unit 2 Turbine-Generator Major Rebuild Project involves the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly.
- Inspection and measurement of all turbine (critical) clearances and components during and after disassembly,
- Testing of generator field, stator and exciter,
- Upgrading of turbine assembly components, as deemed necessary, such as bottom ring, wicket gates and wicket gate bushings, and sealing services.
- In-place machining of embedded components,
- Installation of new bearing journals and rebabbiting of bearings,
- Design, manufacture and installation of new thrust bearing assembly,
- Installation of new vibration monitoring system,
- Reassembly and alignment of turbine-generator with new mechanical seal,
- Commission turbine-generator and return to service

#### Project Benefits:

Kent Falls Unit 2 Turbine-Generator Major Rebuild Project will restore operation and extend the operational life of the 3.84 MW turbine-generating unit. Upgrade and return of Unit 2 turbine-generator to service is necessary to support New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2)

Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown damage / condition to existing turbine-generator components

a.NYSEG to perform detailed condition assessment of existing components where possible, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Inadequate crane capacity for turbine-generator components

a.NYSEG to review historical drawings to document existing weights of critical turbine-generator components and compare against existing crane capacities to mitigate / reduce risk.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action**

In the event of failure of the turbine-generating unit, it could potentially result in the following consequences including but not limited to:

1.Potential or increased damage to turbine-generator components, auxiliary systems, etc. and increased risk of injury to personnel.

2.Forced outage of turbine-generating unit (and other associated equipment)

3.NYSEG being unable to comply with FERC Hydropower Operating License.

4.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Turbine Component Replacement / Upgrade

a.NYSEG to assess if targeted components (i.e. runner, generator field, and/or bearings) should be upgraded as an alternative to the turbine major rebuild.

2.Mechanical / Auxiliary System Upgrades

a.NYSEG to assess if existing mechanical / auxiliary system components (i.e. cooling water, governor, etc.) necessary for operation of the turbine-generating unit requires upgrades and should be included in project base scope.

3.Fabrication / supply of new turbine runner

a.NYSEG to assess option to fabricate and install a new turbine runner to improve and increase generating capacity instead of rehabilitating the existing turbine runner.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ 12        | \$ 2        | \$ 2        | \$ 2        | \$ 3        | \$ 3        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 12</b> | <b>\$ 2</b> | <b>\$ 2</b> | <b>\$ 2</b> | <b>\$ 3</b> | <b>\$ 3</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029            | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 297          | \$ 3        | \$ 3        | \$ 3          | \$ 53         | \$ 77           | \$ 158        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 3,545        | \$ -        | \$ -        | \$ 260        | \$ 280        | \$ 2,855        | \$ 150        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 360          | \$ -        | \$ -        | \$ 120        | \$ 60         | \$ 120          | \$ 60         | \$ -        |
| # Internal, Overheads  | \$ 246          | \$ -        | \$ -        | \$ 27         | \$ 22         | \$ 182          | \$ 15         | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Overheads - External | \$ 316          | \$ -        | \$ -        | \$ 49         | \$ 33         | \$ 208          | \$ 26         | \$ -        |
| <b>Total</b>           | <b>\$ 4,764</b> | <b>\$ 3</b> | <b>\$ 3</b> | <b>\$ 460</b> | <b>\$ 447</b> | <b>\$ 3,442</b> | <b>\$ 409</b> | <b>\$ -</b> |

[illegible]

## Mechanicville Upstream Eel Ladder Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001173              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

NYSEG Upper Mechanicville Hydroelectric Project (FERC Project No. P-2934) is located on the Hudson River in Saratoga and Rensselaer Counties, in the Town of Stillwater, NY. The facility is unstaffed with two turbine-generating units that are remotely monitored and controlled with a total rated capacity of 16.53 MW. The Project has a significant hazard dam that is owned by New York State Canal Corporation with pneumatic crest gates owned and operated by NYSEG. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

A requirement of NYSEG's new 50-year hydropower operating license issued by the Federal Energy Regulatory Commission (FERC), effective on April 1, 2021, is for NYSEG to design and install an upstream eel ladder per Section 3.3.1.1 of the Settlement Agreement to allow for safe passage of American Eel upstream of New York State Canal Corporation's (NYSCC) Lock C-3 dam.

The purpose of the Mechanicville Upstream Eel Ladder Project involves the design, fabrication, and installation of a specialized ladder system to safely (manually and / or automatically) convey American Eel that are present in the Hudson River, and downstream of NYSEG's Upper Mechanicville hydroelectric facility, from the facility's tailrace (water discharge) to a site upstream of the NYSCC Lock C-3 dam.

#### Project Scope:

NYSEG Upper Mechanicville Upstream Eel Ladder Project is comprised of the following activities:

1. Conduct a hydraulic analysis of the tailrace discharge.
2. Review results of the hydraulic analysis with federal and state agencies to determine location of Upstream Eel Ladder in the tailrace of Upper Mechanicville hydroelectric facility.
3. Conceptual and detailed design of an eel ladder, and associated structures and infrastructure, to support manual and / or automated conveyance of American Eels from the tailrace of Upper Mechanicville hydroelectric facility to the facility impoundment, which is upstream of NYSCC Lock C-3 dam. Associated structures and infrastructure includes, but is not limited to electrical power, camera(s), walking platforms / stairs, lighting, means to remove the upstream eel ladder assembly during winter months, etc.
- a. Collaboration with US Fish and Wildlife Service (USFWS) and NYS Department of Environmental Conservation (NYSDEC) is required as the design progresses and prior to installation. The design requires approval from US Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC) prior to installation.
4. Personnel, material and equipment for installation of the upstream eel ladder.

#### Project Benefits:

Upper Mechanicville Upstream Eel Ladder Project is a project to install an upstream eel ladder in the tailrace of NYSEG's Upper Mechanicville hydroelectric facility, which is a requirement of the new FERC Hydropower operating license / Settlement Agreement with USFWS and NYSDEC, to safely transfer American Eel upstream of NYSCC Lock C-3 from. Upon completion and implementation of the design, NYSEG will be compliant with Section 3.3.1.1 of the Settlement Agreement, as referenced in the FERC License.



**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult Site Access for Construction

a.Contractors to utilize crane for managing and handling materials and equipment to and from the tailrace for construction of eel ladder and associated platform(s).

2.Working in / around the Hudson River during construction

a.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Hudson River.

b.NYSEG to closely monitor river flows and follow river communications protocol during construction.

c.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

3.Stakeholder Requirements

a. NYSEG is required to consult and collaborate with federal and state agencies throughout various stages of the design. NYSEG is required to receive concurrence with the design prior to submitting to the FERC and implementation of the design.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

If NYSEG does not proceed with installation of the upstream eel ladder at the Upper Mechanicville hydroelectric facility in accordance with the new Settlement Agreement / FERC Operating License, NYSEG will be forced to retire and shutter the facility eliminating 16.53MW of clean renewable energy capacity from New York State's renewable energy portfolio.

**Project Alternatives:**

NYSEG will assess the following project alternative(s) / scope:

1.Install helical eel ladder on western wall of tailrace.

a.The eel ladder location is consistent with the location agreed to by United States Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC) in the Settlement Agreement.

b.NYSEG to perform hydraulic analysis to verify tailrace discharge flows meet the recommended attraction flows for American Eels, which are identified in USFWS / NYSDEC design guidelines for helical eel ladders.

c.NYSEG to assess if installation of baffles are required in tailrace and / or feasible to reduce tailrace flows to meet USFWS / NYSDEC recommended attraction flows for American Eels. NYSEG is required to seek concurrence from federal and state regulatory agencies on the location of the eel ladder in the tailrace prior to implementation.

2.Install helical eel ladder on eastern wall of tailrace to achieve correct attraction flows for American Eel to use the ladder.

3.Installation of automatic eel counter or manual counting of eels

a.NYSEG to investigate options / technology for installing automatic eel counter at the Mechanicville eel ladder. NYSEG is required to count the number of eels passing through the eel ladder system in accordance with the Settlement Agreement, and an automatic eel counter is new technology to the hydroelectric industry that is still being developed.

b.If NYSEG determines an automatic eel counting system is not a viable option, NYSEG will design and implement a means to manually count eels passing through the eel ladder.

NYSEG to continue to assess all project alternatives during planning of the project, as collaboration with stakeholders progresses, and in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Cadyville Upgrade Unit 1 & Unit 2 Turbine-Generator Cooling Water System Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-3254-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

NYSEG Cadyville Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 5.53 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Cadyville hydroelectric facility was constructed circa 1921 (Unit 1 and 2 turbine-generator) and has a rated total capacity of 2.4 MW. Unit 3 turbine-generator was constructed in 1986. Each turbine-generator uses water from the Saranac River for cooling of lubricating oil and bearing seals during generation of electricity. Since 1921, consumption of river water for use in generation of electricity has increased. With the addition of a mechanical turbine seal on Unit 2 turbine-generator circa 2011, and planned for Unit 1 turbine-generator, Cadyville Cooling Water System Upgrade Project is necessary to support the current and future water demand and improve operational reliability of Unit 1 & 2 turbine-generating unit.

#### Project Scope:

Cadyville Unit 1 and Unit 2 Cooling Water System Upgrade Project is comprised of the following activities:

- Conduct a study to review current turbine-generator operation and water quality requirements to minimize long-term turbine component and lubricating oil system and bearing seal wear during operation and future water demand requirements,
- Conceptual and detailed design of upgraded cooling water system and associated electric and control requirements,
- Contracted services, equipment and material to modify and/or install new water filtration system.
- Commissioning of the cooling water system and evaluate the performance of the turbine-generating units upon completion of the upgrade.

#### Project Benefits:

Cadyville Unit 1 and Unit 2 Cooling Water System Upgrade Project will allow for continued and increased use of river water necessary to support generation of electricity. The current cooling water system cannot support the forecasted water consumption increase upon installation of the mechanical turbine seal on Unit 1 turbine-generator. Upgrades will lead to increased operational reliability and reduce wear on critical components of Unit 1 and Unit 2 turbine-generators such as mechanical seals and associated component interface. Upon completion of the cooling water system upgrade at Cadyville, NYSEG will improve operational reliability of the turbine-generating units necessary to support New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Corrosion and scaling

a.NYSEG to perform condition assessment / inspection of existing cooling water system to confirm functionality. NYSEG to ensure new cooling water system design considers corrosion protection.

2.Water quality issues of cooling water system

a.NYSEG to analyze / consider existing river water composition during design of new / upgraded cooling water system.

3.Environmental regulations

a.NYSEG to develop permitting matrix and assess environmental affects (if any) of the new / upgraded cooling water system.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure, or loss of required water volume necessary for the generation of electricity, with the current cooling water system, it could potentially result in the following consequences including but not limited to:

1.Potential damage to the turbine-generating unit(s), and increased risk of injury to personnel.

2.Forced outage of turbine-generating units (and other associated equipment)

3.NYSEG being unable to comply with operational requirements of FERC Hydropower Operating License.

4.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess the following project alternative(s) / scope:

1.Implementation / upgrades to a closed-loop cooling system.

2.Implementation / addition of advanced filtration systems for the Unit 1 and Unit 2 cooling water system

3.Implementation / addition of heat exchangers and / or heat pumps to the Unit 1 and Unit 2 cooling water systems for improved efficiency

NYSEG will assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Saranac Plant Control Systems Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001116              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

NYSEG Saranac Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, New York. The four hydroelectric generating facilities, which are comprised of High Falls, Cadyville, Mill C, and Kent Falls, are unstaffed and are remotely monitored and controlled. The Project has three high hazard dams at each facility, with exception to Mill C which has a significant hazard dam, used for impounding water for use in generation of renewable hydroelectric energy. The twelve hydroelectric turbine-generating units have a combined generation capacity of 40.26MW. The facilities are run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The four hydroelectric facilities and turbine-generating units were constructed between 1921 and 1986. The latest plant control system was commissioned in 1986 after installation of Cadyville Unit 3 turbine-generator. The Saranac hydroelectric facility turbine-generating controls and generator protection and control systems are starting to fail leading to reduced operational reliability of the turbine-generating units. Original Equipment Manufacturer (OEM) replacement components are obsolete or difficult to locate, requiring procurement of refurbished components or after-market parts to restore the turbine-generating unit(s) to service.

The purpose of the Saranac Plant Control Systems Upgrade Project is to upgrade the current turbine and generator protection and controls hardware with state-of-the-art hardware and technology that brings the control systems in-line with current standards resulting in increased operational reliability and availability of parts.

#### Project Scope:

The Saranac Plant Control System Upgrade Project involves:

- Review and updating of the existing turbine and generator protection and control system drawings for each hydroelectric facility,
- Identifying current / state-of-the-art technology to replace, upgrade and standardize the existing turbine and generator protection and control systems.
- Detailed design of required modifications to implement the new turbine and generator protection and control hardware.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and install new turbine and generator protection, control system hardware and cabinetry.

#### Project Benefits:

Saranac Plant Control System Upgrade Project involves the upgrade of existing turbine-generator control and protection systems for the four hydroelectric facilities due to difficulty with locating OEM components that are obsolete or at end-of-life. Upgrade of the turbine and generator control and protection systems will extend the operational life and reliability of the hydroelectric generating facilities and continue NYSEG's production of clean renewable energy, which supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2)

Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting samples / testing for regulated building materials during design to identify need for abatement during construction.

2.Difficult transition into new Plant Logic Control (PLC) program

a.There is a risk of error in the transition and programming of logic and routines from the existing turbine and generator control systems to the new PLC hardware and software.

b.NYSEG to reduce risk by ensuring proper testing and operational checks for each PLC data point after migration to the new PLC hardware and software.

3. Issues during Commissioning

a.Due to the complexity involved of integrating new turbine and generator protection controls and equipment into the existing facility protection and controls, NYSEG to develop detailed commissioning plan during design and contract Commissioning Engineer familiar with hydroelectric facilities.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of the existing turbine-generator controls, including the inability to locate aftermarket components, it could potentially result in the following consequences including but not limited to:

1.Potential flooding of plant, including damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage of turbine-generating units (and other associated equipment).

3.NYSEG being unable to maintain and monitor operational requirements and compliance with FERC Hydropower Operating License.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.NYSEG plans to utilize a Contractor's software program to automatically transfer the existing logic of the existing PLC to the new PLC. If NYSEG is unable to execute a contract with the Contractor and utilize the software program, NYSEG will utilize design engineer(s) to manually re-write the control logic into the new PLC.

If NYSEG determines there is risk to personnel safety and operation of the facility(s) in its current condition, NYSEG will suspend operation of the turbine-generating unit(s) until the required plant control upgrades can be implemented.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Bradford Concrete Spillway And Toe Resurfacing Improvement Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001174              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

NYSEG Bradford Dam is a low hazard dam, as classified by New York State Department of Environmental Conservation (NYSDEC Dam No. 054-0377), and is located in Bradford, New York. The dam, which was installed circa 1928, is unstaffed and locally operated in accordance with NYSDEC approved Bradford Dam Operation Plan for Water Level Management of Waneta and Lamoka Lakes (Plan). Outflow from Bradford Dam enters Mud Creek.

Bradford Concrete Spillway and Toe Resurfacing Improvement Project is a project to reconstruct and resurface the dam, spillway, and dam toe. Recent inspections noted areas of the dam, spillway, and dam toe with significant spalling and areas that are at end of life. The project will extend useful life of the dam and continue NYSEG's responsibility for public safety of Waneta and Lamoka Lakes while maintaining safe operation and compliance of the dam in accordance with NYSDEC requirements and Bradford Dam Operation Plan.

#### Project Scope:

Bradford Concrete Spillway and Toe Resurfacing Improvement Project is comprised of the following activities:

- Detailed inspection of the dam structure with identification of area requiring reconstruction,
- Detailed design of upgrades to the dam structure,
- Personnel, equipment, and material to implement the design upgrades.

#### Project Benefits:

NYSEG Bradford Concrete Spillway and Toe Resurfacing Improvement Project is a dam safety project that will reconstruct the dam to address degradation identified through inspections. The outcome of the project will result in improved overall dam structural integrity, extend the life of the dam, fulfill NYSEG's on-going commitment and responsibility for public safety, and continue NYSEG's responsibility and obligation for management of lake elevations on Waneta and Lamoka Lakes in accordance with Bradford Dam Operation Plan.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks**

1.Using existing bypass gate and / or other means (siphons, flashboards, etc.) to divert Waneta and Lamoka Lake outflow through the construction area while maintaining lake level compliance according to Bradford Dam Compliance Plan.

2.Working in / around water upstream and downstream of Bradford Dam during construction

a.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around Bradford Dam.

c.NYSEG to closely monitor lake levels and lake outflows during construction.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities are required to be operated and maintained in a safe and responsible manner. If implementation of Bradford Dam's Concrete Spillway Upgrade Project is delayed, NYSEG will increase inspection of the dam structure and continue to operate and maintain Bradford Dam according to NYSDEC requirements and in-line with Bradford Dam Operations Plan. The current and on-going risk is the continued degradation of the dam spillway and toe due to discharge of flow from Waneta and Lamoka Lakes.

**Project Unique Risk of No Action:**

In the event of a partial or complete failure of the dam spillway, it could potentially result in the following consequences including but not limited to:

1.Potential damage to public property and/or assets, and increased risk of public injury for the public using Waneta and Lamoka Lake for recreation.

2.NYSEG being unable to comply with NYSDEC Bradford Dam Operation Plan.

3.Negative impact to ecological systems.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Installation of a labyrinth spillway adjacent to and / or replace the existing Bradford dam spillway with new labyrinth spillway.

a.Labyrinth spillway would require significantly more capital investment and coordination with New York State Department of Environmental Conservation (NYSDEC) for approval.

b.Labyrinth spillway has potential to reduce NYSEG's operational response at the dam to adjust lake elevations in accordance with Bradford Dam Operation Plan.

2.Dam bypass gates

a.NYSEG to assess feasibility and need to remove the existing bypass gates for application of coating and upgraded seals to extend the life of the gates.

b.NYSEG to assess feasibility and need to remove and upgrade existing bypass gates to allow for future automation.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## High Falls Unit 2 Generator Rewind

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001115              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

NYSEG High Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 15.0 MW. The Project has a high hazard dam used to impound water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

During testing of Unit 2 generator in 2019, both generator stator and generator field windings revealed grounds / faults preventing further operation. Unit 2 generator has a capacity of 4.0 MW and was installed circa 1949. Based on the grounds identified in the generator stator and field, NYSEG has identified the need to rewind the generator.

#### Project Scope:

High Falls Unit 2 Generator Rewind Project is comprised of the following activities:

- Generator specialist to remove generator field poles and generator stator windings.
- Rewind generator field poles, generator stator windings.
- Reinstall generator field into stator along with associated generator structures and bearings after rewind is complete.
- Realign generator assembly with turbine and recouple.
- Commission turbine-generator and return to service.

#### Project Benefits:

High Falls Unit 2 Generator Rewind Project involves rewinding of both generator field and stator due to its current state (faulted). Upon completion, 4.0 MW of capacity will be returned to service and will have its service life extended by approximately 25 to 35 years. Rewind of the generator field and stator, and returning the turbine-generator to service, supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown damage / condition to existing generator components

a.NYSEG to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Inadequate crane capacity for generator components

a.NYSEG to review historical drawings to document existing weights of critical generator components and compare against existing crane capacities to mitigate / reduce risk.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

With Unit 2 generator stator and field presently faulted / grounded, the following would occur if no action were taken to rewind:

1.NYSEG being unable to comply with FERC Hydropower Operating License.

2.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Mechanical / Auxiliary System Upgrades

a.NYSEG to assess if existing mechanical / auxiliary system components (bearings, governor(s), etc.) require upgrades and should be included in project base scope.

2.Fabrication / supply of new generator

a.NYSEG to assess option to fabricate / supply new generator stator and field instead of rehabilitating the existing generator assembly.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 5          | \$ -        | \$ -        | \$ -        | \$ 0        | \$ 5          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 159        | \$ -        | \$ -        | \$ -        | \$ 2        | \$ 157        |  |  |
| # Internal - Non-AC    | \$ 21         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 21         |  |  |
| # Internal, Labor      | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1          |  |  |
| # Internal, Overheads  | \$ 24         | \$ -        | \$ -        | \$ -        | \$ 0        | \$ 24         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ 38         | \$ -        | \$ -        | \$ -        | \$ 0        | \$ 38         |  |  |
| <b>Total</b>           | <b>\$ 249</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 3</b> | <b>\$ 246</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025            | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 132          | \$ 102          | \$ 29         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,312        | \$ 2,002        | \$ 310        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 60           | \$ 60           | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 179          | \$ 154          | \$ 26         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 186          | \$ 160          | \$ 27         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,869</b> | <b>\$ 2,478</b> | <b>\$ 392</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Kents Falls Internal Riser Shaft and Tank Project

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>UJ-N0084-NYSEG-EG       | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP2 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

NYSEG Kents Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 13.68 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Kent Falls Dam Internal Riser Shaft and Tank Project involves installation of a new surge tank to replace the present tank structure, which has an integral riser shaft pipe, and a new reinforced concrete surge tank foundation. The surge tank is the original riveted lapjoint construction, installed circa 1928, and is at end-of-life.

In March 2017, the surge tank experienced significant leaks at the riveted construction joints. Further inspection of the tank and internal riser shaft revealed that a portion of construction joints were severely eroded, and a portion of the riser shaft had failed during operation and was at end of life. In 2020, an independent consultant (IC) conducted a safety inspection and analysis of the surge tank structure based on the FERC's Part 12D engineering guidance. The IC recommended that NYSEG perform a seismic analysis of the surge tank to confirm if the tank structure conforms with the current seismic requirements. The IC concluded the existing tank structure and associated bracing does not comply with current seismic requirements.

#### Project Scope:

Kent Falls Internal Riser Shaft and Tank Project is comprised of the following activities:

- Detailed inspection and analysis of the existing surge tank structure,
- Financial analysis to determine cost effective solution for installation of a new surge tank,
- Conceptual and detailed design on new surge tank, new riser shaft, and new surge tank foundation.
- Conceptual and detailed design to remove existing surge tank and installation of new surge tank and associated foundations.
- Design to include upgrades to electrical, control, communication and pneumatic systems,
- Procurement of services, equipment, and material to implement the detailed designs.

#### Project Benefits:

Kent Falls Internal Riser Shaft and Tank Project involves installation of a new surge tank, riser shaft, and foundation. Installation of a new surge tank will allow NYSEG to restore full availability and capacity of the 13.68MW hydroelectric facility, extend the operational life of the hydroelectric facility, and continue NYSEG's responsibility and FERC's requirement for safe and reliable operation of the facility, which supports New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Surge Tank / Riser Shaft Fabrication Lead Times

a.NYSEG to initiate procurement of new steel surge tank and riser shaft prior to construction and installation RFP to ensure surge tank and riser shaft arrive on site prior to General Contractor mobilization.

2.Integration of new surge tank and riser shaft on new foundation and to existing penstock section

a.NYSEG to mitigate risk by requesting detailed site-specific health and safety plans and work plans from Contractor(s) on site to ensure careful consideration is accounted for when fitting up the new surge tank and riser shaft on the new foundation and existing penstock.

b.NYSEG to employ an on-site Field Construction Manager during construction to oversee construction methods for strict adherence to the project work plan.

c.NYSEG to survey existing conditions (existing penstock to remain) prior to and after removal of existing surge tank / riser shaft for use during new surge tank and riser shaft fabrication and installation.

3.Unknown subsurface conditions

a.NYSEG to perform detailed subsurface investigations (borings, test pits, etc.) to document existing conditions along the existing penstock and surge tank for new surge tank and riser shaft design.

4.Difficult Site Access for Construction

a.Contractor(s) to utilize existing access road(s) during construction and / or use crane(s) for mobilizing materials and equipment to site. NYSEG to perform mandatory on-site pre-bid walkthrough with Contractor's bidding on project to verify all bidders understand and consider means for access.

b.NYSEG to complete constructability review during conceptual / detailed design to mitigate risk(s).

5.Crane Placement – Site Access Constraints

a.All crane vendor(s) to develop Critical Lift Plan(s) and include crane specifications, crane pick distances, lift weights, subsurface bearing conditions, etc.

6.Work around / near existing wetlands on site.

a.NYSEG to survey and stake existing wetlands on site and require strict compliance, with independent verification and monitoring, to the project developed Storm Water Pollution and Prevention Plan (SWPPP) prior to and during construction.



**Risk of No Action:**

Common Risk of No Action:

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

In the event of a failure of the existing surge tank and remaining riser shaft, it could potentially result in the following consequences including but not limited to:

1. Uncontrolled release of flows requiring activation of NYSEG's Emergency Action Plan.
2. Negative impact to ecological systems.
3. Potential damage to facility property, powerhouse structure, equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel and / or public.
4. Forced outage of turbine-generating units (and other associated equipment) due to not being able to convey water for generation of renewable energy.
5. NYSEG being unable to comply with FERC Hydropower Operating License.
6. NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG has assessed and evaluated the following project alternatives:

1. Upgrading existing surge tank / riser shaft
2. Removal of existing surge tank and installing new surge tank, riser shaft, and new foundation in its current location
3. Installation of new surge tank, riser shaft, and foundation upstream of existing surge tank foundation and utilize existing surge tank foundation as thrust block – Selected Alternative

NYSEG contracted an Independent Consultant (IC) to develop a detailed analysis of project alternatives, including cost estimates, and determined Alternative #3 (new surge tank / riser shaft / new location) meets the most stakeholder requirements and is the most cost-effective solution.

NYSEG will further assess all project alternatives during project planning in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ 9         | \$ 2        | \$ 2        | \$ 2        | \$ 2        | \$ 2        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ 5         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 5        |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ 1         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1        |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ 1         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1        |  |  |
| <b>Total</b>           | <b>\$ 16</b> | <b>\$ 2</b> | <b>\$ 2</b> | <b>\$ 2</b> | <b>\$ 2</b> | <b>\$ 9</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027            | 2028          | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-----------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ 589          | \$ 14         | \$ 120          | \$ 339          | \$ 116        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 5,625        | \$ 210        | \$ 2,690        | \$ 2,595        | \$ 130        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 320          | \$ 20         | \$ 100          | \$ 100          | \$ 100        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 447          | \$ 18         | \$ 235          | \$ 179          | \$ 16         | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 523          | \$ 21         | \$ 266          | \$ 203          | \$ 33         | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,503</b> | <b>\$ 282</b> | <b>\$ 3,410</b> | <b>\$ 3,416</b> | <b>\$ 395</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Bradford Dam Automation Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001175              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

NYSEG Bradford Dam is a low hazard dam as classified by New York State Department of Environmental Conservation (NYSDEC Dam No. 054-0377), and is located in Bradford, New York. The dam, which was installed circa 1928, is unstaffed and locally operated in accordance with NYSDEC approved Bradford Dam Operation Plan for Water Level Management of Waneta and Lamoka Lakes (Plan). Outflow from Bradford Dam enters Mud Creek.

Bradford Dam Automation Project is a project to upgrade from the existing manual flood / control gate operation and install necessary infrastructure that allows for remote operation of the dam in accordance with Bradford Dam Operation Plan. Presently, flood / control gates are operated locally requiring NYSEG personnel being dispatched to perform operations on a routine basis throughout the year.

Project scope will require installation of remote instrumentation, control systems and security cameras to monitor lake elevations and have automatic and remote operation of dam flood / control gates to maintain lake elevations according to NYSDEC's approved Bradford Dam Operation Plan.

#### Project Scope:

Bradford Dam Automation Project involves the following activities:

- Study to determine communication infrastructure required around Bradford Dam and between Waneta and Lamoka Lakes for remote operation and monitoring of the dam,
- Conceptual and detailed design's allowing for local and remote operation and monitoring of Bradford Dam and lake level instrumentation,
- Personnel, equipment, and material to implement the design upgrades.

#### Project Benefits:

NYSEG Bradford Dam Automation Project is a dam safety project that will allow for automatic and remote monitoring and operation of the dam. Automation will improve NYSEG's response and compliance and management of Waneta and Lamoka Lakes according to NYSDEC's approved Bradford Dam Operation Plan. Automation of the dam will reduce the need for NYSEG personnel to make local adjustments at the dam to maintain lake level compliance.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse Lake Levels / Weather Conditions:

a.Mitigation Plan: 1) Review historical lake level information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high lake levels, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks**

1.Using existing bypass gate and / or other means (siphon, flashboards, etc.) to divert Waneta and Lamoka Lake outflow through the around construction area while maintaining compliance with Bradford Dam Compliance Plan.

2.Working in / around water upstream and downstream of Bradford Dam during construction

a.NYSEG to assess need for cofferdam to dewater construction work area for potential installation of automated bypass gates and minimize construction risk(s).

b.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around Bradford Dam.

c.NYSEG to closely monitor lake levels and lake outflows during construction.

3.Risk to public upstream and downstream of dam with remote operability of bypass gates

a.NYSEG to assess need to install cameras and / or dam safety signs and / or sirens downstream of dam to alert public of gate adjustments resulting in potentially higher water flow entering into Mud Creek.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities are required to be operated and maintained in a safe and responsible manner. If implementation of Bradford Dam's Automation Project is delayed, NYSEG will continue to operate and maintain Bradford Dam according to NYSDEC requirements and in-line with Bradford Dam Operations Plan. The current and on-going risk is the potential delay of NYSEG personnel visiting Bradford Dam to make required gate adjustments if a major storm event were to occur, thus NYSEG potentially not being able to comply with the lake elevations identified in the Plan.

**Project Unique Risk of No Action:**

In the event NYSEG is unable to respond to make gate adjustments on site, it could potentially result in the following consequences including but not limited to:

1.NYSEG being unable to comply with NYSDEC Bradford Dam Operation Plan.

2.Additional risk of injury to public upstream and downstream of dam and the public using Waneta and Lamoka Lake for recreational purposes.

**Project Alternatives:**

1.Installation of PLC / HMI , including housing structure, at Bradford Dam and lake elevation instrumentation between Waneta and Lamoka Lakes for local monitoring and adjustments.

2.Installation of new motor actuator on existing bypass gate to match current NYSEG standards.

a.NYSEG to assess feasibility of installing new actuator capable of remote / local operability of existing bypass gates.

3.Installation of a labyrinth spillway adjacent to and / or replace the existing Bradford dam spillway with new labyrinth spillway to reduce the number of visits necessary by NYSEG personnel to adjust lake elevations according to the Bradford Operation Plan.

a.Labyrinth spillway would require significantly more capital investment and coordination with New York State Department of Environmental Conservation (NYSDEC) for approval.

4.Dam bypass gates

a.NYSEG to assess feasibility and need to remove and upgrade existing bypass gates to allow for automation.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

The project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are routinely reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Mill C Spillway Concrete Improvements Project

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-3272-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

NYSEG Mill C Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed with three hydropower turbine-generating units that are remotely monitored and controlled with a total facility capacity of 6.05 MW. The Project has a significant hazard dam used to impound water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate hydroelectric energy.

Mill C Spillway Concrete Improvement Project is a project to reconstruct and resurface the ogee section and construction joints on the dam spillway. The project will include localized surface demolition, reconstruction, grouting and sealing of construction joints on the dam spillway along with upgrading the dam drainage system to alleviate hydraulic pressure behind the dam. The improvement project is necessary to address deficiencies identified during a 2016 FERC inspection of the dam structure. NYSEG is required to complete the improvement project by 2029.

#### Project Scope:

Mill C Spillway Concrete Improvement Project is comprised of the following activities:

- Inspection and identification of areas on the dam spillway requiring reconstruction,
- Detailed design of upgrades to the spillway surface along with design of an upgraded dam drainage system,
- Personnel, equipment, and material to implement the design upgrades.

#### Project Benefits:

NYSEG Mill C Spillway Concrete Improvement Project is a FERC required dam safety project that will address degradation of the dam spillway ogee section and construction joints. Upon project completion, the overall dam spillway surface, structural integrity, and dam drainage system will be improved prolonging and extending the life of the significant hazard classified dam. Integrity of the dam, including the spillway is required to pass river flows. Upon completion, the project will address concerns observed by the Federal Energy Regulatory Commission during their annual inspection in 2016.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks**

1.Difficult Site Access for Construction

a.Contractor(s) to transport materials onto spillway for construction by crane and / or by building an access road to the base of the dam.

b.Contractor required to set up temporary infrastructure (lighting, electrical, construction trailer, etc.) at site during construction.

c.NYSEG to perform constructability review during design.

2.Diverting flow around portions of the dam during construction.

a.NYSEG to assess options to divert river / bypass flow around construction area by use of existing bypass gate(s) and / or other means (siphon, flashboards, etc.).

3.Working in / around the Saranac River during construction

a.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Saranac River.

c.NYSEG to closely monitor river flows and follow river communications protocol during construction.

### **Risk of No Action:**

#### **Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

In the event of a failure of portions of the dam spillway, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam resulting in activation of NYSEG's Emergency Action Plan.

2.Increased risk of injury to personnel and/or public in and around Mill C Powerhouse's or the public using the Saranac River for public recreation downstream of the dam

3.Negative impact to ecological systems.

4.Forced outage of turbine-generating units at Mill A and/or B Powerhouse (and other associated equipment) due to not being able to impound water for generation of renewable energy.

5.NYSEG being unable to comply with FERC Hydropower Operating License.

6.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives

NYSEG to assess and evaluate the following project alternative(s) / scope:

- NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

[illegible]



## Rainbow Falls Powerhouse Entrance Hill Stabilization

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001127              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H1 2026 |

#### Project description:

NYSEG Rainbow Falls Hydroelectric Project (FERC Project No. P-2835) is located on the Ausable River in the Town of Keeseville, New York. The facility is unstaffed, with two (2) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 2.64 MW. The Project has a significant hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Rainbow Falls Powerhouse Entrance / Hill Stabilization Project involves installation of drainage, regrading of the access road, and stabilization of the existing rock slope to reduce erosion of the driveway and parking area, which is elevated above the powerhouse entrance.

#### Project Scope:

The project scope is for conceptual engineering and an alternative analysis to determine the best option to stabilize the existing rock slope from the elevated driveway down to the NYSEG Rainbow Falls powerhouse. Review and redesign of the powerhouse entrance and access road slope and drainage is also required to reduce the water runoff / ice accumulation during the seasons that affects personnel safety (slippery surfaces, etc.) and stability of the existing rock slope down to the powerhouse. Upon finalizing the design, a contract will be executed to implement (drainage, regrading, rock anchors, fencing, etc.).

#### Project Benefits:

Regrading of the access road to the powerhouse, installation of drainage that redirects and reduces runoff and ice accumulation away from Rainbow Falls Powerhouse entrance, along with stabilization of the rock slope from the driveway to the powerhouse will significantly improve personnel and facility safety, public safety who access the area for white water rafting, and facility access.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate suppliers and solutions, if possible, 3) identify material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Weather Conditions:

a.Mitigation Plan: 1) Add contingency into project schedule(s) to account for unexpected major storm events, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Construction work in proximity to Rainbow Falls penstocks

a.NYSEG to mitigate risk by requesting detailed site-specific health and safety plans and work plans from Contractor(s) to ensure careful consideration is accounted for when working near existing penstocks.

b.NYSEG will dewater the penstocks during construction work around penstocks to eliminate any risk of uncontrolled release of water flow around Powerhouse in the event of an incident.

c.NYSEG to employ an on-site Field Construction Manager during construction to oversee construction methods for strict adherence to the project work plan.

2.Steel Platform Fabrication Lead Times

a.NYSEG to request Contractor complete fabrication of the steel framed platform in Q1 2025 prior to Contractor mobilizing to site in Q2 2025. NYSEG to ensure platforms arrive on site prior to General Contractor mobilization.

3.Unknown subsurface conditions

a.NYSEG performed detailed subsurface investigations (borings, test pits, etc) to document existing conditions around Rainbow Falls access road during design to mitigate risk.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of the Rainbow Falls Powerhouse access road, it could potentially result in the following consequences including but not limited to:

1.Increased risk of injury or loss of life to company personnel accessing NYSEG Rainbow Falls Access Road and / or public accessing whitewater entry in Ausable Chasm for fishing, recreation, etc.

2.NYSEG being unable to comply with FERC Hydropower Operating License.

**Project Alternatives:**

NYSEG to assess the following project alternative(s) / scope:

1.Install culvert at access road entrance only

a.NYSEG assessed the option of only installing a culvert at the access road entrance to the Rainbow Falls Powerhouse access road. This alternative was not selected as further actions were required to address drainage on the Rainbow Falls hydroelectric site and powerhouse rockfall stabilization.

NYSEG will assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022         | 2023          | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|--------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 93           | \$ -        | \$ -        | \$ 1         | \$ 19         | \$ 73           |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # External Services    | \$ 1,814        | \$ -        | \$ -        | \$ 59        | \$ 360        | \$ 1,394        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -         | \$ -          | \$ -            |  |  |
| # Internal, Labor      | \$ 49           | \$ -        | \$ -        | \$ -         | \$ 17         | \$ 32           |  |  |
| # Internal, Overheads  | \$ 243          | \$ -        | \$ -        | \$ 7         | \$ 43         | \$ 193          |  |  |
| # Materials            | \$ 3            | \$ -        | \$ -        | \$ -         | \$ -          | \$ 3            |  |  |
| # Overheads - External | \$ 412          | \$ -        | \$ -        | \$ 11        | \$ 94         | \$ 306          |  |  |
| <b>Total</b>           | <b>\$ 2,614</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 78</b> | <b>\$ 534</b> | <b>\$ 2,002</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025            | 2026         | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|--------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 80           | \$ 80           | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,230        | \$ 1,190        | \$ 40        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 55           | \$ 55           | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 97           | \$ 93           | \$ 3         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 104          | \$ 100          | \$ 3         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,565</b> | <b>\$ 1,518</b> | <b>\$ 47</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Kents Falls Dam Low Level Floodgate Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-3263-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

NYSEG Kents Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 13.68 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Kents Falls Dam was constructed circa 1928. The Low-Level Floodgate Project is a dam safety project. The project scope involves the addition of a new concrete extension on the right abutment downstream side of the dam, installation of two new low-level flood gate valves, including new motor operated valve operators, and resurfacing the upstream side of the right dam abutment face to reduce water leakage through the right abutment face. The low-level flood gate valve's and manually operated gear driven valve operators are original to the dam and difficult to operate when called upon / opened for service during flood events. NYSEG is looking to add redundant gates downstream of the right abutment to improve personnel safety, operability and regulate the river elevations and river bypass flows during inspection, maintenance and future construction activities in and around the dam.

#### Project Scope:

Kents Falls Dam Low-Level Floodgate Project is comprised of the following activities:

- Inspection of the right dam abutment (upstream and downstream) including floodgate portals,
- Identification and specification of motor operated valve operators consistent with other NYSEG hydroelectric facilities for standardization purposes,
- Conceptual and detailed design for new concrete extension, installation of new floodgate valves, valve operators and resurfacing of the upstream side of the right dam abutment,
- Design to include all power and control upgrades to operate floodgates locally and remotely,
- Procurement of services, equipment, and material to implement the detailed designs.

#### Project Benefits:

Kents Falls Dam Low Level Floodgate Project is a dam safety project that involves extension of the downstream dam right abutment, installation of two new low-level floodgate valves with motor operators to improve opening and closing response time when placed into service. The project will also address water infiltration through the dam's right abutment. Upgrades will improve personnel safety by reducing the potential for injury when operating the current valves and dam integrity. The project will extend the life of the floodgates by approximately 40 years and improve operation of the dam structure and continue NYSEG's responsibility and FERC's requirement for safe operation and maintenance of the high hazard dam and hydroelectric facility.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability.

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Unknown damage / condition to existing floodgate portals and existing upstream low-level gates

a.NYSEG to perform detailed condition assessment, bathymetric survey, and dive inspection of the dams existing right abutment prior to design and bid to mitigate and reduce risk.

2.Using existing upstream leaking low-level floodgates as a cofferdam during construction

a.NYSEG to assess potential of reinforcing or replacing the existing upstream low-level floodgates stoplogs to prevent leakage into construction work area.

3.Working in / around the Saranac River during construction

a.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in the river.

### **Risk of No Action:**

#### **Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

In the event of a failure with the existing low-level floodgates, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam requiring activation of Emergency Action Plan.

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public for those located downstream of Kent Falls dam.

4.Forced outage of turbine-generating units at Kent Falls powerhouse (and other associated equipment) due to not being able to impound water for generation of renewable energy.

5.NYSEG being unable to comply with FERC Hydropower Operating License.

6.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

NYSEG to assess and evaluate the following project alternative(s) / scope:

- ## Basis for Project Estimates

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

c.analogous cost estimated from similar projects,

e.applicable overheads and allocations.

## FINANCIAL INFORMATION

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 3          | \$ -        | \$ -        | \$ -        | \$ 0        | \$ 3          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 148        | \$ -        | \$ -        | \$ -        | \$ 2        | \$ 146        |  |  |
| # Internal - Non-AC    | \$ 16         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 16         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ 22         | \$ -        | \$ -        | \$ -        | \$ 0        | \$ 22         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ 34         | \$ -        | \$ -        | \$ -        | \$ 0        | \$ 34         |  |  |
| <b>Total</b>           | <b>\$ 223</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 3</b> | <b>\$ 221</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 139          | \$ 28         | \$ 111          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,322        | \$ 262        | \$ 2,060        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 65           | \$ 25         | \$ 40           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 198          | \$ 22         | \$ 176          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 217          | \$ 26         | \$ 191          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,940</b> | <b>\$ 363</b> | <b>\$ 2,577</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Cadyville and Kents Falls Facility and Window Upgrades

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-004502              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

NYSEG Cadyville Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three (3) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 5.53 MW. The Project has a high hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The NYSEG Kent Falls Hydroelectric Project (FERC Project No. P-2738), is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three (3) hydropower turbine-generating units that are remotely monitored and controlled with a total rated capacity of 13.68 MW. The Project has a high hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent pond level is maintained, while utilizing the natural flow of the river to generate hydroelectric energy.

NYSEG Cadyville and Kent Falls Facility and Window Upgrades Project will implement building upgrades to both Cadyville and Kents Falls Powerhouses. During previous facilities assessments, NYSEG identified the need to install upgrades to the facilities, including the façades, windows, roof scuppers, framing/columns, and/or building exterior. In 2024, FERC conducted a security inspection of the Cadyville and Kents Falls facilities and mandated NYSEG upgrade the windows and site fencing to improve site security and ensure operational efficiency and long-term safety by June 2026.

As part of the project, a detailed engineering inspection will be performed to identify new, and confirm previously identified, problematic areas to be addressed under this project's scope of work.

#### Project Scope:

NYSEG Cadyville and Kents Falls Facility and Window Upgrades Project is comprised of the following activities:

- Detailed inspection/investigation to confirm existing conditions at both facilities.
- Conceptual and detailed design of building upgrades, including upgrades to façade, windows, roof scuppers, floors, framing/columns, and/or building exterior.
- Implementation of detailed designs to install new windows, address problematic areas, and structural upgrades on Cadyville and Kents Falls facilities.

#### Project Benefits:

Installation of a new, upgraded windows, which are original to the facility, along with addressing problematic areas at Cadyville and Kents Falls hydroelectric facility will extend the life and maintain integrity of the facility and are required to address FERC security mandates provided to NYSEG in September 2024. Proactive measures to address these areas will reduce the potential for damage to the facility, turbine-generators and associated equipment during operation and allow for continued reliable operation of renewable energy at Cadyville and Kents Falls hydroelectric facilities in support of New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials during design to identify need for abatement during construction.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

By neglecting to perform the required facility and window upgrades at Cadyville and Kents Falls facilities, NYSEG inherits additional risk of damage to the facility structure and equipment (turbine-generators, controls, auxiliary systems, etc.) inside each facility, which could require NYSEG to remove turbine-generating units from service and reducing available clean renewable energy capacity from New York State's renewable energy portfolio. Additionally, NYSEG would be neglecting the FERC requirement to implement security upgrades to the facilities.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s):

1.Replacement of windows at Cadyville and Kents Fall facilities with flood-resistant / proof windows.

a.Project alternative may require strengthening of window jambs and sills as required for upgraded windows.

b.Perform structural analysis of existing window framing to determine the need to include in the project scope.

2.Upgrade concrete beams / columns at Kents Falls Powerhouse

a.The previous facility condition assessment discovered cracks between the concrete columns and concrete beams. A detailed inspection and structural analysis of the framing members will be conducted to determine the need to address in the project scope.

3.Upgrade steel post bases located on the turbine-generating floor at Cadyville Powerhouse due to corrosion build-up on steel framing.

a.The previous facility condition assessment recommended cleaning and applying corrosion resistant coating to existing steel members. A detailed inspection and structural analysis of the framing members will be conducted to determine the need to address in the project scope.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.



Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026          | 2027          | 2028          | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|---------------|---------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ 130          | \$ -        | \$ 31         | \$ 49         | \$ 50         | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 821          | \$ -        | \$ 190        | \$ 561        | \$ 70         | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 180          | \$ -        | \$ 60         | \$ 60         | \$ 60         | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 80           | \$ -        | \$ 24         | \$ 46         | \$ 10         | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 117          | \$ -        | \$ 39         | \$ 58         | \$ 20         | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,328</b> | <b>\$ -</b> | <b>\$ 344</b> | <b>\$ 774</b> | <b>\$ 210</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Cadyville Switchgear And Generator Protection Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-1719-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### **Project description:**

NYSEG Cadyville Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 5.53 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Cadyville hydroelectric facility was constructed circa 1921 (Unit 1 and Unit 2 turbine-generator) with Unit 3 turbine-generator constructed in 1986. Replacement parts and components for the Original Equipment Manufacturer (OEM) switchgear and generator protection systems are difficult to locate or obsolete requiring procurement of refurbished components or after-market parts to restore the turbine-generator(s) to service.

The purpose of Cadyville Switchgear and Generator Protection Upgrade Project is to upgrade the current switchgear and generator protection hardware to meet current arc flash requirements for the protection of personnel, state-of-the-art hardware and technology that brings the facility in-line with current standards resulting in increased personnel safety, operational reliability and availability of parts for future maintenance.

#### **Project Scope:**

Cadyville Switchgear and Generator Protection Upgrade Project involves the following activities:

- Review and updating of the existing switchgear and generator protection system drawings.
- Identify new switchgear and generator protection systems that comply with current industry standards / state-of-the-art technology that allow for standardizing switchgear and generator protection systems across NYSEG's hydroelectric generation fleet, where applicable.
- Detailed design of required modifications to implement the new switchgear and necessary upgrades to generator protection hardware and software.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and install new switchgear and generator protection hardware, software and cabinetry.

#### **Project Benefits:**

Cadyville Switchgear and Generator Protection Upgrade Project involves installation of new switchgear and generator protection hardware and software due to difficulty with locating OEM components that are obsolete or at end-of-life. Upgrade of the switchgear and generator protection system will extend the operational life and reliability of the hydroelectric generating facility and continue NYSEG's production of clean renewable energy, which supports New York State's Clean Energy Goals and initiatives.

#### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

Common Project Risks:

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2)

Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Risk of No Action:**

Common Risk of No Action:

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

In the event of failure to the current switchgear and / or generator protection hardware, including the inability to locate aftermarket components, it could potentially result in the following consequences including but not limited to:

1. Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.
2. Forced outage of turbine-generating unit (and other associated equipment)
3. NYSEG being unable to comply with FERC Hydropower Operating License.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1. Upgrading Generator Protection and Controls only

a. Inherit risk integrating generator protection and controls upgrades into existing antiquated switchgear.

2. Upgrading Switchgear Only (no Generator Protection and Controls)

a. Inherit risk integrating new switchgear into existing antiquated generator protection and controls, if possible.

3. Installation of virtual protection relays

a. Feasibility and cost-effectiveness of installing virtual protection relays.

4. Upgrading Existing Switchgear (not replacing switchgear)

a. Feasibility and cost-effectiveness of retrofitting modern components into the existing switchgear framework, which could enhance performance and reliability.

b. Feasibility of this alternative as NYSEG will be required to replace all SF6 containing switchgear with new switchgear to reduce potential greenhouse gas emissions.

If NYSEG determines there is risk to personnel safety and operation of the facility in its current condition, NYSEG will suspend operation of the turbine-generator(s) until the required switchgear and generator protection upgrades can be implemented.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c. analogous cost estimated from similar projects,

d. appropriate project support costs,

e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028            | 2029            | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|-----------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 222          | \$ -        | \$ -        | \$ 21         | \$ 43           | \$ 66           | \$ 93         | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 1,965        | \$ -        | \$ -        | \$ 240        | \$ 270          | \$ 1,350        | \$ 105        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 234          | \$ -        | \$ -        | \$ 29         | \$ 32           | \$ 161          | \$ 12         | \$ -        |
| # Internal, Overheads  | \$ 257          | \$ -        | \$ -        | \$ 18         | \$ 78           | \$ 152          | \$ 8          | \$ -        |
| # Materials            | \$ 1,500        | \$ -        | \$ -        | \$ -          | \$ 750          | \$ 750          | \$ -          | \$ -        |
| # Overheads - External | \$ 286          | \$ -        | \$ -        | \$ 24         | \$ 77           | \$ 175          | \$ 10         | \$ -        |
| <b>Total</b>           | <b>\$ 4,464</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 332</b> | <b>\$ 1,250</b> | <b>\$ 2,653</b> | <b>\$ 228</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## High Falls Draft Tube Stop Logs and Gantry Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>UJ-N5025-NYSEG-EG       | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

The NYSEG High Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 15.0 MW. The Project has a high hazard dam used to impound water for use in generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

High Falls hydroelectric facility was constructed circa 1948 to 1956. The powerhouse tailrace contains six (6) bays to discharge water, via a draft tube, from the three (3) turbine-generating units into the powerhouse tailrace. Water discharged from the powerhouse tailrace flows back into the Saranac River. There are currently only provisions in each of the bay piers to allow for installation of draft tube stop logs. Stops logs (or gates) are used to isolate each turbine-generating draft-tube. Dewatering of the draft-tube, after installation of the stop gates, allows for inspection and maintenance of the powerhouse underwater structure and provides a safe isolated work area for personnel working on a turbine-generating unit. The facility presently does not have draft tube stop logs or a gantry / lifting system to install and remove stop log gates.

#### Project Scope:

The High Falls Draft Tube Stop Logs and Gantry Project is comprised of the following activities:

- Detailed inspection and assessment of High Falls draft tubes, underwater powerhouse structure, and existing bay piers.
- Conceptual and detailed design of concrete powerhouse foundation and bay pier upgrades, steel structures and electrical infrastructure that will facilitate ease of accessibility and safe handling of stop logs during installation, removal, storage and for maintenance purposes,
- Fabrication of six (6) new stop logs to isolate each turbine-generator draft tube,
- Fabrication of steel structure(s) to support removal, installation, and storage of stop logs, including any required access platforms for required maintenance,
- Concrete upgrades to extend the life of the powerhouse underwater structure, bay piers and installation of steel structures, and associated electrical upgrades to facilitate safe installation, removal, and maintenance of stop logs when turbine-generators are in service.

#### Project Benefits:

High Falls Draft Tube Stop Logs and Gantry Project is a project to design, fabricate, and install stop logs, associated steel structures, concrete upgrades and electrical infrastructure that will facilitate safe and quick isolation of each turbine-generator draft tube during a flood event and/or turbine-generator outage without having to mobilize a crane. Isolation of each turbine-generator draft tube, through installation of stop logs, during unit and/or plant outages will allow for dewatering of the draft tube and facilitate safe access of personnel to enter to perform inspection and maintenance. When turbine-generators are in service, the intake stop log gantry will allow for storage and maintenance of the stop logs. The implementation of concrete upgrades will extend the service life of the draft tube by approximately 40 to 50 years.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability.

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with vendor(s) availability / interest to guide in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Unknown and unforeseen existing damage / condition to existing draft tube bay piers, including existing stop log guides located in the bay piers, and powerhouse underwater structure.

a.NYSEG to perform detailed condition assessment, bathymetric survey, and dive inspection of existing powerhouse tailrace and underwater structures prior to going to bid to mitigate and reduce risk.

2.Working in / around the Saranac River during construction

a.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in the river.

3.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials in advance of during design to identify need for abatement during construction.

### **Risk of No Action:**

#### **Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

Without currently being able to isolate and dewater the three turbine draft tubes at High Falls, NYSEG is unable to inspect and perform the necessary inspections and maintenance to identify required upgrades to extend the life of the powerhouse structure and turbine-generating units. NYSEG has separately identified a project to replace and upgrade the turbine-generating unit draft tubes that were previously identified during a dive inspection. If no action is taken to implement the Draft Tube Stop Logs and Gantry Project to isolate the draft tubes, it could potentially result in the following consequences including but not limited to:

1.Potential and/or further damage to the High Falls powerhouse underwater structure.

2.Forced outage of a turbine-generating unit(s).

3.NYSEG being unable to comply with FERC Hydropower Operating License.

4.NYSEG being unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

If NYSEG determines there is risk to personnel safety, operation of the turbine-generating units, and powerhouse underwater structure in its current condition, NYSEG will suspend operation of the turbine-generator(s) as an alternative to implementing the required upgrades.

NYSEG to assess and evaluate the following project alternative(s) / scope:

a.Requires mobilization of large crane, equipment that is typically not readily available, as required, for installation of stop logs on site.

i. Potential increase in personnel / equipment risk.

b. Stop logs required to be stored on site that allow for other activities to occur in and around the powerhouse.

c. Increased safety risk to personnel (above and below waterline) when required to isolate draft tube if required during winter months.

2. Installation of rolling gantry structure vs hoist for each of the six (6) stoplogs.

a. NYSEG to assess best option for personnel safety and most cost-effective alternative to improve operational reliability.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (management, materials, internal / external engineering, permitting, and construction costs, etc.), and company overheads.

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities.

b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available).

c.analogous cost estimated from similar projects within Avangrid.

d. appropriate project support costs.

e. applicable overheads and allocations

3. Project estimates are routinely reviewed according to Avangrid Networks Quality Management System, updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## High Falls U1 T-G Major Rebuild

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>UJ-N5057-NYSEG-EG       | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>H1 2028          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG High Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 15.0 MW. The Project has a high hazard dam used to impound water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

High Falls Unit 1 turbine-generator was originally installed circa 1948, has a rated capacity of 4.0 MW, and a new turbine was installed in 2002. The purpose of High Falls Unit 1 Turbine-Generator Major Rebuild Project is to address excessive bearing, journal, and sealing surface wear, etc. along with upgrading internal turbine components that are at end-of-life due to years of service. Rebuild of Unit 1 turbine-generator will extend the operational life of the turbine-generating unit by approximately 25 to 35 years, improve operational performance, efficiency and reliability. Rebuild of Unit 1 turbine-generating unit is necessary to support New York State's Clean Energy Goals and initiatives.

#### Project Scope:

High Falls Unit 1 Turbine-Generator Major Rebuild involves the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly.
- Inspection and measurement of all turbine (critical) clearances and components during and after disassembly.
- Testing of generator field, stator, and exciter
- Upgrading of turbine assembly components, as deemed necessary, such as bottom ring, wicket gates, wicket gate bushings and sealing surfaces.
- In-place machining of embedded components.
- Installation of new bearing journals and rebabbitting of bearings.
- Design, manufacture and installation of new upgraded thrust bearing assembly.
- Installation of new vibration monitoring system
- Reassembly and alignment of turbine-generator with new mechanical seal
- Commission turbine-generator and return to service.

#### Project Benefits:

High Falls Unit 1 Turbine-Generator Major Rebuild Project will restore reliable operation and extend the operational life of the 4.0 MW turbine-generating unit by approximately 25 to 35 years. Rebuild of Unit 1 turbine-generator is necessary to support New York State's Clean Energy Goals and initiatives.



**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown damage / condition to existing turbine-generating components

a.NYSEG to perform detailed condition assessment of existing components where possible, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Inadequate crane capacity for turbine-generator components

a.NYSEG to review historical drawings to document existing weights of critical turbine components and compare against existing crane capacities to mitigate / reduce risk.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of the turbine-generating unit, it could potentially result in the following consequences including but not limited to:

1.Potential or increased damage to turbine-generator components, auxiliary systems, etc. and increased risk of injury to personnel.

2.Forced outage of turbine-generating unit (and other associated equipment)

3.NYSEG being unable to comply with FERC Hydropower Operating License.

4.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Turbine Component Replacement / Upgrade

a.NYSEG to assess if targeted components (i.e. runner, generator field, and/or bearings) should be upgraded as an alternative to the turbine major rebuild.

2.Mechanical / Auxiliary System Upgrades

a.NYSEG to assess if existing mechanical / auxiliary system components (i.e. cooling water system, governor, etc.) necessary for operation of the turbine-generating unit requires upgrades and should be included in project base scope.

3.Fabrication / supply of new runner

a.NYSEG to assess option to fabricate and install a new turbine runner to improve and increase generating capacity instead of rehabilitating the existing turbine runner.

If NYSEG determines there is risk to personnel safety and operation of the turbine-generating unit in its current condition, NYSEG will suspend operation of the turbine-generator as an alternative to implementing the required upgrades.

Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Kents Falls Unit 1 Generator Rewind Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-0802-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

NYSEG Kents Falls Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 13.68 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

During testing of Unit 1 generator in 2022, NYSEG determined the generator field was unfit for service and has remained out of service. Unit 1 generator has a capacity of 3.84 MW and was installed circa 1928. Based on the ground identified in the generator field, NYSEG has identified the need to rewind the generator field.

#### Project Scope:

Kent Falls Unit 1 Generator Rewind Project is comprised of the following activities:

- Personnel, equipment, and material to disassemble the generator assembly.
- Generator specialist to remove generator field poles.
- Rewind generator field poles.
- Reinstall generator field into stator along with associated generator structures and bearings after rewind is complete.
- Realign generator assembly with turbine and recouple.
- Commission turbine-generator and return to service.

#### Project Benefits:

Kents Falls Unit 1 Generator Rewind Project involves rewinding of the generator field due to its current state (faulted). Upon completion, 3.84 MW of capacity will be returned to service and will have its service life extended by approximately 25 to 35 years. Rewind of the generator field, and returning the turbine-generator to service, supports New York State's Clean Energy Goals and initiatives.

#### Project Risks and Mitigation Plan:

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

Common Project Risks:

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

Project Unique Risks:

1.Unknown damage / condition to existing generator components

a.NYSEG to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Inadequate crane capacity for generator components

a.NYSEG to review historical drawings to document existing weights of critical generator components and compare against existing crane capacities to mitigate / reduce risk.

**Risk of No Action:**

Common Risk of No Action:

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

With Unit 1 generator field presently faulted / grounded, the following would occur if no action were taken to rewind:

1. NYSEG being unable to comply with FERC Hydropower Operating License.
2. NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1. Mechanical / Auxiliary System Upgrades

a. NYSEG to assess if existing mechanical / auxiliary system components (bearings, governor(s), etc.) require upgrades and should be included in project base scope.

2. Fabrication / supply of new generator field

a. NYSEG to assess option to fabricate / supply new generator field instead of rehabilitating existing field.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c. analogous cost estimated from similar projects,

d. appropriate project support costs,

e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 319          | \$ -        | \$ -        | \$ 26         | \$ 53           | \$ 239        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 2,696        | \$ -        | \$ -        | \$ 310        | \$ 2,236        | \$ 150        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 180          | \$ -        | \$ -        | \$ 60         | \$ 120          | \$ -          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 182          | \$ -        | \$ -        | \$ 26         | \$ 147          | \$ 9          | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 219          | \$ -        | \$ -        | \$ 37         | \$ 172          | \$ 9          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,595</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 459</b> | <b>\$ 2,728</b> | <b>\$ 408</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Mill C Switchgear and Generator Protection

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-3266-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2029          | <b>In-Service Date:</b><br>H2 2032 |

#### Project description:

NYSEG Mill C Hydroelectric Project (FERC Project No. P-2738), is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 6.05 MW. The Project has a significant hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Mill C hydroelectric facility was constructed circa 1922 (Unit 1 and Unit 2 turbine-generator) with Unit 3 turbine-generator constructed in 1984. Replacement parts and components for the Original Equipment Manufacturer (OEM) switchgear and generator protection systems are difficult to locate or obsolete requiring procurement of refurbished components or after-market parts to restore the turbine-generator(s) to service.

The purpose of Mill C Switchgear and Generator Protection Upgrade Project is to upgrade the current switchgear and generator protection hardware to meet current arc flash requirements for the protection of personnel, state-of-the-art hardware and technology that brings the facility in-line with current standards resulting in increased personnel safety, operational reliability and availability of parts for future maintenance.

#### Project Scope:

Mill C Switchgear and Generator Protection Upgrade Project involves the following activities:

- Review and updating of the existing switchgear and generator protection system drawings.
- Identify new switchgear and generator protection systems that comply with current industry standards / state-of-the-art technology that allow for standardizing switchgear and generator protection systems across NYSEG's hydroelectric generation fleet, where applicable.
- Detailed design of required modifications to implement the new switchgear and necessary upgrades to generator protection hardware and software.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and install new switchgear and generator protection hardware, software and cabinetry.

#### Project Benefits:

Mill C Switchgear and Generator Protection Upgrade Project involves installation of new switchgear and generator protection hardware and software due to difficulty with locating OEM components that are obsolete or at end-of-life. Upgrade of the switchgear and generator protection system will extend the operational life and reliability of the hydroelectric generating facility and continue NYSEG's production of clean renewable energy, which supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2)

Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting samples / testing for regulated building materials during design to identify need for abatement during construction.

2.Issues during Commissioning

a.Due to the complexity involved of integrating new switchgear and generator protection equipment into the existing facility protection and control systems, NYSEG to develop detailed commissioning plan during design and onboard Commissioning Engineer familiar with hydroelectric facilities.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of failure with the current switchgear and / or generator protection hardware, including the inability to locate aftermarket components, it could potentially result in the following consequences including but not limited to:

1.Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage of turbine-generating unit (and other associated equipment)

3.NYSEG being unable to comply with FERC Hydropower Operating License.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Upgrading Generator Protection and Controls only

a.Inherit risk integrating generator protection and controls upgrades into existing antiquated switchgear.

2.Upgrading Switchgear Only (no Generator Protection and Controls)

a.Inherit risk integrating new switchgear into existing antiquated generator protection and controls, if possible.

3.Installation of virtual protection relays

a.Feasibility and cost-effectiveness of installing virtual protection relays.

4.Upgrading Existing Switchgear (not replacing switchgear)

a.Feasibility and cost-effectiveness of retrofitting modern components into the existing switchgear framework, which could enhance performance and reliability.

b.Feasibility of this alternative as NYSEG will be required to replace all SF6 containing switchgear with new switchgear to reduce potential greenhouse gas emissions.

If NYSEG determines there is risk to personnel safety and operation of the facility in its current condition, NYSEG will suspend operation of the turbine-generator(s) until the required switchgear and generator protection upgrades can be implemented.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

5. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029          | 2030            | 2031            |
|------------------------|-----------------|-------------|-------------|-------------|-------------|---------------|-----------------|-----------------|
| # AFUDC                | \$ 130          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 21         | \$ 43           | \$ 66           |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -            |
| # External Services    | \$ 1,860        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 240        | \$ 270          | \$ 1,350        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -            |
| # Internal, Labor      | \$ 180          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 60         | \$ 60           | \$ 60           |
| # Internal, Overheads  | \$ 295          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 19         | \$ 86           | \$ 190          |
| # Materials            | \$ 1,500        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ 750          | \$ 750          |
| # Overheads - External | \$ 317          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 30         | \$ 89           | \$ 198          |
| <b>Total</b>           | <b>\$ 4,282</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 370</b> | <b>\$ 1,298</b> | <b>\$ 2,615</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Rainbow Falls Low Level Floodgate Upgrades & Downstream Abutment Resurfacing Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-001123              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

NYSEG Rainbow Falls Hydroelectric Project (FERC Project No. P-2835) is located on the Ausable River in the Town of Keeseville, New York. The facility is unstaffed, with two (2) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 2.64 MW. The Project has a significant hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Rainbow Falls Dam Low Level Floodgate and Downstream Abutment Resurfacing Project is a dam safety project to the upgrade of the existing low-level dam flood gate valve, installation of a motor operator on the new flood gate valve, and resurfacing of the floodgate discharge portal and downstream side of the dams left abutment. The existing low-level dam flood gate valve is original to the dam (circa 1926) and is difficult to manually operate when opening and closing the floodgate. There is also increased risk to personnel operating the valve due to the exposed gears. The concrete on the downstream side of the dam left abutment is severely degraded / deteriorated and is at end of life.

#### Project Scope:

Rainbow Falls Dam Low Level Floodgate and Downstream Abutment Resurfacing Project is comprised of the following activities:

- Analysis of the existing flood gate and opening to determine and specify the new valve size and style required to pass required river flows,
- Identification and specification of new motor operated valve assembly consistent with other NYSEG hydroelectric facilities for standardization purposes,

- Conceptual and detailed design for removal and installation of new floodgate valve, valve operator, and reinforced concrete structure, as needed.

Design to include all power and control upgrades to operate floodgates locally and remotely. Design to also include concrete resurfacing of the entire downstream left abutment face,

- Procurement of contractor services, equipment, and material to implement the detailed design.

#### Project Benefits:

Rainbow Falls Dam Low Level Floodgate Upgrade and Downstream Abutment Resurfacing Project is a dam safety project that will upgrade and automate the existing low-level floodgate on the dam and resurface the downstream left abutment face. Upon completion of the project, the new motor operated low-level floodgate valve will improve valve opening and closing response time while reducing the potential for personnel injury based on current (manual) means to open and close. The project will extend the life of the dam structure by approximately 40 to 50 years, improve operational safety of the dam and continue NYSEG's on-going responsibility and FERC's requirement for safe operation and maintenance of the significant hazard dam and hydroelectric facility.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks**

1.Unknown damage / condition of the existing low-level floodgate and associated portal

a.NYSEG to perform detailed condition assessment of the low-level gate and portal, bathymetric survey of the riverbed upstream of the dam, and detailed inspection of the existing downstream left abutment face prior to design and bid to mitigate / reduce risk.

2.Using existing upstream leaking stopgate as cofferdam during construction

a.NYSEG to assess potential of reinforcing or replacing the existing upstream stopgate to prevent leakage during construction.

3.Working in / around the Ausable River during construction

a.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Ausable River.

b.NYSEG to closely monitor river flows and follow river communications protocol during construction.

c.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure with the existing floodgate, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam resulting in NYSEG activating the Emergency Action Plan .

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public for recreational use of the Ausable River downstream of the dam.

4.Forced outage of turbine-generating units (and other associated equipment) due to NYSEG being unable to impound water for generation of renewable energy.

5.NYSEG being unable to comply with FERC Hydropower Operating License.

6.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG has assessed and evaluated the following project alternatives / scope:

1.Installing floodgates with remote monitoring and operability

a.Increased safety risk to public if gates operate with people downstream of the dam and using the Ausable River for recreation.

2.Addition of concrete apron / wall downstream of the floodgate to better protect against erosion and / or improve access to the downstream side of the left abutment toe.

3.Installation of stair(s) / ladder(s) / platform(s) to improve access to the downstream side to left abutment toe.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029            | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 263          | \$ -        | \$ -        | \$ 25         | \$ 49         | \$ 71           | \$ 118        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 2,445        | \$ -        | \$ -        | \$ 285        | \$ 250        | \$ 1,780        | \$ 130        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 300          | \$ -        | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 60         | \$ -        |
| # Internal, Overheads  | \$ 213          | \$ -        | \$ -        | \$ 24         | \$ 20         | \$ 156          | \$ 14         | \$ -        |
| # Materials            | \$ 500          | \$ -        | \$ -        | \$ -          | \$ -          | \$ 500          | \$ -          | \$ -        |
| # Overheads - External | \$ 265          | \$ -        | \$ -        | \$ 35         | \$ 31         | \$ 175          | \$ 25         | \$ -        |
| <b>Total</b>           | <b>\$ 3,987</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 429</b> | <b>\$ 410</b> | <b>\$ 2,801</b> | <b>\$ 347</b> | <b>\$ -</b> |

[illegible]

## Roof Upgrades (Cadyville, Rainbow Falls)

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-004501              | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

NYSEG Cadyville Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed, with three (3) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 5.53 MW. The Project has a high hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

NYSEG Rainbow Falls Hydroelectric Project (FERC Project No. P-2835) is located on the Ausable River in the Town of Keeseville, New York. The facility is unstaffed, with two (2) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 2.64 MW. The Project has a significant hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Cadyville and Rainbow Falls hydroelectric facilities were constructed in the early-to-mid 1920's. The powerhouse that houses Cadyville Unit 3 turbine-generator was constructed circa 1986. Facility roofing systems are showing signs of excess wear/degradation caused by many years of exposure to the elements. NYSEG has identified a need to perform full tear-off and replacement of the roofing systems of Unit 3 powerhouse at Cadyville and Rainbow Falls Rackhouse. Installation of new roofing systems is necessary to ensure the integrity of the facility infrastructure for the continued safe, efficient and reliable operation of these existing hydroelectric facilities. The ability to maintain a watertight structure is critical to structural integrity of the facilities, and personnel safety while working in and around the generating facilities.

#### Project Scope:

NYSEG Cadyville and Rainbow Falls Roof Upgrade Project is comprised of the following activities:

- Detailed inspection/investigation of existing conditions of Rainbow Falls Rackhouse and Cadyville Unit 3 Powerhouse roofing systems.
- Conceptual and detailed design of roof, including upgrades to scuppers, eaves, and / or framing/columns.
- Implementation of detailed designs to address roof upgrades on Cadyville Unit 3 Powerhouse and Rainbow Falls Rackhouse.

#### Project Benefits:

Installation of a new, upgraded roofing systems at Cadyville and Rainbow Falls hydroelectric facility will extend the life of the hydroelectric facility. Proactive measures to address these areas will reduce the potential for damage to the facility structure, turbine-generator and associated equipment during operation and allow for continued reliable generation of renewable energy in support of New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials during design to identify need for abatement during construction.

2.Stakeholder Requirements

a.Due to Rainbow Falls hydroelectric facility being registered as a historical site with New York State Historic Preservation Office (SHPO), NYSEG will work with SHPO during the design phase of the project to define roof design requirements and agree on acceptable new roof features for Rainbow Falls Rackhouse.

### **Risk of No Action:**

#### **Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

By neglecting to perform the required roof upgrades at Cadyville and Rainbow Falls hydroelectric facilities, NYSEG inherits additional risk of damage to the facility structure and equipment (turbine-generators, controls, auxiliary systems, etc.) inside each facility, which could require NYSEG to remove turbine-generating units from service and reducing available clean renewable energy capacity from New York State's renewable energy portfolio.

### **Project Alternatives:**

NYSEG to assess and evaluate the following alternatives:

1.Rainbow Falls Rackhouse Roof

a.Evaluate installation of new metal roofing system

i.Replace existing asphalt shingles that are at end-of-life and severely damaged by weather elements and birds.

b.Replace existing asphalt shingles with new, upgraded shingles, including eaves, vents, etc.

2.NYSEG Cadyville Unit 3 Turbine-Generator Powerhouse Roof

a.Upgrade existing end-of-life roof to one of the following roof systems:

i.PVC roofing

ii.Modified bitumen roofing.

iii.Asphalt roofing

iv.Tar and gravel

NYSEG currently plans to install a metal roof on Rainbow Falls Rackhouse and new Ethylene Propylene Diene Monomer (EPDM) with ballasts on Cadyville Unit 3 Turbine-Generator Powerhouse. NYSEG will assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Upper Mechanicville Generator Protection and Controls Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-003703              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

NYSEG Upper Mechanicville Hydroelectric Project (FERC Project No. P-2934) is located on the Hudson River in Saratoga and Rensselaer Counties, in the Town of Stillwater, NY. The facility is unstaffed with two turbine-generating units that are remotely monitored and controlled with a total rated capacity of 16.53 MW. The Project has a significant hazard dam that is owned by New York State Canal Corporation with pneumatic crest gates owned and operated by NYSEG. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

NYSEG Upper Mechanicville hydroelectric facility was built circa 1981. Over 40 years of operation of the facility, switchgear and generator protection systems and components, which are original to the facility, are starting to fail leading to reduced operational reliability. Original Equipment Manufacturer (OEM) switchgear and generator protection systems difficult to locate or obsolete, requiring procurement of refurbished components or after-market parts to restore the turbine-generating unit(s) to service.

The purpose of Upper Mechanicville Switchgear and Generator Protection Upgrade Project is to upgrade the current switchgear and generator protection and control hardware with state-of-the-art hardware and technology that brings the control system in-line with current standards resulting in increased operational reliability and availability of parts.

#### Project Scope:

Upper Mechanicville Switchgear and Generator Protection Upgrade Project involves the following activities:

- Review and updating of the existing switchgear and generator protection and control system drawings.
- Identifying current / state-of-the-art technology to replace, upgrade, and standardize the existing switchgear and generator protection and control systems.
- Detailed design of required modifications to implement the new switchgear and generator protection and control hardware.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and install new switchgear and generator protection, control hardware and cabinetry.

#### Project Benefits:

Upper Mechanicville Switchgear and Generator Protection and Control Upgrade Project involves the upgrade of the existing switchgear and generator protection and control systems for Unit 1 and Unit 2 turbine-generating units due to difficulty with locating OEM components that are obsolete or at end-of-life. Upgrade of the switchgear and generator protection and controls systems will extend the operational life and reliability of the hydroelectric generating facility and continue NYSEG's production of clean renewable energy, which supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting samples / testing for regulated building materials during design to identify need for abatement during construction.

2.Issues during Commissioning

a.Due to the complexity involved of integrating new switchgear and generator protection controls and equipment into the existing facility protection and controls, NYSEG to develop detailed commissioning plan during design and contract Commissioning Engineer familiar with hydroelectric facilities.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of the existing switchgear and generator protection and controls, including the inability to locate aftermarket components, it could potentially result in the following consequences including but not limited to:

1.Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage of turbine-generating units (and other associated equipment).

3.NYSEG being unable to maintain and monitor operational requirements and compliance with FERC Hydropower Operating License.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Upgrading Generator Protection and Controls Only

a.Inherit risk integrating generator protection and controls upgrades into existing antiquated switchgear.

2.Upgrading Switchgear Only (no Generator Protection and Controls)

a.Inherit risk integrating new switchgear into existing antiquated generator protection and controls, if possible.

3.Installation of virtual protection relays

a.NYSEG to assess feasibility and cost-effectiveness of installing virtual protection relays.

4.Upgrading Existing Switchgear (not replacing switchgear)

a.NYSEG to assess feasibility and cost-effectiveness of retrofitting modern components into the existing switchgear framework, which could enhance performance and reliability.

b.Feasibility of this alternative as NYSEG will be required to replace all SF6 containing switchgear with new switchgear to reduce potential greenhouse gas emissions.

If NYSEG determines there is risk to personnel safety and operation of the facility in its current condition, NYSEG will suspend operation of the turbine-generating unit(s) until the required switchgear and generator protection upgrades can be implemented.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.



Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Upper Mechanicville Plant Control System Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-005155              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

NYSEG Upper Mechanicville Hydroelectric Project (FERC Project No. P-2934), is located on the Hudson River in Saratoga and Rensselaer Counties, in the Town of Stillwater, NY. The facility is unstaffed with two turbine-generating units that are remotely monitored and controlled and are rated to produce a total of 16.53 MW. The Project has a significant hazard dam that is owned by New York State Canal Corporation with pneumatic crest gates owned and operated by NYSEG. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

NYSEG Upper Mechanicville hydroelectric facility was built circa 1981 to 1983. Over 40 years of operation of the facility, plant control systems and components, which are original to the facility are starting to fail leading to reduced operational reliability. Original Equipment Manufacturer (OEM) replacement components are obsolete or difficult to locate, requiring procurement of refurbished components or after-market parts to restore the turbine-generating unit(s) to service.

The purpose of the Upper Mechanicville Plant Control System Upgrade Project is to upgrade the current turbine and generator and facility control systems with state-of-the-art hardware and technology that brings the control systems in-line with current standards resulting in increased operational reliability and availability of parts.

#### Project Scope:

The Upper Mechanicville Plant Control System Upgrade Project involves:

- Review and updating of the existing turbine and generator protection and control system drawings and operating equipment / systems,
- Identifying current / state-of-the-art technology to replace, upgrade, and standardize the existing turbine and generator protection and control systems.
- Detailed design of required modifications to implement the new turbine and generator protection and control systems.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and install new turbine and generator protection, control system hardware and cabinetry.

#### Project Benefits:

Upper Mechanicville Control System Upgrade Project involves the updated of existing turbine-generator control and protection systems due to difficulty with locating OEM components that are obsolete or are at end-of-life. Upgrade of the turbine and generator, protection and control systems will extend the operational life and reliability of the hydroelectric generating facility and continue NYSEG's production of clean renewable energy, which supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest in advance of and/or to guide in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult transition into new Plant Logic Control (PLC) program

a.There is a risk of error in the transition and programming of logic and routines from the existing turbine and generator control systems to the new PLC hardware and software.

b.NYSEG to reduce risk by ensuring proper testing and operational checks for each PLC data point after migration to the new PLC hardware and software.

2.Issues during Commissioning

a.Due to the complexity involved of integrating new turbine and generator protection controls and equipment into the existing facility protection and controls, NYSEG to develop detailed commissioning plan during design and contract Commissioning Engineer familiar with hydroelectric facilities.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of the existing turbine-generator controls, including the inability to locate aftermarket components, it could potentially result in the following consequences including but not limited to:

1.Potential flooding of plant, including damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage of turbine-generating units (and other associated equipment)

3.NYSEG being unable to maintain and monitor operational requirements and compliance with FERC Hydropower Operating License.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.NYSEG plans to utilize a Contractor's software program to automatically transfer the existing logic of the existing PLC to the new PLC. If NYSEG is unable to execute a contract with the Contractor and utilize the software program, NYSEG will utilize design engineer(s) to manually re-write the control logic into the new PLC.

If NYSEG determines there is risk to personnel safety and operation of the facility(s) in its current condition, NYSEG will suspend operation of the turbine-generating unit(s) until the required plant control upgrades can be implemented.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|
| # AFUDC                | \$ 122          | \$ -        | \$ -        | \$ 17         | \$ 34         | \$ 70         | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 740          | \$ -        | \$ -        | \$ 185        | \$ 435        | \$ 120        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 180          | \$ -        | \$ -        | \$ 60         | \$ 60         | \$ 60         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 61           | \$ -        | \$ -        | \$ 17         | \$ 32         | \$ 12         | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 93           | \$ -        | \$ -        | \$ 28         | \$ 43         | \$ 22         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,196</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 308</b> | <b>\$ 604</b> | <b>\$ 284</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Upper Mechanicville Unit 1 Turbine-Generator Major Overhaul / Rebuild Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-4408-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG Upper Mechanicville Hydroelectric Project (FERC Project No. P-2934) is located on the Hudson River in Saratoga and Rensselaer Counties, in the Town of Stillwater, NY. The facility is unstaffed with two turbine-generating units that are remotely monitored and controlled with a total rated capacity of 16.53 MW. The Project has a significant hazard dam that is owned by New York State Canal Corporation with pneumatic crest gates owned and operated by NYSEG. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

A requirement of NYSEG's new 50-year hydropower operating license issued by the Federal Energy Regulatory Commission (FERC), effective on April 1, 2021, is for NYSEG to replace and upgrade the existing river water intake trashracks from 5.5-inch clear space opening to 0.75-inch clear space opening for protection of aquatic species, specifically American Eel. In addition, NYSEG is currently required to design and install a new structure to safely convey entrained aquatic species safely downstream of the facilities (river) water intake.

Since April 2021, NYSEG has assessed the technical, financial, and operational impacts to upgrade the existing intake trashracks from 5.5-inch clear space opening to 0.75-inch clear space opening and determined that the financial investment would not be cost-effective for NYSEG ratepayers.

NYSEG is collaborating with the Settlement Parties involved with relicensing of the facility and revisiting the reduction of intake trash rack spacing requirement. Since issuance of the new license to NYSEG in 2021, the means and methods to increase the survivability of American Eels has been expanded by federal and state agencies giving potentially more options to NYSEG to achieve federal and state survivability targets than reduction of intake trash rack spacing (5.5-inch to 0.75-inch).

#### Project Scope:

Upper Mechanicville Unit 1 Turbine-Generator Major Overhaul Project is comprised of the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly.
- Inspection and measurement of all turbine (critical) clearances and components during and after disassembly.
- Removal of existing Unit 1 runner
- Engineering, procurement, and fabrication of new Unit 1 fish-friendly runner
- Design and upgrade of turbine assembly components, as deemed necessary, such as bottom ring, wicket gates, wicket gate bushings and sealing surfaces
- Testing of generator field, stator, and exciter
- In-place machining of embedded components
- Installation of new bearing journals and rebabbiting of bearings
- Installation of new vibration monitoring system
- Reassembly and alignment of turbine-generator with new mechanical seal
- Commission turbine-generator and return to service

#### Project Benefits:

Upper Mechanicville Unit 1 Turbine-Generator Major Overhaul Project will address NYSEG's new FERC Hydropower operating license requirement to improve American eel survivability rates in the Hudson River watershed along with improving reliable operation, operational efficiency, and extending the life of the turbine-generating asset by approximately 40 years. Rebuild of Unit 1 turbine-generator is necessary to comply with NYSEG's new FERC Hydropower license and supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Issues during Commissioning

a.Due to the complexity involved of performing a turbine-generator major overhaul along with installation of new fish-friendly runner, NYSEG to develop a detailed commissioning plan during design and onboard a Commissioning Engineer familiar with commissioning of turbine-generators and hydroelectric facilities.

2.Unknown damage / condition to existing turbine components

a.NYSEG to perform detailed condition assessment of existing components, where possible including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

3.New Technology with Fish-Friendly Runner

a.The design of an 8.25 MW fish-friendly runner is a new technology to the hydroelectric industry with limited performance data. NYSEG plans to conduct hydraulic analysis / design of the new fish-friendly runner, conduct model scale testing (as needed), seek written acceptance by federal and state regulatory agencies, and perform effectiveness testing (if needed) upon project completion to verify the new runner meets operational performance and survivability targets.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of NYSEG's failure to comply with installation of a new fish-friendly runner on Unit 1 turbine-generator, it could result in the following consequences including but not limited to:

1.FERC Ordering NYSEG to install a fish-friendly runner due to NYSEG not complying with FERC license requirements.

2.FERC ordering NYSEG to ceasing operation of the 16.53MW hydroelectric generating facility resulting in an average annual loss of 80,000 MWh of clean renewable generation to New York State / NYSEG customers. Operation to cease until a new fish-friendly runner is installed.

If NYSEG does not comply with federal and state American eel survivability targets in the Hudson River watershed, as required in an anticipated modified Settlement Agreement, NYSEG will be required to retire and shutter Upper Mechanicville hydroelectric facility.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Install standard / non-fish-friendly runner and improve downstream fish / eel passage by other means, if allowed by federal and state agencies.

2.Retire and Shutter the Facility

a.If NYSEG determines installation of a fish-friendly runner is not cost effective to NYSEG ratepayers, NYSEG may be required to retire and shutter Upper Mechanicville hydroelectric facility.

If NYSEG determines there is risk to personnel safety and operation of the turbine-generating unit in its current condition, NYSEG will suspend operation as an alternative to implementing the required upgrades.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

5. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026          | 2027          | 2028            | 2029            | 2030            | 2031        |
|------------------------|------------------|-------------|---------------|---------------|-----------------|-----------------|-----------------|-------------|
| # AFUDC                | \$ 763           | \$ -        | \$ 42         | \$ 84         | \$ 112          | \$ 251          | \$ 274          | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -        |
| # External Services    | \$ 4,635         | \$ -        | \$ 475        | \$ 330        | \$ 1,720        | \$ 1,480        | \$ 630          | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -        |
| # Internal, Labor      | \$ 600           | \$ -        | \$ 120        | \$ 60         | \$ 240          | \$ 120          | \$ 60           | \$ -        |
| # Internal, Overheads  | \$ 897           | \$ -        | \$ 53         | \$ 27         | \$ 440          | \$ 331          | \$ 46           | \$ -        |
| # Materials            | \$ 7,000         | \$ -        | \$ -          | \$ -          | \$ 4,000        | \$ 3,000        | \$ -            | \$ -        |
| # Overheads - External | \$ 950           | \$ -        | \$ 81         | \$ 38         | \$ 446          | \$ 325          | \$ 59           | \$ -        |
| <b>Total</b>           | <b>\$ 14,845</b> | <b>\$ -</b> | <b>\$ 771</b> | <b>\$ 539</b> | <b>\$ 6,958</b> | <b>\$ 5,507</b> | <b>\$ 1,069</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Upper Mechanicville Unit 2 Generator Rewind

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>9301-4409-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2028          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG Upper Mechanicville Hydroelectric Project (FERC Project No. P-2934) is located on the Hudson River in Saratoga and Rensselaer Counties, in the Town of Stillwater, NY. The facility is unstaffed with two turbine-generating units that are remotely monitored and controlled with a total rated capacity of 16.53 MW. The Project has a significant hazard dam that is owned by New York State Canal Corporation with pneumatic crest gates owned and operated by NYSEG. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

During testing of Unit 2 generator in 2022, the generator field revealed a low Polarization index and low dielectric absorption. Unit 2 generator has a capacity of 8.265 MW and was installed circa 1983. Based on the testing completed on the generator field and based on the age of the generator, NYSEG has identified the need to rewind the generator field.

#### Project Scope:

Upper Mechanicville Unit 2 Generator Rewind Project is comprised of the following activities:

- Personnel, equipment, and material to disassemble and remove the generator field / assembly,
- Generator specialist to remove generator field poles,
- Rewind generator field poles,
- Reinstall generator field into stator along with associated generator structures and bearings after rewind is complete,
- Realign generator assembly with turbine and recouple,
- Commission turbine-generator and return to service.

#### Project Benefits:

Upper Mechanicville Unit 2 Generator Rewind Project involves rewinding of the generator field due to its current state. Upon completion, 8.265 MW of capacity will be returned to service and will have its service life extended by approximately 25 to 35 years. Rewind of the generator field and stator, and returning the turbine-generator to service, supports New York State's Clean Energy Goals and initiatives.



**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown damage / condition to existing generator components

a.NYSEG to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Inadequate crane capacity for generator components

a.NYSEG to review historical drawings to document existing weights of critical generator components and compare against existing crane capacities to mitigate / reduce risk.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure with the turbine-generating unit, it could potentially result in the following consequences including but not limited to:

1.Additional damage to equipment (turbine-generators, controls, auxiliary systems, etc) and increased risk of injury to personnel.

2.Forced outage of the turbine-generating unit (and other associated equipment)

3.NYSEG being unable to comply with FERC Hydropower Operating License.

4.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Mechanical / Auxiliary System Upgrades

a.NYSEG to assess if existing mechanical / auxiliary system components (bearings, governor(s), etc.) require upgrades and should be included in project base scope.

2.Fabrication / supply of new generator field

a.NYSEG to assess option to fabricate / supply new generator field instead of rehabilitating existing generator field.

If NYSEG determines there is risk to personnel safety and operation of the facility in its current condition, NYSEG will suspend operation of the turbine-generator(s) as an alternative to implementing the required upgrades.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

5. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028          | 2029          | 2030            | 2031          |
|------------------------|-----------------|-------------|-------------|-------------|---------------|---------------|-----------------|---------------|
| # AFUDC                | \$ 346          | \$ -        | \$ -        | \$ -        | \$ 26         | \$ 53         | \$ 77           | \$ 190        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          |
| # External Services    | \$ 4,595        | \$ -        | \$ -        | \$ -        | \$ 260        | \$ 280        | \$ 3,905        | \$ 150        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          |
| # Internal, Labor      | \$ 360          | \$ -        | \$ -        | \$ -        | \$ 120        | \$ 60         | \$ 120          | \$ 60         |
| # Internal, Overheads  | \$ 332          | \$ -        | \$ -        | \$ -        | \$ 26         | \$ 22         | \$ 266          | \$ 18         |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          |
| # Overheads - External | \$ 407          | \$ -        | \$ -        | \$ -        | \$ 46         | \$ 32         | \$ 297          | \$ 32         |
| <b>Total</b>           | <b>\$ 6,040</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 478</b> | <b>\$ 446</b> | <b>\$ 4,665</b> | <b>\$ 450</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Mill C Powerhouse A Crane Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-006444              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

NYSEG Mill C Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed with three hydropower turbine-generating units that are remotely monitored and controlled with a total facility capacity of 6.05 MW. The Project has a significant hazard dam used to impound water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate hydroelectric energy.

Mill C Powerhouse A was constructed circa 1922 and has the original overhead crane, which has been tagged out of service since 2021 after an inspection revealed the crane does not pass current inspection criteria for use. NYSEG performed an engineering analysis of the crane and building in 2022 and confirmed the crane and supporting structure does not meet current design standards. The overhead crane is required for maintenance of turbine-generating units located in Powerhouse A.

#### Project Scope:

The Mill C Powerhouse A Crane Upgrade Project involves the following activities:

- Review existing drawings associated with the Powerhouse A crane and building structure.
- Perform an analysis of the existing structure/crane (bridge, trolley, hoist, motor, etc.) and building structure to identify opportunities for upgrades.
- Detailed design of required modifications to implement an upgraded or new crane system, including upgraded controls and upgraded safety features.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and modify or install a new upgraded crane for long-term service and maintenance of the turbine-generating units.

#### Project Benefits:

NYSEG Mill C Powerhouse A Crane Upgrade Project involves the upgrade or installation of a new crane due to the existing crane not meeting or passing current inspection requirements. Upgrade or installation of a new crane will allow for continued long-term maintenance of the existing turbine-generators in Powerhouse A, leading to increased and long-term reliable operation of the facility. The project is needed to continue NYSEG's production of clean renewable energy in support of New York State's Clean Energy Goals and initiatives

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials during design to identify need for abatement during construction.

2.Heavy construction in and around existing penstock and turbine-generating units

a.NYSEG to mitigate risk by requesting detailed site-specific health and safety plans and work plans from Contractor(s) on site to ensure careful consideration is accounted for when upgrading the existing overhead crane or installing a new overhead crane.

b.NYSEG to employ an on-site Field Construction Manager during construction to oversee construction methods for strict adherence to the project work plan.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

If NYSEG does not upgrade or install a new overhead crane in Powerhouse A, NYSEG will be unable to maintain and service the existing turbine-generating units. Over time, NYSEG will be required to remove the turbine-generating units from service reducing available clean renewable energy capacity from New York State's renewable energy portfolio.

**Project Alternatives:**

NYSEG has assessed and evaluated the following project alternatives:

1.Replacing the existing overhead crane with a new, upgraded overhead crane supporting from the existing roof structure (steel trusses).

2.Installing new stand-alone gantry structure within Powerhouse A, with new reinforced concrete foundations within the building footprint.

NYSEG employed a design engineer to analyze the existing overhead roof structure to determine the available capacity for Alternative 1 (new overhead crane) and determined the existing building roof structure is not capable of supporting a new overhead crane without significant structural reinforcement.

NYSEG has elected Alternative #2 (free-standing crane) as base project scope but will further assess all project alternatives during project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Cadyville Low Level and Midlevel Gate Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG               | <b>Project ID:</b><br>PRJ-005519              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2028          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

NYSEG Cadyville Hydroelectric Project (FERC Project No. P-2738) is located on the Saranac River in Clinton County, west of Plattsburgh, NY. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 5.53 MW. The Project has a high hazard dam used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Cadyville dam was constructed circa 1921. The dam's right abutment has two (2) manually operated sluice bypass gates upstream of the dams mid-level and low-level outlets. During recent on-site inspections, it has been observed that the existing sluice gates leak and the existing operators are original to the dam's construction, difficult to operate and are no longer reliable.

The sluice bypass gates are used to convey river flows upstream of the dam into the river bypass reach located downstream of the dam during high river flows or when there is an electric disturbance at the Cadyville hydroelectric facility. In the event that the existing sluice bypass gates would not open during a high river-flow event, overtopping of the dam's right abutment cutoff wall could occur leading to material loss and damage to the penstock, which is adjacent to the dam and flood bypass gates. This dam safety project will address necessary upgrades to the water retaining structures sluice bypass gates and low-level outlet on the downstream side of the dam right abutment for continued safe operation of the high-hazard dam and penstock.

#### Project Scope:

Cadyville Low Level and Mid-Level Gate Upgrade Project is comprised of the following activities:

- Inspection of the right dam abutment (upstream and downstream),
- Design of new concrete extension on downstream side of dam right abutment for new low level, upward raising gates,
- Identification and specification of motor operated valve operators consistent with other NYSEG hydroelectric facilities for standardization purposes,
- Conceptual and detailed design for installation of new upstream sluice gate valves, valve operators, resurfacing of the upstream side of the right dam abutment, addition or installation of directional outflow provisions from existing mid-level and low-level outlet valves to protect against erosion to penstock, and
- Installation of stair(s), ladder(s), platform(s), etc. to improve access for low-level floodgate maintenance and to the dam abutment toe.
- Design to include all power and control upgrades to operate floodgates locally and remotely,
- Procurement of services, equipment, and material to implement the detailed designs.

#### Project Benefits:

Cadyville Dam Low Level and Mid Level Gate Upgrade Project is a dam safety project that will upgrade two original sluice gates located on the upstream side of the dam and install motor operated valve operators to improve opening and closing response time when placed into service. The project also involves resurfacing the upstream side of the dam's right abutment face along with the addition of a concrete extension and valve to the low-level outlet, located on the downstream side of the dam. Upgrades will reduce the potential for personnel injury when during operation of the valves and improve control of river flows and improve the dam's integrity. The project will extend the service life of the sluice gates by approximately 50 years and improve operation of the dam structure and continue NYSEG's responsibility and FERC's requirement for safe operation and maintenance of the high hazard dam and hydroelectric facility.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and NYSEG has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown condition to existing upstream face of dam's right abutment face

a.NYSEG to perform detailed condition assessment, bathymetric survey, and dive inspection of the dams existing right abutment prior to design and bid to mitigate and reduce risk.

2.Diverting flow around construction.

a.NYSEG to assess options to divert flow around construction area by use of the dam spillway and / or other means (siphon, flashboards, etc.).

3.Working in / around the Saranac River during construction

a.NYSEG to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.NYSEG to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in the river.

**Risk of No Action:****Common Risk of No Action:**

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure with the existing sluice gates, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam requiring activation of NYSEG's Emergency Action Plan.

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public in the bypass reach downstream of the dam.

4.Forced outage of turbine-generating units at Cadyville powerhouse (and other associated equipment) due to not being able to impound water for generation of renewable energy.

5.NYSEG being unable to comply with FERC Hydropower Operating License.

6.NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1.Installing new sluice gates and low-level floodgate with remote monitoring and operability

a.Increased safety risk to public if gates operate with people in the bypass reach downstream of the dam.

2.Repair existing Cadyville upstream low-level and midlevel sluice gates, including cleaning debris off the gates, greasing the operators and stems, and using dissolving agent to remove buildup between the gate slide and guide channels.

a.Requires a detailed inspection of the existing low level and mid-level gates to ensure the cast iron gates are not cracked and / or damaged, which would make this alternative not feasible.

b.This alternative does not address the control upgrades required at site to improve personnel safety and operational reliability of the gates.

3.Replace the existing manual cast iron gates with two (2) new stainless steel sluice gates operated with electric actuators.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028          | 2029          | 2030            | 2031          |
|------------------------|-----------------|-------------|-------------|-------------|---------------|---------------|-----------------|---------------|
| # AFUDC                | \$ 232          | \$ -        | \$ -        | \$ -        | \$ 20         | \$ 40         | \$ 60           | \$ 111        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          |
| # External Services    | \$ 2,281        | \$ -        | \$ -        | \$ -        | \$ 225        | \$ 220        | \$ 1,701        | \$ 135        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          |
| # Internal, Labor      | \$ 300          | \$ -        | \$ -        | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 60         |
| # Internal, Overheads  | \$ 201          | \$ -        | \$ -        | \$ -        | \$ 19         | \$ 18         | \$ 147          | \$ 17         |
| # Materials            | \$ 300          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          | \$ 300          | \$ -          |
| # Overheads - External | \$ 257          | \$ -        | \$ -        | \$ -        | \$ 29         | \$ 28         | \$ 169          | \$ 30         |
| <b>Total</b>           | <b>\$ 3,571</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 353</b> | <b>\$ 367</b> | <b>\$ 2,497</b> | <b>\$ 354</b> |

[illegible]



## Rainbow Falls Penstock Replacement

### PROJECT INFORMATION

|                                                           |                                               |                                                |                                        |                                       |
|-----------------------------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>9301-1761-1110-NY-EG    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Generation                       | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>12/31/2031       | <b>In-Service Date:</b><br>12/31/2031 |

#### Project description:

NYSEG Rainbow Falls Hydroelectric Project (FERC Project No. P-2835) is located on the Ausable River in the Town of Keeseville, New York. The facility is unstaffed, with two (2) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 2.64 MW. The Project has a significant hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Rainbow Falls hydroelectric facility was constructed circa 1926.

The two original steel lap-joint constructed penstocks convey river water from the rackhouse to the powerhouse, and associated turbine-generating unit, for use in generation of renewable energy.

Rainbow Falls Penstock Replacement Project is a project to install two new 6-ft diameter by 400-ft long penstocks, including new air admission valves and associated supporting thrust blocks. In June 2022, an independent consultant (IC) completed an inspection of the penstocks and determined the existing penstocks exhibit significant signs of surface rust and pitting. Additionally, ultrasonic thickness (UT) measurements taken determined the existing penstock's wall thickness does not meet the design required penstock wall thickness. The existing penstocks are at end of life, and require routine inspection and repair to address leaks.

NYSEG is required per FERC's Hydropower operating license to maintain public whitewater access through the Rainbow Falls Project site between late May and late October. The current penstocks are located in the general vicinity of the public recreational access. Implementation of the new penstock design will require dewatering of the water conveyance system, ceasing generation, and potentially limiting access to the public.

#### Project Scope:

Rainbow Falls Penstock Replacement Project is comprised of the following activities:

- Detailed analysis and survey of the existing penstocks including expansion joints, thrust blocks and interface with powerhouse.
- Conceptual and detailed design of two new 6-ft diameter by 400-ft long penstocks, penstock vent valves used in dewatering, and thrust block size and location.
- oDesign to include analysis of material for long-term safe operation and maintenance.
- oDesign to include all electrical and control requirements for operation of new penstocks.
- Procurement of contractor services, equipment and material to implement final design.

#### Project Benefits:

Rainbow Falls Penstock Replacement Project involves installation of two new 6-ft diameter by 400-ft long penstocks that will extend the life of the water conveyance system by a minimum of 50 years. Proactive measures to upgrade the penstocks and air admission valves will address the on-going repairs to address water leaks, reduce the potential for damage to the turbine-generators during operation, reduce the public safety risk, and allow for continued reliable operation of Rainbow Falls hydroelectric facility in support of New York State's Clean Energy Goals and initiatives.

#### Project Risks and Mitigation Plan:

Large Capital projects such as this contain many inherent risks and NYSEG has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

Common Project Risks:

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) Identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

Project Unique Risks

1.Penstock Fabrication Lead Times

a.NYSEG to initiate procurement of new penstocks prior to construction and installation. RFP to ensure penstocks arrive on site prior to General Contractor mobilization.

2.Unknown subsurface conditions

a.NYSEG to perform detailed subsurface investigations (borings, test pits, etc) to document existing conditions around existing penstocks for new penstock design.

3.Fit-up of new penstocks in existing Powerhouse

a.NYSEG to mitigate risk by requesting detailed site-specific health and safety plans and work plans from Contractor(s) to ensure careful consideration is accounted for when fitting up the new penstocks into the powerhouse or existing turbine isolation valves.

b.NYSEG to employ an on-site Field Construction Manager during construction to oversee construction methods for strict adherence to the project work plan.

**Risk of No Action:**

Common Risk of No Action:

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

In the event of a failure with the penstock, it could potentially result in the following consequences including but not limited to:

1. Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc) and risk of injury to personnel and public.
2. Uncontrolled release of flows around powerhouse and public access to Ausable River resulting in activation of NYSEG's Emergency Action Plan
3. Forced outage of turbine-generating units (and other associated equipment) due to NYSEG being unable to impound water for generation of renewable energy.
4. NYSEG being unable to comply with FERC Hydropower Operating License.
5. NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1. Adding Fiber Reinforced Polymer (FRP) lining to existing two (2) lap joint and riveted penstocks instead of replacing steel penstocks with new, upgraded steel penstocks.

a. NYSEG will require structural and hydraulic analysis of existing penstocks to determine feasibility of installing FRP liner.

b. Based on the existing penstock condition, this alternative is not recommended

2. Add reinforced concrete encasement to the two (2) existing penstocks.

a. Based on the existing penstock condition, this alternative is not recommended.

3. Adding protective coating to the inside and outside of the existing penstocks to extend the service life.

a. Based on the existing penstock condition, this alternative is not a long-term solution and is not recommended

4. Replacing the two (2) penstocks with one (1) larger steel penstock and one (1) bifurcation.

NYSEG currently plans to install two (2) new steel penstocks on site. NYSEG will perform hydraulic and structural analyses of the penstocks to determine the most cost-effective alternative.

NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c. analogous cost estimated from similar projects,

d. appropriate project support costs,

e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.



## Rainbow Falls Power Canal and Gatehouse Upgrade Project

### PROJECT INFORMATION

|                                                           |                                               |                                            |                                        |                                       |
|-----------------------------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>PRJ-001125              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Generation                       | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>1/1/2028         | <b>In-Service Date:</b><br>12/31/2031 |

#### Project description:

NYSEG Rainbow Falls Hydroelectric Project (FERC Project No. P-2835) is located on the Ausable River in the Town of Keeseville, New York. The facility is unstaffed, with two (2) turbine-generating units that are remotely monitored and controlled with a total rated capacity of 2.64 MW. The Project has a significant hazard dam used for impounding water for use in generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Rainbow Falls hydroelectric facility was constructed circa 1926.

NYSEG Rainbow Falls Power Canal and Gatehouse/ Upgrade Project is a project to upgrade and address the existing deteriorated concrete constructed power canal and culvert, upgrade and automate the existing power canal low level gate, gatehouse, and adjacent log sluice gate. The existing power canal low-level gate is manually operated and often freezes up during winter months and operation, which can restrict dewatering of the power canal, if necessary. The gatehouse above the power canal low-level gate is showing signs of wear and degradation caused by many years of exposure to the elements. NYSEG plans to replace the existing wooden gatehouse structure with a new steel enclosure for long-term service and to protect equipment and instrumentation necessary for operation of the low-level power canal gate.

#### Project Scope:

Rainbow Falls Power Canal and Gatehouse Upgrade Project is comprised of the following activities:

- Detailed inspection/investigation of existing conditions of the power canal, culvert, low-level gate, low-level gatehouse, and adjacent log sluice gate.
- Conceptual and detailed design of new low-level gate house, reinforced concrete upgrades to the power canal, upgrade and automated low-level gate, and updated log sluice gate.
- Analysis of the existing power canal low-level gate and opening to determine and specify the new valve size / style required to pass required flows,
- Identification and specification of new motor operated valve assembly consistent with other NYSEG hydroelectric facilities for standardization purposes,
- Conceptual and detailed design for removal and installation of new floodgate valve, valve operator(s), gate house, log sluice gate and reinforced concrete power canal structure(s), as needed. Design to include all electrical and control upgrades to operate low-level gate locally and remotely.
- Procurement of contractor services, equipment, and material to implement the detailed design.

#### Project Benefits:

Rainbow Falls Power Canal and Gatehouse Upgrade Project involves installation and upgrades to the power canal, low-level gate, adjacent log sluice gate, all of which will extend the life of the hydroelectric facility by approximately 40 to 50 years. Proactive measures to upgrade the power canal and low-level gate structures will address the aging infrastructure, reduce the potential for damage to the turbine-generators during operation, reduce the safety risk to the public (if failure were to occur), and allow for continued reliable operation of Rainbow Falls hydroelectric facility.

#### Project Risks and Mitigation Plan:

Large Capital projects such as this contain many inherent risks and NYSEG has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all NYSEG hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

Common Project Risks:

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) Identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

Project Unique Risks

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.NYSEG to mitigate risk by collecting building samples and testing for regulated building materials in advance of during design to identify need for abatement during construction.

2.Unknown damage / condition to existing low-level gates and associated gatehouse foundation

a.NYSEG to perform detailed condition assessment and inspection of existing site conditions prior to design and bid to mitigate and reduce risk.

3.Working in / around Ausable River during construction

a.NYSEG to close power canal intake gates and dewater for construction to minimize personnel risks. NYSEG to coordinate and seek approval from federal and state agencies (United States Fish and Wildlife Service, New York State Department of Environmental Conservation, etc.) as the power canal is also used to transfer aquatic species downstream of the powerhouse via a fish bypass system.

**Risk of No Action:**

Common Risk of No Action:

NYSEG hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." NYSEG is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

In the event of a failure with the existing power canal and/or low-level gate, it could potentially result in the following consequences including but not limited to:

1. Uncontrolled release of flows downstream of dam resulting in activation of NYSEG's Emergency Action Plan.
2. Negative impact to ecological systems.
3. Increased risk of injury to personnel and / or public for recreational use of the Ausable River downstream of the dam.
4. Forced outage of turbine-generating units (and other associated equipment) due to NYSEG being unable to impound water for generation of renewable energy.
5. NYSEG being unable to comply with FERC Hydropower Operating License.
6. NYSEG unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

NYSEG to assess and evaluate the following project alternative(s) / scope:

1. Replacement of existing gatehouse with new Pre-Engineered Metal Building or wood framed building.
  - a. NYSEG to perform analysis for most cost-effective option.
  2. Modification of existing power canal debris sluice gate to eliminate current vs of wooden stoplogs, and installation of new automated steel gate.
  3. Hydraulic analysis of auxiliary spillway adjacent to power canal, and associated modifications, if necessary, for use during high storm event.
- NYSEG to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.





# **RG&E Electric Hydro-Generation**

## RG&E Minor Capital Program

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                        |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-002800              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The RG&E Minor Capital Program implements minor capital projects each year to address both planned and emergent projects that typically have a per project cost of less than \$500,000.

The RG&E Minor Capital Program is in place to address multiple small capital investment projects, or as projects emerge, such as equipment upgrades needed to support generation of electricity, improve and maintain safe operation of the hydroelectric operating systems, as well as compliance upgrades (e.g. safety, regulatory, environmental) at RG&E hydroelectric generating facilities.

#### Project Scope:

RG&E's Hydroelectric Minor Capital Program is comprised of the following activities:

- Detailed inspection/investigation of existing conditions, as required.
- Conceptual and detailed design of required upgrades.
- Implementation of detailed designs to address required upgrades.

#### Project Benefits:

Projects are implemented to address a variety of electrical, mechanical, civil/structural, and compliance (i.e. safety, environmental, regulatory) requirements at RG&E hydroelectric generating facilities. Upon project completion, upgrades at the facilities improve and address stakeholder requirements along with supporting safe operations and generation of clean renewable energy in support of New York State's Clean Energy Goals and initiatives.



**Project Risks and Mitigation Plan:**

Minor Capital projects such as those projects identified under the RG&E Minor Capital Program contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Program / Minor Capital Project Unique Risks:**

1.Coordination with Large Major Capital Projects and Operations Activities

a.RG&E to collaborate schedule(s) of minor capital project(s) with major capital projects and Operations to ensure site activities do not interfere (i.e. turbine-generators must be operational to support major capital project and should not operate for minor capital project).

2.RG&E Minor Capital Projects are not subject to all Avangrid Networks Quality Management System (QMS)

a.RG&E to assess risk(s) on each minor capital project and develop mitigation plan(s) as required.

b.RG&E to implement QMS standards on minor capital projects as needed depending on project complexity.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower licensed issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

By neglecting to perform the required minor capital upgrades at the RG&E hydroelectric facilities, RG&E inherits additional risk of injury to personnel and / or public, and damage to the facility structure and equipment (turbine-generators, controls, auxiliary systems, etc) inside and around each facility, which could require RG&E to remove turbine-generating units from service and reduce available clean renewable energy capacity from New York State's renewable energy portfolio.

**Project Alternatives:**

RG&E to assess and evaluate the following criteria for minor capital projects to prioritize project implementation:

1.Customer Focus / Compliance Projects / Regulatory Mandated

2.Safety - Dam Safety / Personnel Safety

3.Reliability Projects

4.Asset Condition Projects

5.Strategic and Efficiency

After the program / project prioritization process, RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System (as required).

Project cost estimates are:

## 2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses, and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021          | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|-------------|---------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 298          | \$ -        | \$ 10         | \$ 81           | \$ 104          | \$ 102          |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 3,076        | \$ -        | \$ 493        | \$ 707          | \$ 790          | \$ 1,086        |  |  |
| # Internal - Non-AC    | \$ 0            | \$ -        | \$ -          | \$ 0            | \$ 0            | \$ 0            |  |  |
| # Internal, Labor      | \$ 743          | \$ -        | \$ 158        | \$ 259          | \$ 99           | \$ 227          |  |  |
| # Internal, Overheads  | \$ 366          | \$ -        | \$ 47         | \$ 78           | \$ 72           | \$ 170          |  |  |
| # Materials            | \$ 375          | \$ -        | \$ 5          | \$ 12           | \$ 141          | \$ 217          |  |  |
| # Overheads - External | \$ 1,133        | \$ -        | \$ 137        | \$ 274          | \$ 270          | \$ 453          |  |  |
| <b>Total</b>           | <b>\$ 5,991</b> | <b>\$ -</b> | <b>\$ 849</b> | <b>\$ 1,411</b> | <b>\$ 1,476</b> | <b>\$ 2,253</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 1,275         | \$ 159          | \$ 151          | \$ 182          | \$ 187          | \$ 193          | \$ 199          | \$ 205          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 7,174         | \$ 723          | \$ 841          | \$ 1,057        | \$ 1,088        | \$ 1,121        | \$ 1,155        | \$ 1,189        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 612           | \$ 73           | \$ 75           | \$ 88           | \$ 90           | \$ 93           | \$ 96           | \$ 99           |
| # Internal, Overheads  | \$ 320           | \$ 51           | \$ 47           | \$ 52           | \$ 47           | \$ 41           | \$ 40           | \$ 42           |
| # Materials            | \$ 50            | \$ 50           | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ 722           | \$ 106          | \$ 108          | \$ 120          | \$ 107          | \$ 94           | \$ 91           | \$ 96           |
| <b>Total</b>           | <b>\$ 10,153</b> | <b>\$ 1,161</b> | <b>\$ 1,222</b> | <b>\$ 1,498</b> | <b>\$ 1,520</b> | <b>\$ 1,542</b> | <b>\$ 1,580</b> | <b>\$ 1,631</b> |

[illegible]

## Hydro Generation Station 2 Modernization Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>UJ-R0044-RGE-EG         | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

RG&E Station 2 Hydroelectric Project (FERC Project No. P-2582) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with one turbine-generating unit that is remotely monitored and controlled with a rated capacity of 8.5 MW. The Project has a low hazard dam (Central Ave. Dam) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 2 was constructed circa 1960. Sections of the current 11-ft diameter steel penstock that fed the original Station 2 hydroelectric facility, constructed in early 1900's, were installed in the construction of the 1960 Station 2 hydroelectric facility. The 11-ft diameter penstock is at end-of-life and requires routine inspection and repairs to address cracking.

Starting circa 2006, RG&E reviewed historical river flow data and conducted a study to determine if there was available (water) capacity in the Genesee River to add a second turbine-generating unit at RG&E's Station 2 hydroelectric facility. The outcome of the data review and study concluded that installation of a second turbine-generating unit was possible. Circa 2009, FERC issued an Order to RG&E to modernize RG&E Station 2 hydroelectric facility for the addition of a second turbine-generating unit.

The purpose of Station 2 Modernization Project is to replace the existing 11-ft diameter penstock, which is at end of life, install a new 14-ft diameter bifurcated penstock that will improve reliable operation of Unit 1 turbine-generator, facilitate future expansion of the hydroelectric facility through the addition of a second turbine-generating unit, extend the life and operation of Unit 1 turbine-generating unit. The project also involves upgrade of the fish bypass conveyance system and installation of a new turbine isolation valve for Unit 1.

#### Project Scope:

Station 2 Modernization Project is comprised of the following activities:

- Detailed design and construction to:

- oRemove the existing 11-ft diameter penstock, which is at end of life, and associated structures

- oUpgrade existing fish bypass conveyance system to improve passage of aquatic species downstream of intake structure to comply with FERC License Amendment and federal and state agencies requirement.

- oIncrease size of penstock to 14-ft diameter and bifurcate to prepare Station 2 hydroelectric facility for future expansion (addition of 2nd generating unit)

- oProcurement and fabrication of 14-ft diameter bifurcated penstock

- oInstallation of new penstock, new Unit 1 turbine isolation valve, along with associated structures

#### Project Benefits:

Station 2 Modernization Project includes removal of the existing 11-ft diameter penstock, installation of a 14-ft diameter bi-furcated penstock, new Unit 1 turbine isolation and upgrade of the fish bypass conveyance system. As outlined in FERC's Station 2 License Amendment, Section E.30 and 44.N, upgrades to the existing fish bypass conveyance system are required and will be incorporated with installation of the new penstock to fulfill this requirement. Installation of a new penstock, turbine isolation valve and fish bypass conveyance system will extend the useful life of the hydroelectric facility, increase operational reliability, and supports New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Location of Station 2 Hydroelectric Facility

a.Station 2 hydroelectric facility is located in a historical area / district of Rochester. Required collaboration with federal, state and city agencies may reveal additional project requirements to allow and protect potential areas within the historical district.

b.Demolition of existing and installation of new infrastructure in historical area / district of Rochester.

c.Noise concerns to public (residential and commercial) during construction activities.

d.Limited space for staging of equipment and material around Station 2 Rackhouse required to support removal and installation of penstock

2.Unknown / limited geotechnical information

a.RG&E to conduct geotechnical survey of project boundary where possible

b.Station 2 hydroelectric facility built on circa late 1800's / early 1900's industrial site.

3.Penstock Fabrication Lead Times

a.RG&E to initiate procurement of new penstocks prior to construction and installation. RFP to ensure penstocks arrive on site prior to General Contractor mobilization.

4.Fit-up of new penstock in existing Powerhouse

a.RG&E to mitigate risk by requesting detailed site-specific health and safety plans and work plans from Contractor(s) to ensure careful consideration is accounted for when fitting up the new penstock to the powerhouse.

b.RG&E to employ an on-site Field Construction Manager during construction to oversee construction methods for strict adherence to the project work plan.

### **Risk of No Action:**

#### **Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

Station 2 hydroelectric facility is presently not generating clean renewable hydroelectric energy due to the current state of penstock. RG&E is not able to safely return the facility to service until a new penstock is installed.

Returning the turbine-generating unit to service with the penstock in its current state could potentially result in the following consequences including but not limited to:

1.Personnel and public safety issue due to integrity of penstock

2.Potential damage to turbine-generator components, auxiliary systems, etc.

3.RG&E to initiate Emergency Action Plan in the event of penstock breach

4.RG&E unable to comply with FERC Hydropower Operating License.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

**1.Repair of Penstock**

a.RG&E will continue to assess performing short-term repairs on the penstock.

b.RG&E's Engineer of Record has inspected the current penstock condition and advised RG&E that the facility should not be operated due to the penstock's current state.

**2.Relining of the current penstock**

a.RG&E has assessed relining of the current penstock to extend the life (short-term). Relining of steel penstocks with a fiberglass reinforced polymer (FRP) is relatively new technology therefore there is risk of implementing.

b.RG&E's Engineer of Record advised that a FRP is not a long-term solution with unknown information and records with the current penstock foundation design.

**3.Retirement of Station 2 Hydroelectric Facility**

a.RG&E to assess option to retire facility, which does not support New York State's Clean Energy Goals and initiatives.

Due to the condition of the penstock, personnel safety, public safety and protection of Station 2 hydroelectric facility, RG&E has removed the facility from service until installation of a new penstock and long-term solution is implemented.

**Basis for Project Estimates**

Project cost estimates are:

1.Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2.Based on multiple sources:

a.Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c.analogous cost estimated from similar projects,

d.appropriate project support costs,

e.applicable overheads and allocations.

3.Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|-----------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ 1,324        | \$ 276          | \$ 249        | \$ 213        | \$ 263        | \$ 323        |  |  |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ 1,930        | \$ 702          | \$ 282        | \$ 371        | \$ 264        | \$ 310        |  |  |
| # Internal - Non-AC    | \$ 0            | \$ 0            | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ 185          | \$ 50           | \$ 32         | \$ 35         | \$ 35         | \$ 32         |  |  |
| # Internal, Overheads  | \$ 119          | \$ 28           | \$ 16         | \$ 24         | \$ 19         | \$ 31         |  |  |
| # Materials            | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ 422          | \$ 102          | \$ 52         | \$ 87         | \$ 80         | \$ 101        |  |  |
| <b>Total</b>           | <b>\$ 3,979</b> | <b>\$ 1,157</b> | <b>\$ 631</b> | <b>\$ 730</b> | <b>\$ 663</b> | <b>\$ 798</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027             | 2028             | 2029             | 2030            | 2031        |
|------------------------|------------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|-------------|
| # AFUDC                | \$ 1,705         | \$ 59           | \$ 64           | \$ 306           | \$ 586           | \$ 690           | \$ -            | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -            | \$ -        |
| # External Services    | \$ 44,300        | \$ 1,125        | \$ 1,550        | \$ 9,100         | \$ 14,850        | \$ 16,500        | \$ 1,175        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -            | \$ -        |
| # Internal, Labor      | \$ 405           | \$ 75           | \$ 70           | \$ 70            | \$ 70            | \$ 70            | \$ 50           | \$ -        |
| # Internal, Overheads  | \$ 1,457         | \$ 57           | \$ 69           | \$ 346           | \$ 490           | \$ 461           | \$ 32           | \$ -        |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -             | \$ -             | \$ -             | \$ -            | \$ -        |
| # Overheads - External | \$ 3,539         | \$ 142          | \$ 176          | \$ 840           | \$ 1,184         | \$ 1,114         | \$ 82           | \$ -        |
| <b>Total</b>           | <b>\$ 51,406</b> | <b>\$ 1,458</b> | <b>\$ 1,930</b> | <b>\$ 10,662</b> | <b>\$ 17,181</b> | <b>\$ 18,835</b> | <b>\$ 1,340</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 2 Central Ave Dam Superstructure Modernization

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-3095-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 2 Hydroelectric Project (FERC Project No. P-2582) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with one turbine-generating unit that is remotely monitored and controlled with a rated capacity of 8.5 MW. The Project has a low hazard dam (Central Ave. Dam) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 2 Central Ave. Dam (CAD) is comprised of six 42-ft by 11-ft high cable and winch driven vertical steel gates that impounds water for use in generation of renewable energy at Station 2. Gate 1 is used to for supplying river water to Station 2, while Gates 2 through 6 provide aesthetic flows over High Falls, maintains the Genesee River elevation in compliance with RG&E's FERC Hydropower operating license, and is vital in preventing flooding of the City of Rochester during high flow events (all gates operating).

Recent detailed inspection of the gate sheaves, cable and hoist system identified sheaves used in raising and lowering each gate are at end of useful life. A review of the engineering inspection results identified that the current dam structural design and associated equipment used to raise and lower the gates do not meet current factor of safety margins.

The purpose of Station 2 Central Ave. Dam Structural Modernization Project is to upgrade and modernize Central Ave Dam gate operating systems and superstructure to meet current factor of safety margins and improve operational reliability.

#### Project Scope:

Station 2 Central Ave. Dam Superstructure Modernization Project is comprised of the following activities:

- Detailed inspection of Central Ave. dam superstructure to identify areas of the superstructure that require upgrading.
- Conceptual design to modernize gate lifting system, including superstructure.
- Specification of gate sheave and lifting means and mechanisms that meet current safety standards and margins,
- Identify electric and control operating requirements to safely isolate and operate each gate independently in extreme and varying weather and river flow conditions,
- Detailed design to modernize gate lifting and control system,
- Procurement of services, material, etc. to implement design.

#### Project Benefits:

Station 2 Central Ave. Dam Superstructure Modernization Project will bring the dam's hoist and wire rope factor of safety in accordance with the United States Army of Corps of Engineers Engineering Manuals for dam operating equipment. The project will also improve safety of personnel performing maintenance and inspection activities by improving lighting, guardrails, and gate access. In addition, upgrades to the dam superstructure, including electric and control systems upgrades, will result in improved operational reliability of the dam while maintaining public safety, which is a regulatory obligation and requirement under RG&E's FERC Hydropower operating license.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Difficult Site Access for Construction

a.Contractors(s) to transport materials onto Central Avenue Dam for construction by crane from the New York State Inner Loop bridge, crane on a barge in the Genesee River directly upstream of High Falls, or from the parking lot at RG&E's Front Street property.

b.Contractors required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) at site during construction.

c.RG&E to perform constructability review during design.

2.Diverting Genesee River flow around construction.

a.RG&E to assess options to divert bypass river flow around construction area(s), as required.

3.Working in / around the Genesee River during construction

a.RG&E to assess need for cofferdam(s) to dewater construction work area to minimize construction risk(s).

b.RG&E to ensure development and adherence to site-specific health and safety plans to mitigate risk of working over or in the Genesee River during construction.

4.Working in close proximity to existing New York State Inner Loop bridge and roadway

a.RG&E to maintain clearances from existing Inner Loop bridge abutments / foundations.

b.RG&E to seek required permit(s) when working from existing Inner Loop bridge including, but not limited to right-of-way permits and lane closures (as required).

5.Crane Placement – Site Access Constraints

a.All crane vendor(s) to develop Critical Lift Plan(s) and include crane specifications, crane pick distances, lift weights, subsurface bearing conditions, etc.

6.RG&E to assess Genesee River flow capacity restrictions in advance of construction and develop mitigation plans to pass 100-year flood river flows.

### **Risk of No Action:**

#### **Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

In the event of a failure of an existing gate, multiple gates or portions / all of RG&E Station 2 Central Ave. Dam superstructure, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of river flows outside of RG&E's Station 2 FERC Project boundary, and potentially flooding into the City of Rochester, resulting in activation of RG&E's Emergency Action Plan.

2.Coordination with City of Rochester over upgrades to Central Ave. dam piers, which are owned by the City of Rochester.

3.Negative impact to ecological systems.

4.Increased risk of injury to personnel and / or public using New York State Inner Loop Bridge over Genesee River for day-to-day activities.

5.Forced outage of Station 2 turbine-generating unit (and other associated equipment) due to not being able to impound water for generation of renewable energy.

6.RG&E being unable to comply with FERC Hydropower Operating License.

7.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.



RG&E to assess and evaluate the following project alternative(s) / scope:

2. Remove existing gates and re-coat to extend the gate life. Install new gate seals.

RG&E will perform a detailed inspection and structural analysis of the existing superstructure to determine the most cost-effective alternative, including consideration of viable construction methods. RG&E currently plans to replace / upgrade the entire Central Ave. dam superstructure, including gate lifting and operating mechanisms.

## Basis for Project Estimates

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

c.analogous cost estimated from similar projects,

d. appropriate project support costs,

e. applicable overheads and allocations.

Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |

## Station 5 Gate 3 Rubplate, Rubplate and Breastwall Seal Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-3104-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 5 Gate 3 is located at Station 5 Headgates and is one of five gates (~100-ft long by 17-ft high) used to impound river water that is used in generation of renewable energy. The purpose of the rub plate, rubplate and upstream breast wall seals is to contain (and seal) water within the Gate 3 structure, which is necessary for safe operation and control of the gate during operation. The rub plate seals seal against the rub plates that are embedded are integral to the concrete piers of the dam.

The purpose of Station 5 Gate 3 Rubplate, Rubplate and Breastwall Seal Upgrade Project is to install new stainless steel rubplates, associated gate seals along with installation of a new breastwall seal to reduce water leakage into and out of the gate. The existing steel rubplates, which were constructed and installed circa 1917, along with the rubplate and breastwall seals, installed circa 1975, are at end-of-life. Failure of the seals could result in RG&E not maintaining impoundment elevations required of RG&E's operating license with the FERC and reduction in loss of electric generation.

#### Project Scope:

Gate 3 Rubplate, Rubplate and Breastwall Seal Upgrade Project is comprised of the following activities:

- Design and fabrication of two new stainless steel rubplates.
- Procurement of new rub plate seals and 100-ft long breastwall seal
- Installation of ~100-ft long temporary cofferdam to isolate Gate 3 for removal and installation of new gate seal components and accessories.
- Removal of the existing original steel rubplates integral to the concrete piers of the dam.
- Removal of and upgrading of the existing gate rubplate seals.
- Removal of and upgrading of the existing upstream breastwall seal,
- Personnel, equipment, and material for installation of new rubplate, rubplate seals and upstream breastwall seal,
- Upgrade to Gate 3 interior steel truss members that require reinforcement(s) based on engineering analysis,
- Improvements to the Gate 3 dogging devices used to mechanically hold the gate to facilitate inspection and maintenance,
- Removal of the cofferdam upon completion and recommissioning of the gate prior to returning to service

#### Project Benefits:

With the existing rubplates, rubplate seals and upstream breastwall seal at end of life with water leakage into and from the Gate 3 when in service, Station 5 Gate 3 Rubplate, Rubplate and Breastwall Seal Upgrade Project will involve the installation of new rubplates, rubplate and breastwall seals, steel truss / structural reinforcement of the gate along with upgrades to the Gate 3 dogging devices that is necessary for improved operational reliability and safety. Implementation of the upgrade will allow RG&E to maintain operational compliance with RG&E's FERC Hydropower operating license allowing RG&E to continue generating renewable energy in support of New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Multiple Projects Occurring Simultaneously at Station 5 Headgates

a.RG&E to mitigate risk by setting up recurring coordination calls between all stakeholders (project managers, engineers, Hydro Operations, contractors) to ensure coordination between projects.

2.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.RG&E to mitigate risk by collecting building samples and testing for regulated building materials in advance of or during design to identify need for abatement during construction.

3.Difficult Site Access for Construction

a.Contractor(s) to transport materials onto spillway for construction by crane.

b.Contractor required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) at site during construction.

c.RG&E to perform constructability review during design.

4.Working in / around Genesee River during construction

a.RG&E to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Genesee River.

b.RG&E to closely monitor river flows and follow river communications protocol during construction.

5.Working in close proximity to existing public access bridge

a.RG&E to assess need to potentially close public access bridge / walkway during construction for public safety and to facilitate construction activities.

### **Risk of No Action:**

#### **Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

#### **Project Unique Risk of No Action:**

In the event of a failure with the existing condition of Gate 3, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam resulting in activation of RG&E's Emergency Action Plan.

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public in and around Station 5 Headgates and downstream of the facility.

4.Forced outage of turbine-generating units at Station 5 Powerhouse (and other associated equipment) due to not being able to impound water for generation or renewable energy.

5.RG&E being unable to comply with FERC Hydropower Operating License.

6.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

**1. Upgrade Gate 3**

a. Upgrade Gate 3 components to ensure gate operability. Ensure dogging devices upgraded to alleviate operations work around. Install/remove cofferdam.

**2. Replace Gate 3 with Upgraded/New Gate**

a. Rather than upgrade components, replace the gate with new, upgraded steel sector gate

**3. Upgrade Gate 3 per "Preferred Option Name" and also include redundant gate dogging device system such as rotating prop system.**

a. Not chosen due to the following reasons:

i. Initial increased design cost

ii. Constructability issues and potential discovery during installation

iii. Previously documented reliability issues (from "old" system that used to be installed)

iv. Previous gate propping system had poor operational reliability.

v. Previous gate propping system could not be verified in proper position without sending someone inside the gate to verify (personnel safety issue)

vi. Previous gate propping system required significant maintenance and required personnel to enter the gate several times per year.

vii. Leakage at gate propping seal caused icing and reliability issues

viii. Gate propping pocket that recessed the propping system below the gate sill seal routinely fills with sediment and debris requiring gate entry to clean biannually otherwise propping system would malfunction.

ix. Issues with access to the internal propping system for bearing greasing and maintenance.

x. Original gate propping system did not reliably or fully engage the propping arm seat, which held the gate.

RG&E has assessed all project alternatives during project planning in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/ permitting/construction) for similar activities,

b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c. analogous cost estimated from similar projects,

d. appropriate project support costs,

e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023          | 2024          |  |  |
|------------------------|-----------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ 69           | \$ -        | \$ -        | \$ -        | \$ 6          | \$ 63         |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ 847          | \$ -        | \$ -        | \$ -        | \$ 294        | \$ 554        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ 109          | \$ -        | \$ -        | \$ -        | \$ 36         | \$ 74         |  |  |
| # Internal, Overheads  | \$ 84           | \$ -        | \$ -        | \$ -        | \$ 21         | \$ 63         |  |  |
| # Materials            | \$ 44           | \$ -        | \$ -        | \$ -        | \$ -          | \$ 44         |  |  |
| # Overheads - External | \$ 289          | \$ -        | \$ -        | \$ -        | \$ 88         | \$ 201        |  |  |
| <b>Total</b>           | <b>\$ 1,442</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 444</b> | <b>\$ 998</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 475          | \$ 156          | \$ 319          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 6,428        | \$ 4,823        | \$ 1,605        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 28           | \$ 18           | \$ 10           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 313          | \$ 245          | \$ 68           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 289          | \$ 289          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 727          | \$ 562          | \$ 165          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 8,259</b> | <b>\$ 6,091</b> | <b>\$ 2,168</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RG&E Powerhouse / Facility Structures

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004505              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

RG&E Station 26 Hydroelectric Project (FERC Project No. P-2584) was constructed circa 1952 and is an unstaffed facility comprised of a single 3.0 MW turbine-generating unit. The Project has a significant hazard dam that is owned and operated by New York State Canal Corporation.

RG&E Station 2 Hydroelectric Project (FERC Project No. P-2582) was constructed circa 1960 and is an unstaffed facility comprised of a single 8.5 MW turbine-generating unit. The Project has a low hazard dam (Central Ave. Dam) used for impounding water for use in generation of clean renewable hydroelectric energy.

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) was constructed circa 1917 and is an unstaffed facility with three (3) turbine-generating units and a total rated capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) used for impounding water for use in generation of clean renewable hydroelectric energy.

All three (3) facilities are located on the Genesee River in the City of Rochester, New York. The facilities are remotely monitored and controlled via run-of-river operation, which means that a consistent river elevation is maintained at each facility, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Each facility is showing signs of excess wear and degradation caused by years of constant use, operation, and being exposed to the elements. RG&E has identified a need to perform upgrades at each facility to extend the useful life and ensure integrity is adequately maintained for the continued safe, efficient, and reliable operation of the hydroelectric facilities. The ability to maintain a water-tight structure is important to maintain facility operability, personnel safety, and public safety in and around the hydroelectric generating facility.

#### Project Scope:

RG&E Powerhouse and Facility Structures Upgrades Project is comprised of the following activities:

- Detailed inspection/investigation to confirm existing conditions of the facilities at Station 26, Station 2, and Station 5.
- Conceptual and detailed design of facility upgrades, including upgrades to façade, roof scuppers, floors, framing/columns, and/or building exterior.
- Implementation of detailed designs to address problematic areas, and structural upgrades on the facilities.

#### Project Benefits:

Upon completion of RG&E Powerhouse and Facility Structure Upgrade Project, the Station 26, Station 2, and Station 5 hydroelectric facilities structural issues will be addressed, which is necessary to extend the life and maintain integrity of the facilities, while continuing to protect the turbine-generating units and associated auxiliary equipment. In addition, upgrading of the facility structures is necessary to maintain public and personnel safety in and around the hydroelectric generating facilities.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.RG&E to mitigate risk by collecting building samples and testing for regulated building materials during design to identify need for abatement during construction.

2.Unforeseen existing conditions resulting in design changes during construction.

a.During design, RG&E to mitigate / reduce risk by using existing drawings, if and when available, and performing field inspections to document existing conditions and reduce assumptions on design drawings.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

By neglecting to perform the required facility upgrades at the RG&E facilities, RG&E inherits additional risk of damage to the facility structure and equipment (turbine-generators, controls, auxiliary systems, etc) inside each facility, which could require RG&E to remove turbine-generating units from service and reducing available clean renewable energy capacity from New York State's renewable energy portfolio.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Station 2 Powerhouse

a.Upgrades to façade and roof, as required.

2.Station 2 Rackhouse

a.Replacement / upgrade of existing roof bracing and addition of coating system to extend the useful life of the existing metal roof.

3.Station 5 Powerhouse

a.Concrete / masonry upgrades on interior and exterior walls in and around Station 5 powerhouse that have spalling / deterioration.

4.Station 5 Rackhouse

a.Inspect, analyze, and reinforce steel column bases with new steel plating as required due to corrosion build-up, which will extend the life of the structure.

5.Station 26 Powerhouse

a.Replace / upgrade existing louvers in basement for improved ventilation, which is necessary to maintain operating temperatures of the turbine-generating unit during summer months.

b.Replace / upgrade windows on exterior of Powerhouse as proactive measure to mitigate risk of water infiltration and improved ventilation.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029          | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|---------------|---------------|-------------|
| # AFUDC                | \$ 136          | \$ -        | \$ -        | \$ 14         | \$ 29         | \$ 45         | \$ 48         | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # External Services    | \$ 1,107        | \$ -        | \$ -        | \$ 170        | \$ 195        | \$ 682        | \$ 60         | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # Internal, Labor      | \$ 120          | \$ -        | \$ -        | \$ 30         | \$ 30         | \$ 30         | \$ 30         | \$ -        |
| # Internal, Overheads  | \$ 45           | \$ -        | \$ -        | \$ 9          | \$ 9          | \$ 24         | \$ 3          | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # Overheads - External | \$ 107          | \$ -        | \$ -        | \$ 23         | \$ 22         | \$ 52         | \$ 9          | \$ -        |
| <b>Total</b>           | <b>\$ 1,515</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 247</b> | <b>\$ 285</b> | <b>\$ 833</b> | <b>\$ 150</b> | <b>\$ -</b> |

[illegible]



## S160 Toe Scour Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004440              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The RG&E Station 160 Dam is located on the Genesee River in Mount Morris, New York, was constructed circa 1916 and has an operational low hazard dam, as classified by New York State Department of Environmental Conservation (NYSDEC Dam ID No. 036-0379). The hydroelectric generating facility is retired from service however has an operational power reservoir.

RGE Station 160 Toe Scour Upgrades Project is a project to reconstruct the dam through install post tension anchors on the existing masonry dam along with addressing the dam toe scour through reinforcing the concrete on the spillway/dam and toe.

Recent inspections noted areas of the dam toe with significant spalling and undermining and areas that are at end of life. The project will extend the life of the dam, improve dam integrity and stability, along with fulfilling RG&E's on-going responsibility for public safety and maintenance of the dam.

#### Project Scope:

Station 160 Toe Scour Upgrade Project is comprised of the following activities:

- Detailed inspection of the dam and toe structure with identification of area requiring reconstruction,
- Detailed design of upgrades to the dam/toe structure,
- Personnel, contract services, equipment, and material to implement the design upgrades.

#### Project Benefits:

RG&E Station 160 Toe Scour Upgrade Project is a dam safety project that will reconstruct the dam to address degradation identified through inspections. The outcome of the project will result in improved overall dam structural integrity, extend the life of the dam, and continues RG&E's on-going responsibility and obligation for public safety and maintenance of the dam.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult Site Access for Construction

a.Contractors to transport materials to a crane located on a barge in the Genesee River for construction and / or by building an access road.

b.Contractors required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) at site during construction.

c.RG&E to perform constructability review during design.

2.Diverting river flow around the construction work area.

a.RG&E to assess options to divert / bypass river flow around the construction area by use of existing sluiceway and / or other means (siphon, flashboards, etc.).

3.Working in / around the Genesee River during construction

a.RG&E to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.Upstream of the dam is Army Corps of Engineers (ACOE) Mount Morris flood control dam. Coordination with ACOE operations personnel will be essential for the safety of personnel working in the Genesee River and on the dam.

4.Working in close proximity to existing bridge / roadway

a.RG&E to maintain clearances from existing bridge abutments / foundations.

b.RG&E to seek required permit(s) when working off existing bridge including, but not limited to right-of-way permits and lane closures (as required).

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities are required to be operated and maintained in a safe and responsible manner. If implementation of Station 160 Toe Scour Upgrade Project is delayed, RG&E will increase inspection of the dam structure to monitor areas of concern and continue to maintain the dam in accordance with NYSDEC requirements. The current and on-going risk is the continued degradation of the dam spillway and toe due to continuous flow over the dam coming from ACOE Mount Morris flood control dam. Project Unique Risk of No Action:

In the event of a partial or complete failure of the dam spillway, it could potentially result in the following consequences including but not limited to:

1.Potential increased risk of public injury for those located downstream of Station 160 dam.

2.Potential damage to public property and/or assets downstream of Station 160 dam.

3.RG&E being unable to comply with obligation to maintain Station 160 dam to protect the public.

4.Negative impact to ecological systems.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Removal of Station 160 Dam

a.Requires hydraulic analysis by design engineer to determine feasibility and cost-effectiveness. If feasible, alternative would also require extensive coordination with regulatory agencies such as United States Fish & Wildlife Service and New York State Department of Environmental Conservation regarding impacts to biosystem. Due to age of the structure, consultation with New York State Historical Preservation Office would be required.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## S5 Brewer Street Water and Fire Lines

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-1078-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

RG&E Station 5 Brewer Street Water Line and Paving Upgrade Project involves upgrading the current water service to facilitate installation of a fire hydrant(s) at the headgate control house. To comply with City of Rochester code, upon installation of the new water service, RG&E will be required to install a backflow preventer directly adjacent to the City of Rochester's shutoff valve, and install a fire hydrant adjacent to the Station 5 headgates. Additionally, the Brewer Street access road to Station 5 Headgates is at end-of-life due to settling/eroding from extensive vehicle and equipment traffic operating and maintaining the facility. Brewer Street requires a full-depth upgrade, including regrading and implementation of drainage structures, to improve site access. At the same time, RG&E plans to extend the gas service leading to the headgates facility. The gas service will allow for future installation of improved de-icing equipment used on the dam gates during winter months to maintain and improve operation of the dam.

#### Project Scope:

Station 5 Brewer Street Water Line and Paving Upgrade Project involves the following activities:

- Conceptual and detailed design of water / fire service, gas service, and asphalt upgrades from top of Brewer Street leading down to Station 5 headgates.
- Procurement and implementation of detailed designs

#### Project Benefits:

Station 5 Brewer Street Water Lines and Paving Upgrade Project involves the upgrade of the existing water service, and addition of a fire hydrant, to comply with City of Rochester code. RG&E will also extend the gas service to the headgates facility for future expansion of improved de-icing equipment used on the dam during winter months to maintain and improve gate operability and reliability, which is a requirement of FERC's hydropower license issued to RG&E. Additionally, upgrade of Brewer Street will improve access of equipment and materials necessary to operate and maintain the facility, safety for personnel working at Station 5 Headgates, and the public using the Brewer Street which is part of the Genesee Greenway Trail.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Excavation in and around former manufactured gas plant (MGP) spoils remediation site:

a.Portions of Station 5 headgates and Brewer Street were remediated circa 2004-2005 due to presence of former MGP spoils resulting in strict guidance for excavating on the site. RG&E will coordinate with internal stakeholders and permitting specialists during design and seek permits as required for excavation on site.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

If RG&E is unable to upgrade the existing water service to Station 5 Headgates, RG&E will not be able to reduce risk if a fire were to occur since drafting from the Genesee River for fire suppression is unreliable. If extension of the gas service does not occur, RG&E will not be able to expand (future) use of de-icing equipment used on the dam during winter months to maintain and improve gate operability and reliability, which is a requirement of FERC's hydropower license issued to RG&E.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Relocate water service backflow preventer from inside of existing Headgates control house to top of Brewer Street.

2.Extend gas supply to the RG&E Station 5 headgates to facilitate future expansion of de-icing equipment used on the dam during the winter months.

RG&E currently plans to install the noted alternatives, but will assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## S5 U1 Wicket Gate Bushing Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-001230              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The purpose of Station 5 Unit 1 Wicket Gate Bushing Upgrade Project is to upgrade the current wicket gate bushing and associated operating component material (i.e. operating ring, wicket gate arms, etc.) with current technology resulting in increased operational reliability and efficiency.

#### Project Scope:

RG&E Station 5 Unit 1 Turbine Wicket Gate Bushing Upgrade Project involves the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly,
- Inspection and measurement of all turbine (critical) components,
- Upgrade of turbine assembly components, as deemed necessary, such as head cover and bottom ring wicket gate bushing material, and sealing surfaces,
- Installation of new vibration monitoring system,
- Reassembly and alignment of turbine-generator,
- Commission turbine-generator and return to service.

#### Project Benefits:

RG&E Station 5 Unit 1 Turbine Wicket Gate Bushing Upgrade will eliminate current operational issues with the current wicket gate bushing material, restore and extend the life of the asset returning 14.44 MW of reliable renewable electric generation to service. Restoring reliable operation of the turbine-generating unit is necessary to support New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown damage / condition to existing turbine-generator components

a.RG&E to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Alignment Issues

a.Prior to and during disassembly, RG&E to perform survey to baseline existing turbine-generator components and alignment to reduce risk of issues during final fit-up and alignment.

3.Material Compatibility

a.RG&E to analyze / test / verify existing system components to verify new bushing material is compatible with the operating environment.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of existing wicket gate bushing material, it could result in the following consequences including but not limited to:

1.Potential damage to equipment (turbine-generator, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage of turbine-generating unit (and other associated equipment).

3.RG&E unable to comply with operational requirements of FERC's Hydropower Operating License.

4.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Composite or Self-Lubricating Bushings

a.RG&E to assess feasibility and cost-effectiveness of installing composite or self-lubricating bushings.

If RG&E determines there is risk to personnel safety and operation of Unit 1 turbine-generating unit in its current condition, RG&E will suspend operation of the turbine-generating unit as an alternative to implementing the required upgrades.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.



Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|
| # AFUDC                | \$ 128          | \$ -        | \$ -        | \$ 17         | \$ 34         | \$ 76         | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 641          | \$ -        | \$ -        | \$ 185        | \$ 428        | \$ 28         | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 195          | \$ -        | \$ -        | \$ 60         | \$ 120        | \$ 15         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 31           | \$ -        | \$ -        | \$ 10         | \$ 19         | \$ 1          | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 95           | \$ -        | \$ -        | \$ 31         | \$ 59         | \$ 5          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,089</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 304</b> | <b>\$ 661</b> | <b>\$ 124</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Station 170 Dam Resurfacing and Power Upgrades Projects

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-3093-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP4 Change        | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

RG&E Station 170 (Wiscoy) Dam is a Class B - Intermediate hazard dam as classified by New York State Department of Environmental Conservation (NYSDEC Dam No. 030-0565), and is located on Wiscoy Creek in Hume, New York. The hydroelectric generating facility is retired from service however has an operational dam and power reservoir. Station 170 dam was constructed circa 1922 and is located within the lower portion of the Wiscoy creek watershed just above the confluence of the Genesee River.

Station 170 Dam Resurfacing Project is a project to resurface and reconstruct portions of the concrete gravity dam and adjacent spillways.

Recent inspections identified areas of the dam and spillways with significant spalling and areas that are at end-of-life. The project will extend the life of the dam, improve dam integrity and fulfill RG&E's on-going responsibility to maintain the dam for the safety of the public downstream of the dam and Wiscoy Creek.

#### Project Scope:

Station 170 Dam Resurfacing Improvement Project is comprised of the following activities:

- Detailed inspection of the dam structures with identification of area requiring reconstruction,
- Detailed design of upgrades to the dam structure,
- Personnel, contract services, equipment, and material to implement the design upgrades.

#### Project Benefits:

RG&E Station 170 Dam Resurfacing Project is a dam safety project to improve the integrity and safety of the dam. The project involves reconstruction of the dam to address areas of degradation identified through inspections. Upon project completion, resurfacing and upgrades will extend the life of the dam and continues RG&E's on-going responsibility and obligation for public safety and maintenance of the dam.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult Site Access for Construction

a.Contractors to transport materials into a difficult location in or on the shoreline of Wiscoy Creek for construction by crane and / or by building an access road.

b.Contractors required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) at site during construction.

c.RG&E to perform constructability review during design.

2.Diverting upstream creek flows around the construction work area.

a.RG&E to assess options to divert / bypass upstream creek flows around the construction area by use of existing spillway(s) and / or other means (siphon, flashboards, etc.).

3.Working in / around Wiscoy Creek during construction

a.RG&E to assess need for cofferdam to dewater construction work area and minimize construction risk(s).

b.RG&E to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in Wiscoy Creek.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities are required to be operated and maintained in a safe and responsible manner. If implementation of Station 170 Dam Resurfacing Project is delayed, RG&E will increase inspection of the dam structure to monitor areas of concern and continue to maintain the dam in accordance with NYSDEC requirements. The current and on-going risk is the continued degradation of the dam spillway due to continuous flow over the dam.

**Project Unique Risk of No Action:**

In the event of a partial or complete failure of the dam spillway, it could potentially result in the following consequences including but not limited to:

1.Potential increased risk of public injury for those located downstream of Station 170 dam

2.Potential damage to public property and/or assets downstream of Station 170 dam.

3.RG&E being unable to comply with obligation to maintain Station 170 dam to protect the public.

4.Negative impact to ecological systems.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Removal of Station 170 Dam

a.Requires hydraulic analysis by design engineer to determine feasibility and cost-effectiveness. If feasible, alternative would also require extensive coordination with regulatory agencies such as United States Fish & Wildlife Service and New York State Department of Environmental Conservation regarding impacts to biosystem. Due to the age of the structure, consultation with New York State Historical Preservation Office would be required.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029            | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 266          | \$ -        | \$ -        | \$ 22         | \$ 44         | \$ 64           | \$ 136        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 2,775        | \$ -        | \$ -        | \$ 250        | \$ 220        | \$ 2,170        | \$ 135        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 300          | \$ -        | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 60         | \$ -        |
| # Internal, Overheads  | \$ 93           | \$ -        | \$ -        | \$ 12         | \$ 10         | \$ 65           | \$ 6          | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Overheads - External | \$ 252          | \$ -        | \$ -        | \$ 37         | \$ 30         | \$ 166          | \$ 19         | \$ -        |
| <b>Total</b>           | <b>\$ 3,686</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 382</b> | <b>\$ 364</b> | <b>\$ 2,585</b> | <b>\$ 356</b> | <b>\$ -</b> |

[illegible]

## Station 2 Unit 1 Turbine Wicket Gate Bushing Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-001229              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

RG&E Station 2 Hydroelectric Project (FERC Project No. P-2582), is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with one turbine-generating unit that is remotely monitored and controlled with a rated capacity of 8.5 MW. The Project has a low hazard dam (Central Ave. Dam) used to impound water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

RG&E Station 2 Unit 1 Turbine Wicket Gate Bushing Upgrade Project is to upgrade the current wicket gate bushing and associated operating component material (i.e. operating ring, wicket gate arms, etc.) with current technology resulting in increased operational reliability and efficiency.

#### Project Scope:

RG&E Station 2 Unit 1 Turbine Wicket Gate Bushing Upgrade Project involves the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly,
- Inspection and measurement of all turbine (critical) components,
- Upgrade of turbine assembly components, as deemed necessary, such as head cover and bottom ring wicket gate bushing material, and sealing surfaces,
- Installation of new vibration monitoring system,
- Reassembly and alignment of turbine-generator,
- Commission turbine-generator and return to service.

#### Project Benefits:

RG&E Station 2 Unit 1 Turbine Wicket Gate Bushing Upgrade will eliminate current operational issues with current wicket gate bushing material, restore and extend the life of the asset returning 8.5 MW of reliable renewable electric generation to service. Restoring reliable operation of the turbine-generating unit is necessary to support New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Unknown damage / condition to existing turbine-generator components

a.RG&E to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Alignment Issues

a.Prior to and during disassembly, RG&E to perform survey to baseline existing turbine-generator components and alignment to reduce risk of issues during final fit-up and alignment.

3.Material Compatibility

a.RG&E to analyze / test / verify existing system components to verify new bushing material is compatible with the operating environment.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of existing wicket gate bushings, it could result in the following consequences including but not limited to:

1.Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage(s) of turbine-generating units (and other associated equipment).

3.RG&E unable to comply with operational requirements of FERC's Hydropower Operating License.

4.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Composite or Self-Lubricating Bushings

a.RG&E to assess feasibility and cost-effectiveness of installing composite or self-lubricating bushings.

RG&E has determined there is risk to personnel safety and the facility to run the turbine-generator in its current condition. RG&E has suspended operation of Unit 1 turbine-generator until implementation of the upgrades occur.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 26 Intake Deck/Gate Hoist Upgrades and Resurfacing

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-4413-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 26 Hydroelectric Project (FERC Project No. P-2584) is located on the Genesee River in the City of Rochester, New York. The hydroelectric generating facility is comprised of a single 3.0 MW turbine-generating unit. The Project has a significant hazard dam that is owned and operated by New York State Canal Corporation. The hydroelectric facility is a run-of-river operation, which means that a consistent pond level is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

RG&E Station 26 Intake Deck and Gate Hoist Upgrades Project is a project to reconstruct the existing water intake structure and water conveyance system that conveys river water to Station 26 turbine-generating unit. Recent inspections of the structures noted areas of the intake deck, including spandrel beams and support wall, with significant spalling and areas that are at end-of-life. Additionally, RG&E to upgrade the water conveyance isolation / intake gate, including the intake gate structure and hoisting equipment to raise and lower the intake gate. The intake gate structure is original to the hydroelectric facility, which was constructed circa 1952. The project also involves the design and installation of reinforced concrete and installation of a new penstock and scroll case section located in the basement of Station 26 powerhouse. The section of exposed penstock and scroll case has undergone significant repairs to address loss of material and corrosion. The penstock and scroll case section is at end-of-life.

#### Project Scope:

Station 26 Intake Deck, Gate Hoist, Penstock, and Scroll Case Upgrade Project is comprised of the following activities:

- Detailed inspection of the intake deck, including adjacent walls and support beams, with identification of areas requiring reconstruction,
- Detailed inspection of the intake gates, including the hoists, cables, sheaves, and support structure,
- Detailed assessment of existing penstock and scroll case to confirm the extents of required upgrades
- Detailed design of upgrades to the intake deck, intake support beams, intake gates, and associated intake gate structure.
- Conceptual and detailed design of to the penstock and scroll case,
- Mobilization and use of confined space rescue teams for entry into penstock and scroll case for inspection and construction activities,
- Contract services, equipment, and material to implement the design upgrades, including intake deck upgrades, gate hoist upgrades, and new steel lining on penstock section along with placement of reinforced concrete upgrades in and around the penstock and scroll case.

#### Project Benefits:

RG&E Station 26 Intake Deck, Gate Hoist, Penstock, and Scroll Case Upgrade Project involves the installation of new beams associated structural members along with reconstructing the intake deck to extend the life of the water intake and conveyance system. Upgrades to the intake gate, and associated intake gate lifting structure, penstock, and scroll case, will improve RG&E's ability to safely isolate the water conveyance system, which is required to provide access for personnel to access the turbine-generator for routine inspection and maintenance. Proactive measures to address Station 26 intake deck, gate hoist, penstock, and scroll case structures will reduce the potential for damage to the turbine-generator during operation (concrete ingestion) and allow for continued reliable operation of Station 26 hydroelectric facility in support of New York State's Clean Energy Goals and initiatives.



### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.RG&E to mitigate risk by collecting building samples and testing for regulated building materials in advance of or during design to identify need for abatement during construction.

2.Working in / around the Genesee River during construction

a.RG&E plans to install cofferdam upstream of intake trashracks and dewater water conveyance system for construction to minimize risks.

b.RG&E to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Genesee River.

3.Difficult Site Access for Construction

a.Contractors to perform constructability review during design to determine the safest, most cost-effective construction approach. RG&E to assess safest, most cost-effective means of accessing underside of intake deck / structural members during construction.

b.Contractors required to set up temporary infrastructure (lighting, electrical, compressed air, construction trailer, etc) at site during construction.

4.Fit-up and alignment of steel lining Inside scroll case.

a.RG&E to survey / scan existing scroll case and penstock to 3D model existing conditions prior to fabrication of new steel liners (if required).

b.RG&E to review detailed shop drawings prior to fabrication and perform regular fabrication shop inspections during fabrication to mitigate risk.

### **Risk of No Action:**

#### **Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

In the event of a failure with the existing Station 26 intake structure, intake isolation gate, penstock, or scroll case, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of river flows in and outside of RG&E's Station 26 Hydroelectric Facility, and potentially into the City of Rochester, resulting in activation of RG&E's Emergency Action Plan.

2.Lowering of Genesee River upstream of New York State Canal Corporation's Court Street Dam negatively impacting NYS Canal System navigation season.

3.RG&E's inability to provide cooling water to Monroe County's facilities located in City of Rochester.

4.Negative impact to ecological systems.

5.Increased risk of injury to personnel and / or public in and around Station 26 Hydroelectric Facility.

6.Forced outage of turbine-generating unit (and other associated equipment) due to not being able to impound water for generation of renewable energy.

7.RG&E being unable to comply with FERC Hydropower Operating License.

8.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1. Replace / upgrade entire Station 26 intake deck, including structural framing members and portion of existing concrete walls.
  2. Selective replacement / upgrades to the existing concrete intake deck / framing members and concrete walls.
  3. Remove intake gate and re-coat to extend the gate life. Install new gate seals on existing intake gate.
    - a. Existing intake gate was installed in 2009 and river water leaks into the turbine penstock when the gate is closed. RG&E to perform detailed inspection on gate and assess need to perform upgrades upon project initiation.
  4. Assess condition of existing intake stop gate lifting structure and operating equipment. Modernize and upgrade if determined is necessary.
  5. Relining penstock with new fiber reinforced polymer (FRP) lining to extend the service life of the penstock.
    - a. RG&E to perform detailed inspection of penstock in dewatered state to determine extents of upgrades required. RG&E to seek recommendations from design engineer on the required improvements, including installation of FRP or reinforced concrete liner, to extend the service life of the penstock to minimum 75 years.
- RG&E will perform a detailed inspection and structural analysis of the existing intake structure framing members to determine the most cost-effective alternative, including consideration of viable construction methods. RG&E currently plans to replace / upgrade the entire Station 26 intake deck and intake gate lifting structure and operating equipment by installing a cofferdam upstream of the intake trash racks and dewatering the water conveyance system.

RG&E to assess all project alternatives upon initiation of the project in accordance with the Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026          | 2027          | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|---------------|---------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 306          | \$ -        | \$ 26         | \$ 52         | \$ 78           | \$ 150        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 3,471        | \$ -        | \$ 305        | \$ 300        | \$ 2,746        | \$ 120        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 270          | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 30         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 136          | \$ -        | \$ 16         | \$ 14         | \$ 101          | \$ 4          | \$ -        | \$ -        |
| # Materials            | \$ 125          | \$ -        | \$ -          | \$ -          | \$ 125          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 354          | \$ -        | \$ 47         | \$ 42         | \$ 252          | \$ 13         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,662</b> | <b>\$ -</b> | <b>\$ 455</b> | <b>\$ 468</b> | <b>\$ 3,421</b> | <b>\$ 318</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Gate 2 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>UJ-R5063-RGE-EG         | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 5 Gate 2 is located at Station 5 Headgates and is one of five gates (49.5 long by 13.75-ft high) used to impound river water that is used in generation of renewable energy. Gate 2 Hinge Upgrade Project is removal of the existing gate hinges, which are anchored into bedrock, and installation of a new hinge design and anchor system. The gate hinges are a critical component in the safe and reliable operation of the spillgates, which are used to pass river flows downstream of the headgate structure.

In January 2018, the hinges of two adjacent crest gates (Gate 4A & 4B) failed during operation as a result of ice accumulation from extremely cold temperatures in the region resulting in activation of RG&E's Emergency Action Plan, lowering of Station 5 impoundment and ceasing generation at Station 5 Powerhouse. Since then, RG&E has been diligently working to redesign the gate hinge design and anchor system.

The purpose of Station 5 Gate 2 Hinge Upgrade Project is to upgrade the hinges on Gate 2 to bring them current with the upgraded design implemented on Spillgate 4A & 4B.

#### Project Scope:

Station 5 Gate 2 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project is comprised of the following activities:

- Detailed inspection of Gate 2 with identification of areas requiring reconstruction,
- Personnel, equipment and material for implementation of design.
- Installation of ~50-ft long temporary cofferdam to isolated Gate 2 for removal,
- Removal of the existing gate 2, hinge brackets and sole plates,
- Redesign and implementation of new hinge design at Gate 2, including additional post-tensioned rock anchors, and new sole plates.
- New hinge design will be based on recently updated Gate 4A & 4B hinges with additional hinge anchorage.
- Reinstallation / fit-up of hinge brackets and Gate 2.
- Recommission Gate 2 and return to service after removal of the cofferdam.

#### Project Benefits:

Station 5 Gate 2 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project is a proactive measure to implement upgraded hinges and anchorage system design to reduce the potential for future failure due to anchor ice, etc. during the winter months and associated gate operation. Installation of the new hinge and anchorage design will allow RG&E to maintain operational compliance with FERC's Hydropower operating license and continue to generate renewable energy in support of New York State's Clean Energy Goals and initiatives

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult Site Access for Construction

a.Contractors(s) to transport materials onto spillway for construction by crane.

b.Contractors required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) at site during construction.

c.RG&E to perform constructability review during design.

2.Working in / around Genesee River during construction

a.RG&E to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Genesee River.

b.RG&E to closely monitor river flows and follow river communications protocol during construction.

3.Working in close proximity to existing public access bridge

a.RG&E to assess need to potentially close public access bridge / walkway during construction for public safety and to facilitate construction activities.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

**Project Unique Risk of No Action:**

In the event of a failure with the existing Gate 2, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam resulting in activation of RG&E's Emergency Action Plan.

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public in and around Station 5 Headgates and downstream of the facility.

4.Forced outage of turbine-generating units at Station 5 Powerhouse (and other associated equipment) due to not being able to impound water for generation of renewable energy.

5.RG&E being unable to comply with FERC Hydropower Operating License.

6.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.RG&E's Hydro Winter Operations Procedures

a.RG&E is currently using winter operations measures to monitor / reduce ice buildup at the RG&E Station 5 Headgates to reduce risk of Gate 2 failure. RG&E needs to upgrade the Gate 2 hinge to mitigate risk of future failure during gate operation.

2.Metalize Gate 2 prior to re-installation

a.RG&E to perform detailed inspection of Gate 2 prior to hinge upgrade design / project bid to verify existing condition and condition of metalized coating on existing gate.

b.RG&E to assess need to send gate to fabrication shop upon removal for new metalized coating, to extend the life of the gate, prior to reinstallation.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c.analogous cost estimated from similar projects,

d. appropriate project support costs,

e.applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 |
|--------------|-------|------|------|
|--------------|-------|------|------|

[illegible]

| Capital Details: | Total | 2025 | 2026 |
|------------------|-------|------|------|
|------------------|-------|------|------|

|                        |                 |             |               |               |                 |               |             |             |
|------------------------|-----------------|-------------|---------------|---------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 297          | \$ -        | \$ 26         | \$ 53         | \$ 78           | \$ 140        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 2,710        | \$ -        | \$ 310        | \$ 290        | \$ 1,990        | \$ 120        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 300          | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 60         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 120          | \$ -        | \$ 16         | \$ 14         | \$ 84           | \$ 6          | \$ -        | \$ -        |
| # Materials            | \$ 300          | \$ -        | \$ -          | \$ -          | \$ 300          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 314          | \$ -        | \$ 48         | \$ 41         | \$ 206          | \$ 19         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,040</b> | <b>\$ -</b> | <b>\$ 461</b> | <b>\$ 458</b> | <b>\$ 2,778</b> | <b>\$ 344</b> | <b>\$ -</b> | <b>\$ -</b> |

| O&M Details: | Total | 2025 | 2026 |
|--------------|-------|------|------|
|--------------|-------|------|------|

|       | Total | 2020 | 2020 | 2021 | 2020 | 2020 | 2020 | 2021 |
|-------|-------|------|------|------|------|------|------|------|
| Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |

## Station 5 Gate 5 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-3089-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### **Project description:**

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 5 Gate 5 is located at Station 5 Headgates and is one of five gates (49.5 long by 13.75-ft high) used to impound river water that is used in generation of renewable energy. Gate 5 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project is necessary to address the following: (1) removal and upgrading of the existing gate rub plate and bottom seal, (2) removal of the existing gate hinges, which are anchored into bedrock, and installation of a new hinge design and anchor system, and (3) stabilize and encapsulate the rock strata directly downstream of Gate 5.

The gate seals prevent river water from leaking between the sides and bottom of the gate and downstream of the dam when the spillgate is raised. Inspection of the seals on adjacent spillgates (Gate 2, 4A & 4B), which were installed circa 2004 to 2006, revealed degradation and cracking due to ultraviolet light and environmental conditions. Failure of or significant leakage through the seals could result in RG&E not maintaining impoundment elevations required of RG&E's FERC Hydropower operating license and loss in generating renewable energy.

Upgrade of Gate 5 hinges is necessary to bring the current gate hinge anchors / attachment to the spillway into alignment with an updated engineering design implemented on Spillgate 4A & 4B. Gate hinges are a critical component in the safe and reliable operation of the spillgates. Similar to the rubplate and bottom seals, the gate hinges and associated anchors were installed circa 2004 to 2006.

Gate 5 rock stabilization is necessary to stabilize and encapsulate the rock strata directly downstream of Spillgate 5 to prevent further erosion and undermining of the concrete spillway.

#### **Project Scope:**

Station 5 Gate 5 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project is comprised of the following activities:

- Detailed inspection of Gate 5 with identification of areas requiring reconstruction, including rubplate and, bottom seals, and downstream spillway rock strata,
- Procurement of new rub plate seals and ~50-ft long bottom seal
- Installation of ~50-ft long temporary cofferdam to isolate Gate 5 for removal and installation of new gate seal components, new hinge, anchors and accessories
- Removal of the existing gate 5, hinge brackets and sole plates,
- Redesign and implementation of new hinge design at Gate 5, including additional post-tensioned rock anchors, and new sole plates.
- oNew hinge design will be based on recently updated Gate 4A & 4B hinges with additional hinge anchorage.
- Personnel, equipment, and material for installation of new rubplates, rubplate seals and upstream breastwall seal
- Reinstallation / fit-up of hinge brackets and Gate 5.
- Conceptual and detailed design to stabilize the rock strata on Gate 5 spillway downstream of Gate 5 through encapsulation (cofferdam panels, rock anchors, reinforced concrete).
- Personnel, equipment, and material to implement the rock stabilization upgrades.
- Recommission Gate 5 and return to service after removal of the cofferdam.

#### **Project Benefits:**

RG&E Station 5 Gate 5 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project are proactive measures necessary to address the following:

- Upgrading of Gate 5 hinges and anchorage system to reduce the potential for future failure due to anchor ice, etc. during the winter months and associated gate operation.
- Installation of new ultra-violet stable rubplate and bottom seals to prevent future seal failure.
- Stabilization and encapsulation of the rock strata directly downstream of Gate 5 spillway to reduce the on-going erosion and undermining of the concrete spillway. Continued erosion and undermining of the concrete spillway could result in RG&E having to remove Gate 5 from service, which will limit and/or restrict river flow through the dam during high flow events and could lead to instability of the dam structure if the gate is left in service.

Installation of new rubplates, rubplate seals, bottom seals, hinges, and rock stabilization on Gate 5 at Station 5 Headgates will allow RG&E to maintain public safety, safely operate and maintain operational compliance with FERC's Hydropower operating license and continue to generate renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult Site Access for Construction

a.Contractors(s) to transport materials onto spillway for construction by crane.

b.Contractors required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) at site during construction.

c.RG&E to perform constructability review during design.

2.Working in / around Genesee River during construction

a.RG&E to require strict adherence to site-specific health and safety plans during construction, including risk mitigation measures when working in and around the Genesee River.

b.RG&E to closely monitor river flows and follow river communications protocol during construction.

3.Working in close proximity to existing public access bridge

a.RG&E to assess need to potentially close public access bridge / walkway during construction for public safety and to facilitate construction activities.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

**Project Unique Risk of No Action:**

In the event of a failure with the existing Gate 5, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam resulting in activation of RG&E's Emergency Action Plan.

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public in and around Station 5 Headgates and downstream of the facility.

4.Forced outage of turbine-generating units at Station 5 Powerhouse (and other associated equipment) due to not being able to impound water for generation of renewable energy.

5.RG&E being unable to comply with FERC Hydropower Operating License.

6.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.



**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.RG&E's Hydro Winter Operations Procedures

a.RG&E is currently using winter operations measures to monitor / reduce ice buildup at the RG&E Station 5 Headgates to reduce risk of Gate 5 failure. RG&E needs to upgrade the Gate 5 hinge to mitigate risk of future failure during gate operation.

2.Metalize Gate 5 prior to re-installation

a.RG&E to perform detailed inspection of Gate 5 prior to hinge upgrade design / project bid to verify existing condition and condition of metalized coating on existing gate.

b.RG&E to assess need to send gate to fabrication shop upon removal for new metalized coating, to extend the life, prior to reinstallation.

3.Removing loose rock strata downstream of Gate 5 spillway and monitor future erosion with periodic inspections.

a.RG&E has performed periodic inspections and has monitored the erosion / undermining on Gate 5 spillway and determined there is a need to implement upgrades to address.

4.Install rock anchors and shotcrete to stabilize rock strata downstream of Gate 5.

a.RG&E to assess feasibility of alternative compared to the installation of cofferdam panels downstream of Gate 5 and determine the best, most cost-effective alternative and long-term solution.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1.Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2.Based on multiple sources:

a.Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c.analogous cost estimated from similar projects,

d.appropriate project support costs,

e.applicable overheads and allocations.

3.Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029            | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 297          | \$ -        | \$ -        | \$ 26         | \$ 53         | \$ 78           | \$ 140        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 2,710        | \$ -        | \$ -        | \$ 310        | \$ 290        | \$ 1,990        | \$ 120        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 300          | \$ -        | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 60         | \$ -        |
| # Internal, Overheads  | \$ 103          | \$ -        | \$ -        | \$ 15         | \$ 12         | \$ 71           | \$ 5          | \$ -        |
| # Materials            | \$ 300          | \$ -        | \$ -        | \$ -          | \$ -          | \$ 300          | \$ -          | \$ -        |
| # Overheads - External | \$ 271          | \$ -        | \$ -        | \$ 43         | \$ 36         | \$ 175          | \$ 18         | \$ -        |
| <b>Total</b>           | <b>\$ 3,980</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 454</b> | <b>\$ 450</b> | <b>\$ 2,734</b> | <b>\$ 343</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Generation Protection and Controls Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004442              | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 5 turbine-generating unit controls and some of the generation protection and controls are original to the facility, which was constructed between 1917 and 1927. The balance of the generator protection and controls pre-date circa 1980's are still in service, and starting to fail leading to reduced operational reliability of the turbine-generating units. Original Equipment Manufacturer (OEM) replacement components are obsolete or difficult to locate, requiring procurement of refurbished components or after-market parts to restore the turbine-generating unit(s) to service.

The purpose of Station 5 Generator Protection and Controls Upgrade Project is to upgrade the current generator protection and controls hardware with state-of-the-art hardware and technology that brings the control systems in-line with current standards resulting in increased operational reliability and availability of parts.

#### Project Scope:

Station 5 Generator Protection and Controls Upgrade Project involves the following activities:

- Review and updating of the existing generator protection and control system drawings.
- Identifying current / state-of-the-art technology to replace, upgrade and standardize the existing generator protection and control systems.
- Detailed design of required modifications to implement the new generator protection and control hardware.
- Procurement of services, material, equipment, and hardware to remove the existing infrastructure and install new generator protection, control hardware and cabinetry.

#### Project Benefits:

Station 5 Generator Protection and Controls Upgrade Project involves the upgrade of the existing generator protection and control systems for Unit 1, Unit 2 and Unit 3 generators due to difficulty with locating OEM components that are obsolete or at end-of-life. Upgrade of the generator protection and controls system will extend the operational life and reliability of the hydroelectric generating facility and continue RG&E's production of clean renewable energy, which supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.RG&E to mitigate risk by collecting samples / testing for regulated building materials during design to identify need for abatement during construction.

2.Issues during Commissioning

a.Due to the complexity involved of integrating new generator protection controls and equipment into the existing facility protection and controls, RG&E to develop a detailed commissioning plan during design and contract Commissioning Engineer familiar with hydroelectric facilities.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower licensed issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of existing generator protection and controls, including the inability to locate aftermarket components, it could result in the following consequences including but not limited to:

1.Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage(s) of turbine-generating units (and other associated equipment).

3.RG&E unable to maintain and monitor operational requirements and compliance with FERC Hydropower Operating License.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Installation of virtual protection relays

a.RG&E to assess feasibility and cost-effectiveness of installing virtual protection relays.

If RG&E determines there is risk to personnel safety and operation of the facility in its current condition, RG&E will suspend operation of the turbine-generating unit(s) until the required generator protection and controls upgrades can be implemented.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required int

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Old House Stabilization Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004498              | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of clean renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The objective of Station 5 Old House Stabilization Project is to assess the structural integrity of the "Old Powerhouse" (a.k.a Old House) and based on the findings of the assessment, implement a comprehensive upgrade or partial demolition to restore structural integrity. Station 5 powerhouse complex consists of the "Old Powerhouse" area at the southern end and a "New Powerhouse" at the north and center areas of the overall powerhouse complex. The Old Powerhouse was constructed in the late 1800's and the New Powerhouse was constructed between 1917 and 1927. The Old Powerhouse is a multi-level structure situated between the river gorge wall and the east bank of the Genesee River. The southern wall of the Old Powerhouse is built into the gorge wall.

A preliminary engineering inspection in January 2024 determined the Old Powerhouse has severely deteriorated structural building members, significant water infiltration, and previously installed shoring to support the structure that is compromised. RG&E plans to expeditiously reinforce/stabilize and/or partially demolish the building to restore structural integrity.

#### Project Scope:

RG&E Station 5 Old House Stabilization Project is comprised of the following activities:

- Detailed inspection/investigation of existing conditions.
- Conceptual and detailed design of building stabilization measures, including upgrades to foundations, framing members, and/or building exterior.
- Conceptual and detailed design of improvements to the Old House intake structure adjacent to the Old House to improve site drainage and minimize water infiltration into the Old House.
- Implementation of detailed designs to stabilize and reinforce the Station 5 Old House, intake structure, and surrounding areas.

#### Project Benefits:

Upon completion of RG&E Station 5 Old House Stabilization Project, the facility will be stabilized to extend the life of the facility and restore safe access. Restoring use of the Station 5 Old House is necessary to maintain safety for personnel maintaining distribution circuits that enter and exit Station 5 "New Powerhouse" and pass through Station 5 Old House.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks**

1.Requires safe entry into abandoned Old Powerhouse for inspection / design / implementation.

a.RG&E to use design engineers / contractors to systematically enter Old Powerhouse with intent to inspect and implement stabilization measures as required to allow for safety entry and passage.

2.Old Powerhouse is partially open to weather elements, causing further degradation of the building structure.

a.RG&E to assess sources of water infiltration into Old House structure and mitigate as necessary.

3.Crane Placement – Site Access Constraints

a.All crane vendor(s) to develop Critical Lift Plan(s) and include crane specifications, crane pick distances, lift weights, subsurface bearing conditions, etc.

### **Risk of No Action:**

#### **Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

#### **Project Unique Risk of No Action:**

Station 5 Old Powerhouse is structurally compromised and has the potential for partial collapse if no action is taken to stabilize. If a partial collapse were to occur, damage to the New Powerhouse, could occur impacting safety of personnel and generation assets located in the New Powerhouse.

### **Project Alternatives:**

RG&E will assess the following project alternative(s):

1.Infill the entire existing Old Powerhouse with flowable fill / concrete

a.Requires relocating existing active distribution of electrical circuits inside the Old House and stabilizing the existing / adjacent "New Powerhouse" wall

2.Removal / demolition of Old Powerhouse

a.Requires structural stabilization of the existing gorge / retaining wall(s) and existing "New" Powerhouse" wall adjacent to Old Powerhouse.

b.RG&E required to assess feasibility of entire or partial demolition of building due to existing live circuits inside Old Powerhouse and proximity to existing "New Powerhouse".

3.Partial reconstruction and / or partial infill of Old Powerhouse

a.RG&E to assess option of infilling portion of Old Powerhouse (i.e. basement) and reconstructing Old Powerhouse with new structural framing members / concrete decking and new roof / exterior.

RG&E continues to investigate existing conditions and structural integrity of the Old Powerhouse, which will be used to determine the best, most cost-effective alternative.

RG&E will assess all project alternatives in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 10         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 602        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 602        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ 24         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 24         |  |  |
| # Internal, Overheads  | \$ 57         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 57         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ 176        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 176        |  |  |
| <b>Total</b>           | <b>\$ 869</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 869</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026            | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 324          | \$ 67         | \$ 207          | \$ 51         | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,281        | \$ 610        | \$ 1,601        | \$ 70         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 74           | \$ 15         | \$ 57           | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 103          | \$ 29         | \$ 71           | \$ 3          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 255          | \$ 70         | \$ 178          | \$ 7          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,037</b> | <b>\$ 791</b> | <b>\$ 2,113</b> | <b>\$ 132</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



## Station 5 Penstock Lining and Coating Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004441              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Station 5 hydroelectric facility was constructed circa 1916.

Station 5 water conveyance system conveys river water impounded upstream of Station 5 Headgates dam under the Genesee River via a steel reinforced concrete tunnel to the powerhouse for use in generation of electricity.

Station 5 Penstock Lining and Coating Upgrade Project is a project that involves the design and installation of a new reinforced liner in each of the three (3) 13-ft diameter by 100-ft long penstocks, which are original to the facility. Each penstock conveys river water from the steel reinforced concrete tunnel to each turbine-generating unit in Station 5 Powerhouse. The original lap joint riveted construction penstocks have areas that have been identified to be in poor condition and require relining to extend the operational life of the assets.

#### Project Scope:

Station 5 Penstock Lining and Coating Upgrade Project is comprised of the following activities:

1. Review of historical drawings and pictures of penstock installation and historical inspection records, if available.
2. Research of penstock lining system that can be applied to the interior of each penstock that can withstand the flows and water quality that the penstock will experience during operation of the turbine-generators.
3. Procurement of services, equipment and material to install the new lining system when the tunnel system is dewatered for other capital improvement projects and inspection.

#### Project Benefits:

Station 5 Penstock Lining and Coating Upgrade Project is a project that involves the installation of a new penstock lining system on each of the three 13-ft. diameter by 100-ft. long original steel penstocks will extend the life of the penstocks by approximately 40 to 50 years, which are integral to the water conveyance system. Proactive measures to reline and upgrade the penstocks will reduce future repairs due to the original penstocks nearing end-of-life identified in poor condition. Relining of the penstocks will also reduce the potential for damage to the turbine-generators during operation, reduce the risk to company personnel and the public, and allow for RG&E to continue reliable operation of Station 5 hydroelectric facility in support of New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Due to the location of the tunnel system and limited access and egress points, on-site confined space rescue team is required in the event there is a medical and/or rescue emergency.

2.Difficult Site Access for Construction

a.Contractor(s) to transport materials into penstock legs by one of the following means:

i.Use existing access hatch in basement of Station 5 Powerhouse or via Unit 1 penstock hatch located outside of Station 5 Powerhouse

1. Due to personnel risk of rockfall behind Station 5 Powerhouse where Unit 1 penstock hatch is located, access of personnel and material will only be considered if Station 5 Powerhouse Rockfall Stabilization Project is implemented and complete.

ii.Lowering materials into water conveyance system via surge tank riser shaft then downstream into penstocks

3.Potential impacts inside Station 5 water conveyance system

a.RG&E is planning to set up water treatment system on site for residual water that may enter Station 5 water conveyance system in a dewatered state. RG&E and contractors implementing the design will be required to develop and require all personnel entering and working in the water conveyance system to follow strict health and safety plans and procedures.

4.Application of penstock liner in difficult conditions

a.RG&E to assess feasibility of installing new lining system in existing penstock while working in a confined space with non-ideal working conditions.

5.Coordination with other projects

a.Relining of the three penstocks will require coordination with other contractors and associated activities that are planned to occur in the Station 5 water conveyance system. Other projects and activities that are planned to occur in parallel with the Penstock Relining Upgrade Project are as follows:

i.Inspection of Station 5 water conveyance system

ii.Station 5 Water Conveyance (Tunnel) System Project

iii.Station 5 Surge Tank Expansion Project

iv.Station 5 Unit 3 Turbine-Generator Isolation Valve Project

### **Risk of No Action:**

#### **Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

#### **Project Unique Risk of No Action:**

In the event of a significant leak or failure with a penstock, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of water requiring activation of RG&E's Emergency Action Plan.

2.Negative impact to ecological systems.

3.Potential damage to Station 5 powerhouse structure, equipment such as turbine-generators, controls, auxiliary systems, substation, etc. and increased risk of injury to personnel and the public.

a.RG&E is required, per the FERC's Hydropower operating license, to maintain public fishing access through the Station 5 site. The penstocks are in the general vicinity of the public recreational access.

4.Forced outage of turbine-generating units (and other associated equipment) due to not being able to convey water for generation of renewable energy.

5.RG&E being unable to comply with FERC Hydropower Operating License.

6.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

RG&E to assess and evaluate the following project alternative(s) / scope:

3. Adding protective coating to the inside and outside of the existing penstock legs to extend the service life.

RG&E currently plans to install FRP liner on the interior of each penstock. RG&E will perform hydraulic and structural analyses of penstock legs to determine the most cost-effective alternative and long-term solution.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Powerhouse Backup Generator Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004443              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgate) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The purpose of Station 5 Powerhouse Backup Generator Upgrade Project is to upgrade the existing backup generator with a new generator to support new and critical powerhouse loads during a station outage. An inspection in 2023 determined the existing generator has multiple issues and has been deemed near end-of-life.

#### Project Scope:

RG&E Station 5 Powerhouse Backup Generator Upgrade is comprised of the following activities:

- Design, specification, and supply of a new natural gas backup generator
- Conceptual and detailed design of foundations, oil containment, natural gas piping, etc. needed for installation of a new backup generator
- Removal of existing backup generator (including existing support framing and foundations)
- Installation of new backup generator, including new support framing, foundations, oil containment, natural gas piping, etc)

#### Project Benefits:

Station 5 Powerhouse Backup Generator Upgrade Project involves the upgrade of the existing backup generator due to aging, the generator being at end-of-life, and to support new critical powerhouse loads. Upgrade of the backup generator will address and support new critical powerhouse loads, and end-of-life conditions with the current generator resulting in increased operational support of critical equipment in the facility during station outages and loss of off-site power.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Risk of No Action:**

Common Risk of No Action:

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

RG&E Station 5 Powerhouse has critical loads that need to be maintained by the backup generator in the event of station outage or loss of off-site power. If the backup generator is not operational during an outage, Station 5 Powerhouse will flood, critical equipment (i.e. battery chargers) necessary to communicate and maintain communication of information would be lost resulting in a risk to personnel safety and damage to the building / structure.

**Project Alternatives:**

RG&E to assess the following project alternative(s):

1.RG&E to assess proper generator sizing for critical loads necessary to maintain critical equipment during a station outage or loss of off-site power.

2.Purchase mobile generator and use as required for critical loads

a.Requires analysis of critical Station 5 powerhouse loads and proper sizing for mobile generator, which may not be feasible and / or cost-effective.

RG&E will assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Powerhouse Rock Scaling and Stabilization Project

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-004499              | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls on the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The existing gorge wall adjacent to the Station 5 Powerhouse has shown excessive signs of scaling, significant rock fall, and continues to erode. The current degradation of the rock face represents an ongoing personnel and public safety concern. Due to the existing rockfall hazard, access on the east side of Station 5 Powerhouse is restricted preventing access to perform necessary inspection and maintenance activities.

The purpose of Station 5 Powerhouse Rockfall Stabilization Project is to implement long-term stabilization measures along the eastern (upgradient) rock face adjacent to the Station 5 Powerhouse to mitigate the safety issue.

#### Project Scope:

RG&E Station 5 Powerhouse Rockfall Stabilization Project is comprised of the following activities:

- Detailed inspection/investigation of existing rock face conditions along the eastern (upgradient) rock face adjacent to Station 5 Powerhouse.
- Conceptual and detailed design of rockfall stabilization measures
- Implementation of detailed designs to stabilize the gorge wall immediately adjacent to the Station 5 Powerhouse and surrounding areas. The new stabilization measures will span from the Station 5 surge tank outcropping to RG&E's northern property line.

#### Project Benefits:

Upon completion of RG&E Station 5 Powerhouse Rockfall Stabilization Project, the adjacent gorge wall will be stabilized and access behind the Station 5 Powerhouse will be restored. Restoring access to the east side of Station 5 Powerhouse is necessary to maintain personnel safety for performing necessary inspection and maintenance activities, reduce potential for significant rockfall, and prepare the facility for future and necessary upgrades to the underground water conveyance system.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Difficult Site Access for Construction

a.RG&E to contract specialty contractor(s) to install rockfall stabilization by repelling by ropes / harnesses from above the gorge wall.

i.RG&E to coordinate easement(s) with City of Rochester for any permanent rock anchor installation that would intrude on adjacent properties.

b.RG&E to sequence construction to stabilize gorge wall prior to allowing access below the gorge wall and behind Station 5 Powerhouse for rock clean-up / removal.

c.Contractor required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) on City of Rochester property during construction.

i.RG&E to coordinate / request permit(s) / easements / access agreements as required prior to mobilization to site.

d.RG&E to perform constructability review during design.

2.Security issues during construction

a.The construction areas around the RG&E Station 5 Surge Tank and Powerhouse has experienced trespassing in the past.

b.RG&E to consider installation of temporary security cameras and increased security patrols during off-hours to minimize trespassing on RG&E property.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

**Project Unique Risk of No Action:**

In the event of a failure of the existing gorge wall, it could potentially result in the following consequences including but not limited to:

1.Increased risk of injury or loss of life to company personnel and / or public.

2.Increased risk of damage to existing Station 5 Powerhouse.

3.Forced outage of turbine-generating units in Station 5 Powerhouse (and other associated equipment) depending on extent of damage to underground water conveyance infrastructure and/or powerhouse damage.

4.RG&E being unable to comply with FERC Hydropower Operating License.

**Project Alternatives:**

RG&E has assessed and evaluated the following project alternative(s) / scope:

1.Scaling of Rock Slopes and Removal of Spoils

2.Rock Catchment Fences

3.Wire Mesh Slope Protection and Wire Mesh Drape based on previous rock fall protection project around Station 5 Surge Tank.

RG&E currently plans to implement Alternative #3 – Wire Mesh Slope Protection and Wire Mesh Drape as recommended by an Independent Consultant (IC), but will assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.



Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|---------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 343          | \$ 39         | \$ 28         | \$ 55         | \$ 85           | \$ 137        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 3,690        | \$ 255        | \$ 325        | \$ 355        | \$ 2,605        | \$ 150        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 383          | \$ 83         | \$ 60         | \$ 60         | \$ 120          | \$ 60         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 148          | \$ 17         | \$ 17         | \$ 16         | \$ 91           | \$ 6          | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 397          | \$ 50         | \$ 49         | \$ 47         | \$ 231          | \$ 21         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,960</b> | <b>\$ 443</b> | <b>\$ 479</b> | <b>\$ 533</b> | <b>\$ 3,131</b> | <b>\$ 374</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Station 5 Surge Tank Expansion Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-001231              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Station 5 hydroelectric facility was constructed circa 1916.

Station 5 water conveyance system conveys river water impounded upstream of Station 5 Headgates dam under the Genesee River via a steel reinforced concrete tunnel to the powerhouse for use in generation of electricity. The surge tank is part of the water conveyance system and was replaced circa 2003.

During relining of Station 5 water conveyance system between 2007 and 2012, hydraulic modeling of the new tunnel profile revealed that the existing surge tank could potentially overtop if an electrical disturbance, resulting in all three turbine-generating units tripping off-line, occurred during operation of the hydroelectric facility at full load (46.0 MW). Overtopping of the (50-ft diameter x 55-ft high) surge tank would result in potential harm to personnel around the surge tank along with damage to infrastructure around the facility, such as electrical distribution circuits from Station 5 powerhouse substation and the 13-ft diameter water conveyance penstocks located below the surge tank.

The Station 5 Surge Tank Expansion Project involves updating of the water conveyance hydraulic model, determining the height to raise the tank walls to prevent overtopping when operating a full load and all three turbine-generating units trip off-line, design and implementation of the required modification to raise the tank height. Output capacity of Station 5 hydroelectric facility is presently curtailed to prevent overtopping of the tank.

#### Project Scope:

Station 5 Surge Tank Expansion Project is comprised of the following activities:

- Detailed inspection and analysis of the existing surge tank structure,
- Hydraulic analysis of the surge tank structure to confirm the required height (extension) of the surge tank to prevent overtopping with the hydroelectric facility operating a full load (46.0 MW),
- Financial analysis to determine cost effective solution to address the tank overtopping issue – adding to top of existing surge tank or removing existing surge tank and adding bottom ring to raise surge tank.
- Conceptual and detailed design based on most cost-effective solution,
- Procurement of services, equipment, and material to implement the detailed designs.

#### Project Benefits:

Station 5 Surge Tank Expansion Project is a project to raise the height of the existing surge tank to protect personnel, the public and underground and internal infrastructure in Station 5 Powerhouse in the event of a load rejection when operating Station 5 hydroelectric facility at full load. Upon completion of the project, Station 5 hydroelectric facility will be restored to safe (full) operating capacity. Restoring operational capacity of Station 5 will increase energy production at the facility, which supports New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability.

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Due to the location of the tunnel system and limited access and egress points, on-site confined space rescue team is required in the event there is a medical and/or rescue emergency.

2.Crane Placement – Site Access Constraints

a.All crane vendor(s) to develop Critical Lift Plan(s) and include crane specifications, crane pick distances, lift weights, subsurface bearing conditions, etc.

3.Difficult Site Access for Construction

a.Contractors(s) to utilize existing access stair and / or crane for transporting materials to existing surge tank foundation.

4.Coordination with other projects

a.Raising the height of the surge tank will require coordination with other contractors and associated activities that are planned to occur in Station 5 water conveyance system. Other projects and activities that are planned to occur in parallel with the Surge Tank Expansion Project are as follows:

i.Inspection of Station 5 water conveyance system

ii.Station 5 Penstock Relining Upgrade Project

iii.Station 5 Water Conveyance (Tunnel) System Project

iv.Station 5 Unit 3 Turbine-Generator Isolation Valve Project

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

**Project Unique Risk of No Action:**

By neglecting to perform the required surge tank expansion at Station 5, RG&E is exposed to additional risk of damage to the facility structure, including internal and external infrastructure, and additional safety risk to the public and personnel working on / around the surge tank and powerhouse. RG&E currently does not operate all three (3) turbine-generators at full load to reduce risk, which reduces available clean renewable energy capacity from New York State's renewable energy portfolio.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Remove existing surge tank from existing foundation and install new bottom ring on surge tank to raise tank height.

2.Add top ring(s) to existing surge tank to raise height and reinforce existing surge tank structure for additional dead weight.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026          | 2027          | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|---------------|---------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 296          | \$ -        | \$ 30         | \$ 59         | \$ 84           | \$ 123        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 2,736        | \$ -        | \$ 355        | \$ 280        | \$ 1,956        | \$ 145        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 300          | \$ -        | \$ 60         | \$ 60         | \$ 120          | \$ 60         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 116          | \$ -        | \$ 18         | \$ 14         | \$ 78           | \$ 6          | \$ -        | \$ -        |
| # Materials            | \$ 200          | \$ -        | \$ -          | \$ -          | \$ 200          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 308          | \$ -        | \$ 52         | \$ 40         | \$ 196          | \$ 20         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,957</b> | <b>\$ -</b> | <b>\$ 515</b> | <b>\$ 453</b> | <b>\$ 2,633</b> | <b>\$ 355</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Station 5 Unit 1, Unit 2 & Unit 3 Turbine-Generator Guide Bearing Water Filtration Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-4414-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 5 Unit 1 and Unit 2 turbine-generators were originally installed circa 1917, and Unit 3 turbine-generator was originally installed circa 1927. All three turbine-generators use domestic water for cooling of lubricating oil and bearing lubrication during generation of electricity. The purpose of Station 5 Unit 1, 2 & 3 Turbine-Generator Water Filtration Upgrade Project is to transition from the current use of domestic water and utilize water from the Genesee River to support the generation of electricity.

#### Project Scope:

Station 5 Unit 1, Unit 2, and Unit 3 Turbine-Generator Water Filtration Upgrade Project involves the following activities:

- Conduct a study to review current turbine-generator operational and water quality requirements to minimize long-term turbine component and lubricating oil system wear during operation and future water demand requirements,
- Conceptual and detailed design of new water filtration system and associated electric and control requirements.
- Contracted services, equipment, and material to modify and / or install new water filtration system(s) to integrate into the existing Unit 1, Unit 2, and Unit 3 turbine-generators.
- Commissioning of the water filtration system and evaluate the performance of the turbine-generating units upon completion of the upgrade.

#### Project Benefits:

RG&E's Station 5 currently relies on domestic water to support generation of electricity. Completion of Station 5 Unit 1, Unit 2 & Unit 3 Turbine-Generator Water Filtration Upgrade Project will allow for the use of river water and reduce the current and significant reliance on domestic water to support generation of electricity. By doing so, RG&E will maintain continued reliable operation of Station 5 hydroelectric facility in support of New York State's Clean Energy Goals and initiatives. Station 5 hydroelectric facility presently uses an estimated 6.2M gallons of domestic water annually to support generation.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Corrosion and scaling

a.RG&E to perform condition assessment / inspection of existing cooling water system to confirm functionality. RG&E to ensure new water filtration design considers corrosion protection.

2.Water quality issues of cooling water system

a.RG&E to analyze / consider existing river water composition during design of new / upgraded water filtration system.

3.Environmental regulations

a.RG&E to develop permitting matrix and assess environmental effects (if any) of the new / upgraded water filtration system.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure, loss or reduced supply of domestic water with the current cooling water system, it could potentially result in the following consequences including but not limited to:

1.Potential damage to the turbine-generating unit(s), and increased risk of injury to personnel.

2.Forced outage of turbine-generating units (and other associated equipment)

3.RG&E unable to comply with operational requirements of FERC Hydropower Operating License.

4.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Water-to-Oil Conversion: Converting the existing turbine guide bearings from water-lubricated to oil-lubricated systems.

2.Magnetic Filtration: Using magnetic filtration systems to remove suspended particles from the lubricating water.

If RG&E determines there is risk to personnel safety and operation of the facility in its current condition, RG&E will suspend operation of the turbine-generating unit(s) as an alternative to implementing the required upgrades.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

## 2. Based on multiple sources:

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Unit 3 Turbine-Generator New Turbine Isolation Valve

### PROJECT INFORMATION

|                                     |                                               |                                               |                                        |                                    |
|-------------------------------------|-----------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-3090-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation    | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Unit 3 turbine-generator has a generating capacity of 18.0MW and was installed circa 1927. The original turbine isolation valve, which is used to isolate river water from entering Unit 3 turbine-generator scroll case, was removed and minor upgrades performed circa 2009. The turbine isolation valve is closed and scroll case dewatered for the safety of personnel when performing internal inspection and maintenance on the turbine-generator.

The purpose of Station 5 Unit 3 Turbine-Generator New Turbine Isolation Valve Project is to procure and install a new 11.5-ft diameter valve. In 2018, during isolation of Unit 3 turbine-generator, personnel were not able to successfully seal the valve to prevent water from entering the turbine scroll case. Water flows leaking around the existing valve seat and seals are significant enough that prevent safe access of personnel to perform inspection and maintenance on Unit 3 turbine runner in the turbine scroll case.

#### Project Scope:

RG&E Station 5 Unit 3 Turbine-Generator Turbine Isolation Valve Project involves the following activities:

- Design and fabrication of new 11.5-ft diameter valve,
- Personnel, equipment, and material to isolate and dewater the existing Station 5 water intake tunnel, including the required water treatment services,
- Personnel, equipment, and materials to remove the existing turbine isolation valve and installation of a new turbine isolation valve,
- Commission the new turbine isolation valve, rewater the intake tunnel and return the turbine-generator to service.

#### Project Benefits:

Installation of a new 11.5-ft diameter turbine isolation valve for Unit 3 turbine-generator will re-establish a safe isolated work area, by preventing water from entering the turbine scroll case, for personnel to safely access the turbine scroll case for inspection and maintenance activities. Preventive and proactive maintenance and inspection of Unit 3 turbine-generator improves personnel and equipment safety, operational performance and reliability, which supports New York State's Clean Energy Goals and initiatives.



**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Due to the location of Unit 3 Turbine-Generator turbine isolation valve and limited access and egress points, on-site confined space rescue team is required in the event there is a medical and/or rescue emergency.

2.Unknown damage / condition to existing Unit 3 turbine isolation valve (TIV) components

a.RG&E to perform detailed condition assessment of existing TIV components (penstock, foundations, guides, stems, etc.), prior to going to bid to mitigate / reduce risk during disassembly and removal.

3.Alignment Issues

a.Prior to and during removal of existing TIV, RG&E to perform survey to baseline existing penstock / TIV component relationship to reduce risk of issues during final fit-up, alignment and installation of the new TIV.

4.Material Compatibility

a.RG&E to analyze / test / verify existing penstock / TIV system components to verify new TIV and associated components are compatible with surrounding material.

5.Coordination with other projects

a.Installation of the new turbine isolation valve for Unit 3 turbine-generator will require coordination with other contractors and associated activities that are planned to occur in Station 5 water conveyance system. Other projects and activities that are planned to occur in parallel with Station 5 Turbine-Generator Isolation Valve Project are as follows:

i.Inspection of Station 5 water conveyance system

ii.Station 5 Penstock Relining Upgrade Project

iii.Station 5 Surge Tank Expansion Project

iv.Station 5 Water Conveyance (Tunnel) System Project

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

**Project Unique Risk of No Action:**

In the event of a failure of the existing Unit 3 TIV, it could result in the following consequences, including but not limited to:

1.Potential damage to equipment (turbine-generators, controls, auxiliary systems, etc.) and increased risk of injury to personnel.

2.Forced outage(s) of turbine-generating units (and other associated equipment).

3.Inability to safely isolate Unit 3 turbine-generator in the event of an emergency or required to perform inspection and maintenance on Unit 3 turbine runner.

4.RG&E being unable to comply with FERC Hydropower Operating License.

RG&E to assess and evaluate the following project alternative(s) / scope:

- a. RG&E will require further input from TIV vendor(s) and / or design engineers on the feasibility of Alternative #1.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

- b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

- c.analogous cost estimated from similar projects,

- d. appropriate project support costs,

- e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Station 5 Water Conveyance (Tunnel) System Project

### PROJECT INFORMATION

|                                     |                                               |                                                |                                        |                                    |
|-------------------------------------|-----------------------------------------------|------------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>9302-1783-1110-RGE-G    | <b>Charge Code:</b><br>Electric Generation     | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Station 5 hydroelectric facility was constructed circa 1916.

Station 5 water conveyance system conveys river water impounded upstream of Station 5 Headgates dam under the Genesee River via a steel reinforced concrete tunnel to the powerhouse for use in generation of electricity.

Station 5 Water Conveyance (Tunnel) System Project involves the design of a new steel reinforced cast-in-place concrete liner to reline the existing liner transition from the riverbed, located under Station 5 Rackhouse (water intake), into the water conveyance systems intake shaft (20-ft diameter), and transition of the surge tank riser shaft (19-ft diameter) into the surge tank foundation. The project also addresses miscellaneous construction joints throughout the 1,400-ft long by 16-ft diameter power tunnel, which is part of the water conveyance system.

#### Project Scope:

Station 5 Water Conveyance (Tunnel) System Project is comprised of the following activities:

- Design and implementation of water treatment system to dewater the water conveyance system,
- Design and installation of temporary infrastructure (lighting, compressed air, air monitoring systems, etc.) and equipment inside and outside of the water conveyance system after dewatering has occurred and in support of the work activities.
- Review of historical drawings and pictures regarding condition of areas that require relining.
- Detailed design of transition areas requiring relining.
- Procurement of services, equipment and material to implement the detailed designs.

#### Project Benefits:

Station 5 Water Conveyance (Tunnel) System Project is a project to install a new steel reinforced cast-in-place concrete at the water conveyance systems transition from the riverbed to the intake shaft, from the surge tank riser shaft to surge tank foundation and miscellaneous construction joints throughout the power tunnel system. Implementation of these upgrades will extend the life of the water conveyance system by a minimum of 50 years and are proactive measures that will reduce the potential for damage to the turbine-generators during operation. These necessary upgrades will allow for RG&E to continue reliable operation of the three hydroelectric turbine-generators at Station 5 hydroelectric facility in support of New York State's Clean Energy Goals and initiatives.

### **Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

#### **Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

#### **Project Unique Risks:**

1.Due to the location of the tunnel system and limited access and egress points, on-site confined space rescue team is required in the event there is a medical and/or rescue emergency.

2.Difficult Site Access for Construction

a.Contractor(s) to transport materials into tunnel by one of the following means:

i.Use existing access hatch in basement of Station 5 Powerhouse or via Unit 1 penstock hatch located outside of Station 5 Powerhouse.

1.Due to personnel risk of rockfall behind Station 5 Powerhouse where Unit 1 penstock hatch is located, access of personnel and material will only be considered if Station 5 Powerhouse Rockfall Stabilization Project is implemented and complete.

ii.Lowering materials into water conveyance system via surge tank riser shaft

iii.Floating a barge with crane and associated equipment for work activities in and around the Station 5 Rack House and intake shaft.

b.Contractor required to set up temporary infrastructure (lighting, electrical, compressed air, etc.) to support construction activities in the water conveyance system.

c.RG&E to perform constructability review during design process.

3.Potential impacts inside Station 5 water conveyance system

a.RG&E is planning to set up water treatment system on site for residual water that may enter Station 5 water conveyance system in a dewatered state. RG&E and contractors implementing the design will be required to develop and require all personnel entering and working in the water conveyance system to follow strict health and safety plans and procedures.

4.Installation of reinforced concrete liner in difficult conditions

a.RG&E to assess feasibility of installing liner while working in a confined space with non-ideal working conditions.

5.Coordination with other projects

a.Relining of the transition between the riverbed and from the surge tank to the surge tank foundation will require coordination with other contractors and associated activities that are planned to occur in Station 5 water conveyance system. Other projects and activities that are planned to occur in parallel with Station 5 Water Conveyance (Tunnel) System Project are as follows:

i.Inspection of Station 5 water conveyance system

ii.Station 5 Penstock Relining Upgrade Project

iii.Station 5 Surge Tank Expansion Project

iv.Station 5 Unit 3 Turbine-Generator Isolation Valve Project

**Risk of No Action:**

Common Risk of No Action:

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

Project Unique Risk of No Action:

In the event of a failure with the tunnel liner transition area(s) from the riverbed to the intake shaft and / or from the surge tank riser shaft to the surge tank foundation, it could potentially result in the following consequences including but not limited to:

1. Potential damage to the turbine-generating equipment and increased risk of injury to personnel resulting in a forced outage of turbine-generating unit(s) (and other associated equipment)
2. RG&E being unable to comply with FERC Hydropower Operating License.
3. RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1. Implementation of fiber reinforced polymer (FRP) and / or shotcrete liner at tunnel liner transition areas requiring relining (instead of reinforced concrete)
  - a. Requires analysis by design engineer to determine feasibility, cost-effectiveness, and environment that the liner will be exposed to during high water flow conditions with facility running at full capacity (46.0 MW). A cost-benefit analysis will be conducted to determine the most cost-effective long-term solution.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025          | 2026          | 2027            | 2028            | 2029          | 2030        | 2031        |
|------------------------|------------------|---------------|---------------|-----------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 742           | \$ 33         | \$ 84         | \$ 123          | \$ 226          | \$ 275        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 9,280         | \$ 255        | \$ 475        | \$ 3,965        | \$ 4,315        | \$ 270        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 365           | \$ 65         | \$ 60         | \$ 120          | \$ 120          | \$ -          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 349           | \$ 16         | \$ 23         | \$ 155          | \$ 147          | \$ 8          | \$ -        | \$ -        |
| # Materials            | \$ -             | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 880           | \$ 45         | \$ 65         | \$ 388          | \$ 365          | \$ 18         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 11,616</b> | <b>\$ 414</b> | <b>\$ 707</b> | <b>\$ 4,751</b> | <b>\$ 5,173</b> | <b>\$ 571</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RG&E Station 5 Glycol Heating Upgrade Project

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-005674              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2026          | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls on the Genesee River that is used to impound water used for generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

Station 5 Glycol Heating Upgrade Project is a project to upgrade and expand the current glycol heating system at Station 5 Headgates, which is used to reduce ice buildup on key gate components, such as the rub plates, breastwall seal, and concrete sill. The existing glycol heating boilers at Station 5 Headgates are at capacity and will require an upgrade to provide the necessary additional de-icing capacity to mitigate ice formation on the spillgates at Station 5 Headgates.

In January 2018, the hinges of two adjacent crest gates (Gate 4A & 4B) failed during operation as a result of ice accumulation from extremely cold temperatures in the region resulting in activation of RG&E's Emergency Action Plan, lowering of Station 5 impoundment and ceasing generation at Station 5 Powerhouse. RG&E has identified the need to install additional glycol heat loops in each concrete gate sill at Spillgates 2 and 5 to reduce anchor ice buildup and mitigate risk of future gate failure.

#### Project Scope:

Station 5 Glycol Heating Upgrade is comprised of the following activities:

- Detailed inspection and assessment of the existing conditions of the Station 5 glycol heating boilers and system.
- Conceptual and detailed design of a new and expanded glycol heating system / boiler and additional piping installation / expansion.
- Implementation of detailed designs to address the removal of the existing glycol heating system / boilers and installation of a new boiler(s) and associated glycol piping.

#### Project Benefits:

RG&E Station 5 Glycol Heating Upgrade Project is a proactive measure to upgrade the current glycol heating system and design at Station 5 Headgates to mitigate ice accumulation on the spillgates and reduce the potential for future failure during gate operation. Installation of the new glycol heating system will allow RG&E to maintain operational compliance with FERC's Hydropower operating license and continue to generate renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.Reliance on Electric Heaters vs Natural Gas Heaters

a.RG&E to assess benefits and risks with each glycol heating option (natural gas or electric heaters) to determine the best alternative for long-term reliable operation.

2.Issues during Commissioning

a.Due to the complexity involved of performing a glycol heating system upgrade, RG&E to develop detailed commissioning plan during design and onboard Commissioning Engineer familiar with hydroelectric facilities and glycol heating systems.

3.Space Constraints in RGE Station 5 Headgates Control House

a.The Headgate Control House has limited available floor space for new equipment. RG&E to assess feasibility of installing new equipment in the existing Headgate Control House facility.

4.Working in close proximity to existing public access bridge

a.RG&E to assess need to potentially close public access bridge / walkway during construction for public safety and to facilitate construction activities.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

**Project Unique Risk of No Action:**

In the event of lack of or failure of the existing glycol heating units leading to ice accumulation and failure of any spillgate at Station 5 Headgates, it could potentially result in the following consequences including but not limited to:

1.Uncontrolled release of flows downstream of dam resulting in activation of RG&E's Emergency Action Plan.

2.Negative impact to ecological systems.

3.Increased risk of injury to personnel and / or public in and around Station 5 Headgates and downstream of the facility.

4.Forced outage of turbine-generating units at Station 5 Powerhouse (and other associated equipment) due to not being able to impound water for generation of renewable energy.

5.RG&E being unable to comply with FERC Hydropower Operating License.

6.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Replacement and/or addition of an electric glycol heating system boiler to the current / future glycol heating system.

2.Replacement and / or addition of a natural gas glycol heating boiler to the current / future glycol heating system..

3.RG&E's Hydro Winter Operations Procedures

a.RG&E is currently using winter operations measures to monitor / reduce ice buildup at the RG&E Station 5 Headgates to reduce risk of gate failure during normal operations. RG&E needs to upgrade the glycol heating system to expand the deicing capabilities to mitigate risk of future failure during gate operation.

RG&E plans on implementing Alternative #2 (new natural gas glycol heating boiler) and will further assess all project alternatives during project initiation in accordance with the Avangrid Networks Quality Management System.



Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026          | 2027          | 2028            | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|---------------|---------------|-----------------|---------------|-------------|-------------|
| # AFUDC                | \$ 176          | \$ -        | \$ 18         | \$ 35         | \$ 52           | \$ 71         | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 1,267        | \$ -        | \$ 215        | \$ 120        | \$ 862          | \$ 70         | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 180          | \$ -        | \$ 30         | \$ 30         | \$ 90           | \$ 30         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 64           | \$ -        | \$ 11         | \$ 11         | \$ 39           | \$ 3          | \$ -        | \$ -        |
| # Materials            | \$ 250          | \$ -        | \$ -          | \$ 100        | \$ 150          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ 166          | \$ -        | \$ 30         | \$ 27         | \$ 99           | \$ 10         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,103</b> | <b>\$ -</b> | <b>\$ 303</b> | <b>\$ 324</b> | <b>\$ 1,292</b> | <b>\$ 184</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Station 5 Rack Raker Upgrade

### PROJECT INFORMATION

|                                     |                                               |                                            |                                        |                                    |
|-------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                | <b>Project ID:</b><br>PRJ-005602              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Generation | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>H1 2027          | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) used for impounding water for use in generation of renewable hydroelectric energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy. Station 5 hydroelectric facility was constructed circa 1916.

The current intake trash rack raker at Station 5 hydroelectric facility was installed circa 1997. The rack raker is located inside the Rackhouse at the Station 5 Headgates where 16 intake bays, each spanning a width of 10 feet and depth of approximately 22 feet screen river water from debris entering the water intake tunnel and damaging the turbine-generating units at Station 5 Powerhouse.

The purpose of Station 5 Rack Raker Upgrade Project is to upgrade the current rack raker with state-of-the-art equipment and controls to bring it to current standards. Replacement parts for the current rack raker are difficult with the equipment difficult to operate. A new rack raker will improve operational reliability and personnel safety.

#### Project Scope:

RG&E Station 5 Rack Raker Upgrade Project is comprised of the following activities:

- Design, supply and installation of a new rack raker for RG&E Station 5 hydroelectric facility
- Conceptual and detailed design of foundations, raker rails, electrical supply, and controls, etc. needed for installation and operation of the new rack raker
- Removal of existing rack raker (including existing rails) and associated infrastructure
- Installation of new rack raker, including new foundations, rails, grout, electrical supply, controls, etc.)

#### Project Benefits:

Station 5 Rack Raker Upgrade Project involves the installation of a new rack raker to improve cleaning of the intake trash racks, handling of debris removed from the river, and increased personnel safety necessary to support generation at Station 5 hydroelectric facility and support New York State's Clean Energy Goals and initiatives.

**Project Risks and Mitigation Plan:**

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

**Common Project Risks:**

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability.

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

**Project Unique Risks:**

1.New Rack Raker Fabrication / Delivery Lead Times

a.Fabrication of new rack rakers can take approximately 18-24 months to fabricate / supply.

b.RG&E to initiate procurement of new rack raker prior to construction and installation request for proposal (RFP) to ensure new rack raker arrives on site prior to General Contractor mobilization.

2.Unknown damage / condition to existing rack raker rails / foundation

a.RG&E to perform detailed condition assessment and survey of existing Station 5 rackhouse floor and rack raker foundation prior to design and bid to mitigate / reduce risk.

3.Discovery of unforeseen regulated building materials (asbestos, lead, etc.) during construction

a.RG&E will mitigate risk by collecting building samples and testing for regulated building materials in advance of or during design to identify need for abatement during construction.

**Risk of No Action:****Common Risk of No Action:**

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or "in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10©.

**Project Unique Risk of No Action:**

With Station 5 rack raker presently not operating, the following would occur if no action were taken to:

1.RG&E would be required to manually rake and remove debris from river, as required, leading to potential personnel injury. Due to the Genesee River having excessive debris, hand raking is not an option when all three (3) turbine-generator units are running at full load.

a.RG&E may be required to decrease generation or be forced into an outage if staff is unavailable or unable to remove the accumulated debris.

2.RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Repairs to the existing rack raker on site

a.RG&E reviewed this alternative and determined a full rebuild and replacement of the hydraulic system is required, including, but not limited to new hydraulic power unit (HPU), new hydraulic valves and cylinders, new raker bucket, and new joystick controls.

b.This alternative is not recommended as the existing rack raker vendor, HTS, is no longer in business and the supply of replacement parts is difficult.

2.No installation of a new or upgraded rack raker

a.Requires hand raking on site, with long hours during high flow seasons and during the winter season, operators would work in adverse temperatures and be exposed to increased injury.

b.Generation production from the facility will be less efficient due to the buildup of trash on the intake trashracks.

c.All RG&E hydroelectric facilities will become affected by having to manually rake racks this due to Hydro Operations personnel being occupied working on raking Station 5

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.
2. Based on multiple sources:
  - a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
  - b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
  - c. analogous cost estimated from similar projects,
  - d. appropriate project support costs,
  - e. applicable overheads and allocations.
3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029            | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 298          | \$ -        | \$ -        | \$ 31         | \$ 63         | \$ 108          | \$ 96         | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 1,117        | \$ -        | \$ -        | \$ 240        | \$ 95         | \$ 712          | \$ 70         | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 180          | \$ -        | \$ -        | \$ 30         | \$ 30         | \$ 90           | \$ 30         | \$ -        |
| # Internal, Overheads  | \$ 85           | \$ -        | \$ -        | \$ 21         | \$ 31         | \$ 31           | \$ 3          | \$ -        |
| # Materials            | \$ 1,000        | \$ -        | \$ -        | \$ 200        | \$ 600        | \$ 200          | \$ -          | \$ -        |
| # Overheads - External | \$ 196          | \$ -        | \$ -        | \$ 48         | \$ 62         | \$ 77           | \$ 9          | \$ -        |
| <b>Total</b>           | <b>\$ 2,877</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 570</b> | <b>\$ 881</b> | <b>\$ 1,218</b> | <b>\$ 209</b> | <b>\$ -</b> |

[illegible]

## S5 U2 Wicket Gate Bushing Upgrade

### PROJECT INFORMATION

|                                          |                                               |                                            |                                        |                                       |
|------------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric | <b>Project ID:</b><br>PRJ-001536              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Generation      | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>12/31/2029       | <b>In-Service Date:</b><br>12/31/2029 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water for use in generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The purpose of Station 5 Unit 2 Wicket Gate Bushing Upgrade Project is to upgrade the current wicket gate bushing and associated operating component material (i.e. operating ring, wicket gate arms, etc.) with current technology resulting in increased operational reliability and efficiency.

#### Project Scope:

RG&E Station 5 Unit 2 Turbine Wicket Gate Bushing Upgrade Project involves the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly,
- Inspection and measurement of all turbine (critical) components,
- Upgrade of turbine assembly components, as deemed necessary, such as head cover and bottom ring wicket gate bushing material, and sealing surfaces,
- Installation of new vibration monitoring system,
- Reassembly and alignment of turbine-generator,
- Commission turbine-generator and return to service.

#### Project Benefits:

RG&E Station 5 Unit 2 Turbine Wicket Gate Bushing Upgrade will eliminate current operational issues with the current wicket gate bushing material, restore and extend the life of the asset returning 13.59 MW of reliable renewable electric generation to service. Restoring reliable operation of the turbine-generating unit is necessary to support New York State's Clean Energy Goals and initiatives.

#### Project Risks and Mitigation Plan:

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

Common Project Risks:

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

Project Unique Risks:

1.Unknown damage / condition to existing turbine-generator components

a.RG&E to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Alignment Issues

a.Prior to and during disassembly, RG&E to perform survey to baseline existing turbine-generator components and alignment to reduce risk of issues during final fit-up and alignment.

3.Material Compatibility

a.RG&E to analyze / test / verify existing system components to verify new bushing material is compatible with the operating environment.

**Risk of No Action:**

Common Risk of No Action:

RG&E hydroelectric facilities (active) are required to be operated and maintained in accordance with the Hydropower license issued by the Federal Energy Regulatory Commission (FERC). In accordance with Part 6.4 of Title 18 of the Code of Federal Regulation (18 CFR § 6.4), if a hydroelectric facility does not generate for a period of three (3) years, "the Commission will deem it to be the intent of the licensee or exemptee to surrender the license..." RG&E is responsible to report when a project or project feature is inoperable or in poor condition, including a plan and schedule to return it to safe operational condition per the Federal Power Act, Section 10(c).

Project Unique Risk of No Action:

In the event of a failure of existing wicket gate bushing material, it could result in the following consequences including but not limited to:

1. Potential damage to equipment (turbine-generator, controls, auxiliary systems, etc.) and increased risk of injury to personnel.
2. Forced outage of turbine-generating unit (and other associated equipment).
3. RG&E unable to comply with operational requirements of FERC's Hydropower Operating License.
4. RG&E unable to generate clean renewable energy in support of New York State's Clean Energy Goals and initiatives.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1. Composite or Self-Lubricating Bushings

a. RG&E to assess feasibility and cost-effectiveness of installing composite or self-lubricating bushings.

If RG&E determines there is risk to personnel safety and operation of Unit 2 turbine-generating unit in its current condition, RG&E will suspend operation of the turbine-generating unit as an alternative to implementing the required upgrades.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1. Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2. Based on multiple sources:

- a. Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,
- b. budgetary quotes from suppliers for necessary materials, equipment, and services (when available),
- c. analogous cost estimated from similar projects,
- d. appropriate project support costs,
- e. applicable overheads and allocations.

3. Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2026        | 2027        | 2028          | 2029          | 2030          |             |             |
|------------------------|---------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|
| # AFUDC                | \$ 128        | \$ -        | \$ -        | \$ 17         | \$ 34         | \$ 76         |             |             |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |             |             |
| # External Services    | \$ 641        | \$ -        | \$ -        | \$ 185        | \$ 428        | \$ 28         |             |             |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |             |             |
| # Internal, Labor      | \$ 91         | \$ -        | \$ -        | \$ 18         | \$ 73         | \$ -          |             |             |
| # Internal, Overheads  | \$ 22         | \$ -        | \$ -        | \$ 7          | \$ 15         | \$ 1          |             |             |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |             |             |
| # Overheads - External | \$ 62         | \$ -        | \$ -        | \$ 18         | \$ 42         | \$ 2          |             |             |
| <b>Total</b>           | <b>\$ 943</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 246</b> | <b>\$ 591</b> | <b>\$ 106</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

## S5 U3 Wicket Gate Bushing Upgrade

### PROJECT INFORMATION

|                                          |                                               |                                            |                                        |                                       |
|------------------------------------------|-----------------------------------------------|--------------------------------------------|----------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric | <b>Project ID:</b><br>PRJ-005601              | <b>Charge Code:</b><br>Electric Generation | <b>Project Sponsor:</b><br>Dick, David | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Generation      | <b>Rate Case Category</b><br>Hydro-Generation | <b>Project Stage:</b><br>IP1 Originate     | <b>Start Date:</b><br>12/31/2029       | <b>In-Service Date:</b><br>12/31/2029 |

#### Project description:

RG&E Station 5 Hydroelectric Project (FERC Project No. P-2583) is located on the Genesee River in the City of Rochester, New York. The facility is unstaffed with three turbine-generating units that are remotely monitored and controlled with a total facility capacity of 46.0 MW. The Project has a low hazard dam (Station 5 Headgates) located at the Middle Falls of the Genesee River that is used to impound water for use in generation of renewable energy. The facility is a run-of-river operation, which means that a consistent river elevation is maintained, while utilizing the natural flow of the river to generate clean renewable hydroelectric energy.

The purpose of Station 5 Unit 3 Wicket Gate Bushing Upgrade Project is to upgrade the current wicket gate bushing material and associated operating component material (i.e. operating ring, wicket gate arms, etc.) with current technology resulting in increased operational reliability and efficiency.

#### Project Scope:

RG&E Station 5 Unit 3 Turbine Wicket Gate Bushing Upgrade Project involves the following activities:

- Personnel, equipment, and material to disassemble turbine-generator assembly,
- Inspection and measurement of all turbine (critical) components,
- Upgrade of turbine assembly components, as deemed necessary, such as head cover and bottom ring wicket gate bushing material, and sealing surfaces,
- Installation of new vibration monitoring system,
- Reassembly and alignment of turbine-generator,
- Commission turbine-generator and return to service.

#### Project Benefits:

RG&E Station 5 Unit 3 Turbine Wicket Gate Bushing Upgrade will eliminate current operational issues with the current wicket gate bushing material, restore and extend the life of the asset and returning 18.0 MW of reliable renewable electric generation to service. Restoring reliable operation of the turbine-generating unit is necessary to support New York State's Clean Energy Goals and initiatives.

#### Project Risks and Mitigation Plan:

Large Capital projects such as this contain many inherent risks and RG&E has a process for managing and mitigating these risks, which is explained below. There are several primary risks which are common to all RG&E hydroelectric sites and projects. Each hydroelectric facility and project also has its own unique risks specific to the project site, location and/or project scope. Listed below are the main risks and the mitigation plan.

Common Project Risks:

1.Availability of Engineering, Project Management, Regulatory and Construction resources.

a.Mitigation plan: 1) coordinate/consolidate resources with other projects to optimize resource availability, 2) contract additional resources as necessary. 3) Advance project initiation, if possible, to capitalize on resource availability

2.Equipment and Material Lead times.

a.Mitigation plan: 1) Proactive communication with resource(s) regarding availability / interest, which aides in schedule development / management, 2) Identify alternate equipment suppliers and solutions, if possible, 3) identify equipment and material that will be critical path to the project and prioritize procurements to ensure material onsite when required.

3.Unforeseen conditions encountered during Construction.

a.Mitigation plan: 1) conduct on-site investigative studies and historical document review in advance of and/or during conceptual engineering to reduce unknowns / project variables including but not limited to field surveys and inspections, bathymetric surveys, dive inspections, plant condition assessments, geo-technical studies, etc.

4.Reduction of, or Insufficient Project Funding

a.Mitigation Plan: 1) Conduct routine construction cost estimate updates throughout project cycle 2) Submit required project funding request through established Avangrid Networks approval process with proper supporting documentation.

5.Adverse River / Weather Conditions:

a.Mitigation Plan: 1) Review historical river flow information, if available, and adjust project schedule, if possible, 2) Add contingency into project schedule(s) to account for unexpected high river flows, major storm events, such as hurricanes, that would delay construction, 3) Ensure contingency plan is developed and ready to enact in case of major storm event.

Project Unique Risks:

1.Unknown damage / condition to existing turbine-generator components

a.RG&E to perform detailed condition assessment of existing components, including potential disassembly of the unit prior to going to bid to mitigate / reduce risk.

2.Alignment Issues

a.Prior to and during disassembly, RG&E to perform survey to baseline existing turbine-generator components and alignment to reduce risk of issues during final fit-up and alignment.

3.Material Compatibility

a.RG&E to analyze / test / verify existing system components to verify new bushing material is compatible with the operating environment.



**Risk of No Action:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Composite or Self-Lubricating Bushings

a.RG&E to assess feasibility and cost-effectiveness of installing composite or self-lubricating bushings.

If RG&E determines there is risk to personnel safety and operation of Unit 3 turbine-generating unit in its current condition, RG&E will suspend operation of the turbine-generating unit as an alternative to implementing the required upgrades.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Project Alternatives:**

RG&E to assess and evaluate the following project alternative(s) / scope:

1.Composite or Self-Lubricating Bushings

a.RG&E to assess feasibility and cost-effectiveness of installing composite or self-lubricating bushings.

If RG&E determines there is risk to personnel safety and operation of Unit 3 turbine-generating unit in its current condition, RG&E will suspend operation of the turbine-generating unit as an alternative to implementing the required upgrades.

RG&E to assess all project alternatives upon project initiation in accordance with Avangrid Networks Quality Management System.

**Basis for Project Estimates**

Project cost estimates are:

1.Comprised of required internal labor, external resources (project management, materials, internal / external engineering, permitting, construction costs, etc.), and company overheads.

2.Based on multiple sources:

a.Analysis of historical external resources (engineering/project management/permitting/construction) for similar activities,

b.budgetary quotes from suppliers for necessary materials, equipment, and services (when available),

c.analogous cost estimated from similar projects,

d.appropriate project support costs,

e.applicable overheads and allocations.

3.Project estimates are reviewed according to Avangrid Networks Quality Management System, routinely updated as the project progresses (from Project Initiation to Project Charter to Project Management Plan), and as more detailed project information evolves.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total         | 2026        | 2027        | 2028          | 2029          | 2030          |             |             |
|------------------------|---------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|
| # AFUDC                | \$ 128        | \$ -        | \$ -        | \$ 17         | \$ 34         | \$ 76         |             |             |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |             |             |
| # External Services    | \$ 641        | \$ -        | \$ -        | \$ 185        | \$ 428        | \$ 28         |             |             |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          |             |             |
| # Internal, Labor      | \$ 91         | \$ -        | \$ -        | \$ 18         | \$ 73         | \$ -          |             |             |
| # Internal, Overheads  | \$ 24         | \$ -        | \$ -        | \$ 7          | \$ 16         | \$ 1          |             |             |
| # Materials            | \$ 50         | \$ -        | \$ -        | \$ -          | \$ 50         | \$ -          |             |             |
| # Overheads - External | \$ 65         | \$ -        | \$ -        | \$ 18         | \$ 45         | \$ 2          |             |             |
| <b>Total</b>           | <b>\$ 999</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 246</b> | <b>\$ 647</b> | <b>\$ 106</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |



# **NYSEG Gas Asset Condition**

## NYSEG Dist Main Replacement

### PROJECT INFORMATION

|                                                       |                                              |                                                |                                        |                                        |
|-------------------------------------------------------|----------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0035-NYSEG-GS      | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces gas mains as required due to several factors including, but not limited to, poor conditions, conflicts with existing or proposed structures and utilities, other miscellaneous field conditions discovered as part of normal operations or other construction and inspection activities.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This is a program to replace gas mains as required due to several factors including, but not limited to, poor asset conditions, conflicts with existing or proposed structures, and other miscellaneous field conditions discovered as part of normal operations or other construction and inspection activities. These main replacements improve operational safety and reliability for the gas distribution system. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

Increased risks to operational safety and system reliability to the gas distribution system.

#### Project Alternatives:

All pipeline replacement projects are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The Distribution Main Replacement program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The resulting costs are included in the Program Cost Forecast and below.

This program will have asset values added to rate base throughout the year, each year.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 553           | \$ 77           | \$ 113          | \$ 100          | \$ 121          | \$ 140          |  |  |
| # CIAC                 | \$ -1,281        | \$ -12          | \$ -12          | \$ -241         | \$ -28          | \$ -988         |  |  |
| # External Services    | \$ 13,168        | \$ 2,497        | \$ 3,663        | \$ 1,959        | \$ 1,459        | \$ 3,590        |  |  |
| # Internal - Non-AC    | \$ 2             | \$ 1            | \$ -            | \$ 1            | \$ 0            | \$ -            |  |  |
| # Internal, Labor      | \$ 1,299         | \$ 271          | \$ 422          | \$ 220          | \$ 204          | \$ 182          |  |  |
| # Internal, Overheads  | \$ 2,761         | \$ 523          | \$ 652          | \$ 457          | \$ 300          | \$ 830          |  |  |
| # Materials            | \$ 1,330         | \$ 278          | \$ 251          | \$ 288          | \$ 257          | \$ 257          |  |  |
| # Overheads - External | \$ 1,723         | \$ 402          | \$ 473          | \$ 274          | \$ 190          | \$ 384          |  |  |
| <b>Total</b>           | <b>\$ 19,555</b> | <b>\$ 4,036</b> | <b>\$ 5,562</b> | <b>\$ 3,057</b> | <b>\$ 2,505</b> | <b>\$ 4,395</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 1,504         | \$ 109          | \$ 181          | \$ 186          | \$ 233          | \$ 240          | \$ 247          | \$ 309          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 33,375        | \$ 2,646        | \$ 3,982        | \$ 4,102        | \$ 5,127        | \$ 5,281        | \$ 5,439        | \$ 6,799        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,305         | \$ 99           | \$ 186          | \$ 192          | \$ 198          | \$ 204          | \$ 210          | \$ 216          |
| # Internal, Overheads  | \$ 4,755         | \$ 490          | \$ 672          | \$ 547          | \$ 629          | \$ 637          | \$ 712          | \$ 1,068        |
| # Materials            | \$ 2,133         | \$ 715          | \$ 209          | \$ 219          | \$ 230          | \$ 241          | \$ 253          | \$ 266          |
| # Overheads - External | \$ 3,185         | \$ 319          | \$ 458          | \$ 373          | \$ 423          | \$ 427          | \$ 478          | \$ 708          |
| <b>Total</b>           | <b>\$ 46,258</b> | <b>\$ 4,379</b> | <b>\$ 5,688</b> | <b>\$ 5,618</b> | <b>\$ 6,839</b> | <b>\$ 7,030</b> | <b>\$ 7,340</b> | <b>\$ 9,365</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Gas Operations Departmental

### PROJECT INFORMATION

|                                         |                                              |                                                |                                                |                                        |
|-----------------------------------------|----------------------------------------------|------------------------------------------------|------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                   | <b>Project ID:</b><br>UI-N5061-NYSEG-GS      | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Scappaticci, Thomas | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Operations | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                  | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Gas Operations Departmental expenditures are related to the purchase of tools and equipment needed and used by gas field employees daily or by special need to inspect, operate, maintain, repair or construct the gas distribution system. Equipment purchases are based on business needs including safety, systematic replacement (end of life or damage), geographic location of equipment and availability in emergency situations or workload, new technology or regulatory requirements, increased workload or scope of responsibility.

#### Project Scope:

Tool and equipment purchases to safely and efficiently perform routine and special gas operations tasks.

#### Project Benefits:

This program allows the Company to meet safety and Occupational Safety and Health Administration (OSHA) requirements through replacement of tools and equipment at the end of their useful lives. Reasons for replacement include end of life, obsolescence, new technologies, regulatory requirements and broken/damaged tool or equipment. This results in improved safety and more efficient pipeline operations.

#### Project Risks and Mitigation Plan:

Project risks include potentially long-lead times for specialized equipment. This risk is mitigated by planning for specialized equipment and identifying multiple vendors and/or manufacturers.

#### Risk of No Action:

The inability to source new tools and equipment could lead to occupational inefficiencies, injuries, or the inability to maintain or make necessary repairs to the distribution system. Without proper training programs and updated equipment, employees may not be prepared to meet safety regulations. This could result in a less qualified workforce, increasing the likelihood of accidents and operational errors.

#### Project Alternatives:

The current condition without tool replacement.

#### Basis for Project Estimates

2024 test year actual costs are the basis for the tools purchases inflated to 2026 at 3% per year.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 442          | \$ 103        | \$ 95           | \$ 65           | \$ 133          | \$ 46           |  |  |
| # Internal - Non-AC    | \$ 1            | \$ 1          | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Overheads  | \$ 823          | \$ 114        | \$ 161          | \$ 148          | \$ 158          | \$ 243          |  |  |
| # Materials            | \$ 3,880        | \$ 513        | \$ 613          | \$ 763          | \$ 813          | \$ 1,178        |  |  |
| # Overheads - External | \$ 1,009        | \$ 139        | \$ 161          | \$ 179          | \$ 250          | \$ 279          |  |  |
| <b>Total</b>           | <b>\$ 6,155</b> | <b>\$ 869</b> | <b>\$ 1,031</b> | <b>\$ 1,155</b> | <b>\$ 1,354</b> | <b>\$ 1,746</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 497           | \$ 179          | \$ 49           | \$ 51           | \$ 52           | \$ 54           | \$ 55           | \$ 57           |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 892           | \$ 101          | \$ 147          | \$ 119          | \$ 115          | \$ 116          | \$ 130          | \$ 163          |
| # Materials            | \$ 8,913         | \$ 829          | \$ 1,250        | \$ 1,287        | \$ 1,326        | \$ 1,366        | \$ 1,407        | \$ 1,449        |
| # Overheads - External | \$ 795           | \$ 86           | \$ 132          | \$ 107          | \$ 103          | \$ 104          | \$ 117          | \$ 146          |
| <b>Total</b>           | <b>\$ 11,097</b> | <b>\$ 1,196</b> | <b>\$ 1,577</b> | <b>\$ 1,564</b> | <b>\$ 1,596</b> | <b>\$ 1,640</b> | <b>\$ 1,709</b> | <b>\$ 1,815</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Reg Mod & Auto Pgm GRMP

### PROJECT INFORMATION

|                                                       |                                              |                                                |                                            |                                        |
|-------------------------------------------------------|----------------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0032-NYSEG-GS      | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program includes the improvements to regulator and gate stations within the NYSEG gas distribution systems.

#### Project Scope:

There are several types of typical upgrades, including the removal of: regulators; filters; chart recorders; valves; inlet and outlet piping; and enclosures. The noted equipment is replaced, upgraded or modernized with new standardized equipment, piping and associated fittings and includes corrosion protection for both equipment and piping. This program also includes the installation automation improvements and replacement of obsolete equipment for which there are no repair parts available.

#### Project Benefits:

These improvements enhance system reliability associated with corroded piping, fittings and end-of-life equipment. Additional benefits of this program include: reduction of potential outages due to equipment failures, improvement of equipment standardization and safety. This will also support annual inspections required by 16NYSCRR Part 255 by correcting deficiencies and modernizing to current standards. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program may contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

Regulator Stations are a critical piece of any natural gas distribution system, as they serve as the primary points of pressure and flow into the system, which ultimately delivers gas to the end-user. A typical regulator station contains equipment that: reduces pressure from a higher pressure to a lower pressure system, continuously records the pressure as a historical record of performance, over-pressure protection equipment to prevent the over-pressurization of the downstream system and valving to isolate the equipment and station. Some stations also include gas conditioning equipment to remove foreign material from the gas stream and remote telematics and SCADA equipment for real-time data collection and remote-control functionality. This equipment is designed and selected to operate continuously over a full range of parameters through all various weather conditions and system demands throughout the year. As this equipment reaches the end of its useful life it can deteriorate, not function properly and potentially become obsolete, which means replacement parts and no longer produced, and manufacturers no longer provide technical support. This threatens the reliability of flowing gas through these stations, which could potentially cause customer outage events.

#### Project Alternatives:

Other system options are evaluated for the feasibility of completing in lieu of performing the regulator station upgrades. These alternatives are reviewed on a case-by-case basis.



The program amounts were based on the 2025 amounts approved in the last rate plan and increased the quantity of stations to be updated by 15% for years 2026 through 2028, inclusive and for years 2029 through 2031 kept the number of stations flat. Regulator stations are minimally impacted by prevailing wage as the work is generally performed on private property and road permits are not needed. In each of the years, we applied adjustments for contractor cost increases, internal labor increases and material increases. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The resulting costs are included in the Program Cost Forecast and below.

\_\_\_\_\_

## FINANCIAL INFORMATION

| Capital Details:       | Total           | 2020            | 2021          | 2022            | 2023          | 2024            |  |  |
|------------------------|-----------------|-----------------|---------------|-----------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 730          | \$ 96           | \$ 97         | \$ 111          | \$ 188        | \$ 238          |  |  |
| # CIAC                 | \$ -750         | \$ -            | \$ -          | \$ -75          | \$ -612       | \$ -62          |  |  |
| # External Services    | \$ 5,193        | \$ 913          | \$ 453        | \$ 668          | \$ 685        | \$ 2,474        |  |  |
| # Internal - Non-AC    | \$ 1            | \$ 1            | \$ -          | \$ -            | \$ -          | \$ -            |  |  |
| # Internal, Labor      | \$ 463          | \$ 141          | \$ 52         | \$ 37           | \$ 70         | \$ 164          |  |  |
| # Internal, Overheads  | \$ 1,321        | \$ 321          | \$ 102        | \$ 242          | \$ 176        | \$ 480          |  |  |
| # Materials            | \$ 1,969        | \$ 372          | \$ 175        | \$ 541          | \$ 390        | \$ 490          |  |  |
| # Overheads - External | \$ 827          | \$ 244          | \$ 71         | \$ 141          | \$ 101        | \$ 271          |  |  |
| <b>Total</b>           | <b>\$ 9,753</b> | <b>\$ 2,088</b> | <b>\$ 949</b> | <b>\$ 1,665</b> | <b>\$ 998</b> | <b>\$ 4,054</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 2,121         | \$ 86           | \$ 210          | \$ 248          | \$ 357          | \$ 368          | \$ 379          | \$ 473          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 26,308        | \$ 983          | \$ 2,609        | \$ 3,091        | \$ 4,443        | \$ 4,576        | \$ 4,714        | \$ 5,892        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,198         | \$ 74           | \$ 174          | \$ 179          | \$ 184          | \$ 190          | \$ 195          | \$ 201          |
| # Internal, Overheads  | \$ 4,171         | \$ 252          | \$ 507          | \$ 472          | \$ 609          | \$ 618          | \$ 692          | \$ 1,021        |
| # Materials            | \$ 4,498         | \$ 535          | \$ 467          | \$ 564          | \$ 681          | \$ 715          | \$ 750          | \$ 788          |
| # Overheads - External | \$ 2,789         | \$ 168          | \$ 351          | \$ 322          | \$ 405          | \$ 411          | \$ 460          | \$ 672          |
| <b>Total</b>           | <b>\$ 41,085</b> | <b>\$ 2,098</b> | <b>\$ 4,318</b> | <b>\$ 4,875</b> | <b>\$ 6,679</b> | <b>\$ 6,877</b> | <b>\$ 7,190</b> | <b>\$ 9,047</b> |

[illegible]

## Vienna Road Regulator Station GRMP

### PROJECT INFORMATION

|                                                       |                                              |                                               |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-000816             | <b>Charge Code:</b><br>Gas                    | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>H2 2025              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This project includes the rebuild of the Vienna Road District Regulator Stations, which is a major hub of systems and stations in the Geneva Division.

#### Project Scope:

Vienna Road Regulator Station is critical for NYSEG Gas Control to balance daily nominations between National Fuel and DETI. The station has been in operation for over 60 years, with much of the equipment at or beyond its service life. The overpressure protection relief valves, and regulators are obsolete and replacement parts are no longer available. The existing heater is experiencing issues multiple times in the coldest points during the heating season, requiring manual restart of the equipment. The flow meter that measures the gas coming from the Arcadia Gate station is located in a vault below grade and prone to filling with water, leading to intermittent signal loss. This station serves a majority of gas into the northern part of the NYSEG Geneva franchise and is a critical component of ensuring reliability to approximately 27,000 customers.

#### Project Benefits:

This project will upgrade equipment, modernize facilities, increase operational efficiencies, eliminate potential environmental concerns as the primary stations feeding the northern portion of the NYSEG Geneva franchise. These improvements will provide a safe and reliable natural gas supply to existing customers.

This project provides gas service to areas designated as a disadvantaged communities (DAC).

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

No action results in increased reliability risk as this station contains obsolete and end of life pressure regulation equipment.

#### Project Alternatives:

Rebuilding the multiple stations and runs in the same buildings and parcel will increase costs due to the station remaining in-service, which would require special provisions working around live gas and many station by-passes to perform the work. This alternative was eliminated once the adjacent parcel of land was acquired.

#### Basis for Project Estimates

The project estimated has been developed by comparison to two regulator stations of similar complexity and scope based basic inputs shown in the attached estimate. The comparator projects are; regulator station RS230073 constructed in 2024 and gate station GS520051 completed in 2023. The proposed project attributes and comparator projects attributes are shown in the attached estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020          | 2021          | 2022         | 2023         | 2024         |  |  |
|------------------------|---------------|---------------|---------------|--------------|--------------|--------------|--|--|
| # AFUDC                | \$ 104        | \$ 1          | \$ 12         | \$ 26        | \$ 31        | \$ 34        |  |  |
| # CIAC                 | \$ -          | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         |  |  |
| # External Services    | \$ 353        | \$ 153        | \$ 200        | \$ -         | \$ -         | \$ -         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         |  |  |
| # Internal, Overheads  | \$ 46         | \$ 17         | \$ 29         | \$ -         | \$ -         | \$ -         |  |  |
| # Materials            | \$ -          | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         |  |  |
| # Overheads - External | \$ 68         | \$ 27         | \$ 41         | \$ -         | \$ -         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 570</b> | <b>\$ 198</b> | <b>\$ 282</b> | <b>\$ 26</b> | <b>\$ 31</b> | <b>\$ 34</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025 | 2026      | 2027 | 2028 | 2029 | 2030 | 2031 |
|------------------------|------------------|------|-----------|------|------|------|------|------|
| # AFUDC                | \$ -             | \$ - | \$ -      | \$ - | \$ - | \$ - | \$ - | \$ - |
| # CIAC                 | \$ -             | \$ - | \$ -      | \$ - | \$ - | \$ - | \$ - | \$ - |
| # External Services    | \$ 7,820         | \$ - | \$ 7,820  | \$ - | \$ - | \$ - | \$ - | \$ - |
| # Internal - Non-AC    | \$ -             | \$ - | \$ -      | \$ - | \$ - | \$ - | \$ - | \$ - |
| # Internal, Labor      | \$ 575           | \$ - | \$ 575    | \$ - | \$ - | \$ - | \$ - | \$ - |
| # Internal, Overheads  | \$ 848           | \$ - | \$ 848    | \$ - | \$ - | \$ - | \$ - | \$ - |
| # Materials            | \$ 1,265         | \$ - | \$ 1,265  | \$ - | \$ - | \$ - | \$ - | \$ - |
| # Overheads - External | \$ 986           | \$ - | \$ 986    | \$ - | \$ - | \$ - | \$ - | \$ - |
| <b>Total</b>           | <b>\$ 11,494</b> | \$ - | \$ 11,494 | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Baltimore Ave DRS Relocation

### PROJECT INFORMATION

|                                                       |                                              |                                        |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006622             | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2030              | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

The Baltimore Avenue District Regulator Station (DRS) 813689 is currently located in a flood-prone area along the banks of the Susquehanna River in Binghamton, New York. The DRS was constructed in 1962, and it does not have an existing 50-foot outlet isolation valve. Real estate constraints obviate the installation of a 50-foot outlet isolation valve. The proposed project will relocate the DRS to a higher elevation above the 100-year flood level and will have valving and equipment that meets current standards.

#### Project Scope:

This project includes relocation of the Baltimore Ave District Regulator Station (DRS) 813689 from the existing location on the south bank of the Susquehanna River to a site approximately 900 feet to the east. The 124-psig MAOP inlet main will be installed from the existing regulator station inlet, south on Bond St to Delavan Ave, then east on Delavan Ave to approximately 180 feet past the dead end. A new regulator station site will be constructed at this location, with station outlet pipe installed to the southeast in the Ruthven Place right-of-way and connecting to existing 25-psig medium pressure main on Conklin Ave.

#### Project Benefits:

Due to the proximity of the Susquehanna River, the existing regulator station is flood-prone, nor does it have a 50-foot outlet isolation valve. Reliability, safety, and system-hardening against flooding events will be improved through increased elevation and distance from the river, as well as installation of a 50-foot valve.

This project is located in, and provides gas service to, areas designated as a disadvantaged community (DAC). Greenhouse gas emissions related to this project are discussed in the project report.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The 'No Action' alternative was dismissed due to the flood prone nature of the site, and the lack of available locations to install a 50-foot outlet isolation valve. Partial replacement of station components will not address the flooding issue nor allow addition of a 50-foot outlet valve.

#### Project Alternatives:

None.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, inlet size, outlet size, inlet pressure, outlet pressure, the type of pressure regulation, if there is a building and how the project is managed (internally or externally). The proposed project attributes are entered into the database and consist of planned year of construction, inlet and outlet sizes, inlet pressure category, outlet pressure category, if there is a building to be constructed, the type of SCADA, the pressure regulation type, if a the station is above or below grade, whether the project will be managed internally or externally and any known unique costs or factors that need to be included in the estimate. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029        | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # External Services    | \$ 1,336        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,336        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Internal, Labor      | \$ 98           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 98           | \$ -        |
| # Internal, Overheads  | \$ 203          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 203          | \$ -        |
| # Materials            | \$ 216          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 216          | \$ -        |
| # Overheads - External | \$ 142          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 142          | \$ -        |
| <b>Total</b>           | <b>\$ 1,996</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,996</b> | <b>\$ -</b> |

[illegible]

## Border City DRS Rebuild

### PROJECT INFORMATION

|                                                       |                                              |                                        |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006621             | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2028              | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The Border City District Regulator Station (DRS) Hub is a group of three (3) DRS co-located in an existing building adjacent to the NYSEG Geneva Division Office at Border City and serves as a critical point of infrastructure as nearly half of all the gas that flows through the system on design day flows through this hub.

#### Project Scope:

The three (3) DRS's that make up the Border City Hub include DRS 420030 (Waterloo North Line), DRS 420040 (Geneva Beltline), and DRS 420550 (Border City – Penn Yan line), all of which were constructed in the 1950's. All equipment is on NYSEG owned property with the inlet and outlet gas mains underneath various sections of the existing parking lots. These stations are critical to serving the southern half of the Geneva Division gas distribution system.

#### Project Benefits:

The existing regulators at each DRS are obsolete, the building has visible signs of deterioration, as cracks in the wall have formed likely due to age and stresses, and the existing filters have had known leaks. There are grading issues with the pavement outside this building, which contributes to water infiltration into the building during heavy rain events. The only door and means of egress to the stations doesn't close properly. All three of these stations were built in 1958. Rebuilding these stations in a different location in a new building would be ideal to continue to provide service to the communities of Geneva, Gorham, Penn Yan, Dresden, Benton, Waterloo, and Seneca Falls which consists of over 30,000 customers. The existing regulators have been obsolete since 2014 according to the manufacturer, which means spare parts are no longer available for purchase and external support is limited if available at all. Equipment failure of the regulators will result in a significant downstream gas outage event, potentially causing a safety concerns during the coldest parts of the year.

This project provides gas service to areas designated as disadvantaged communities (DAC).

Refer to attached report for greenhouse gas emissions related to this project.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

No action would further the reliance on obsolete and outdated equipment, increasing the reliability and safety risk, as this station is a significant feed into many pressure systems.

#### Project Alternatives:

One alternative considered was replacing the filters and regulators only and leaving the stations existing piping in the existing building. This would only delay the costs to future years, given the condition of the existing piping and building. As the building structural condition deteriorates it only increases the safety risk not only of operations personnel entering the building, but also the risk to the existing station equipment within.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, inlet size, outlet size, inlet pressure, outlet pressure, the type of pressure regulation, if there is a building and how the project is managed (internally or externally). The proposed project attributes are entered into the database and consist of planned year of construction, inlet and outlet sizes, inlet pressure category, outlet pressure category, if there is a building to be constructed, the type of SCADA, the pressure regulation type, if a the station is above or below grade, whether the project will be managed internally or externally and any known unique costs or factors that need to be included in the estimate. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028            | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,957        | \$ -        | \$ -        | \$ -        | \$ 2,957        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 217          | \$ -        | \$ -        | \$ -        | \$ 217          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 421          | \$ -        | \$ -        | \$ -        | \$ 421          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 478          | \$ -        | \$ -        | \$ -        | \$ 478          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 296          | \$ -        | \$ -        | \$ -        | \$ 296          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,370</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,370</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



# **RG&E Gas Asset Condition**



## Caledonia Station Rebuild

### PROJECT INFORMATION

|                                                       |                                              |                                                |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UH-R0005517-RGE-GS     | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>H2 2027 |

#### **Project description:**

The Caledonia Gate Station consists of two (2) separate delivery points into the RG&E transmission system, Gate Station 1 - East (GS001) and Gate Station 3 - West (GS003), which were constructed in 1955. GS001 station feeds the CM6 and CM5 pipeline systems operating at a Maximum Allowable Operating Pressure (MAOP) of 250 PSIG. GS003 station feeds the CM2 system operating at an MAOP of 350 PSIG. Caledonia Gate Station is fed from two (2) Berkshire Hathaway Energy (BHE) Eastern Gas Transmission and Storage (EGTS) pipelines that have MAOPs of 650 PSIG and 1000 PSIG. Caledonia Station is the largest supply point into the Rochester system from a capacity perspective and is one of two major feeds to the western portion of the RGE Rochester franchise, along with the Chili Gate Station 016.

Caledonia Station has operated for 70 years and the existing equipment, building and property is in need of replacement, modernization and upgrades to safely and reliably serve gas to more than half of RG&E's customers. Caledonia Station was originally the sole gas supply source to the RGE territory. The construction of Mendon Gate Station in the 1990's provided increased reliability and capacity to meet system demand and provided operational flexibility to operate the system efficiently. Current capacity at Caledonia Station is approximately 14.5 MMCFH, providing reliable service to hundreds of thousands of customers.

#### **Project Scope:**

The Caledonia Station Modernization & Improvements include:

##### **A.Odorization, Overpressure Protection & Building Upgrades**

- a.Remove exiting building and install new building to house components for GS001 & GS003.
- b.Install new odorant tank and retain existing tank for redundancy.
- c.Install one dual run odorizer each for Caledonia East and West systems.
- d.Replace all odorant lines with orbital welded tubing.
- e.Install new injection tap for GS001 and GS003 with dielectric unions.
- f.Install new overpressure protection devices on station inlet systems.

##### **B.Site Electrical Improvements**

- a.Replace back-up generator and associated electrical equipment.
- b.Upgrade all exterior lighting to meet Avangrid specifications.

##### **C.Site General Improvements**

- a.Install new gravel driveway with access to new buildings.
- b.Install new fencing along with new sliding main gate and emergency egress gates to meet Avangrid security standards.
- c.Reconfigure station outlet piping with tie-in to CM6 pipeline and configuration for potential 330 PSIG operation.

**Project Benefits:****A.Odorization, Overpressure Protection & Building Upgrades**

Current Caledonia East and West buildings are showing signs of deterioration and do not have adequate ventilation in accordance with the National Electrical Code for building hazardous classification. In addition, Caledonia East has asbestos and will require remediation prior to demolition. These buildings do not meet current Avangrid building standards.

Install new overpressure protection relief valves to protect station inlet piping from accidental over-pressurization. The relief valve model to be used is: Flowsafe F7000 8x10 for each side of Caledonia Station.

Existing odorizers are over 25 years old and odorant pumps and associated equipment are experiencing normal 'wear and tear' and it is recommended to install new odorizer equipment to maintain pipeline integrity and safety to RGE customers and the general public. Relocation of the Caledonia West odorant supply line is likely required due potential conflicts with new building. The current injection location for Caledonia West is in below grade vault which is considered OSHA confined space. This project will install new injection locations at accessible and suitable locations.

The following is needed to accommodate the future 330 PSIG configuration:

- Continued usage of existing YZ 4000-gallon odorant tank and replacement of odorizers for Caledonia East (CM1) and Caledonia West (CM2) pipeline with new dual YZ 8302 odorizers and 2500-gallon storage tanks for Caledonia East and West.
- Current Caledonia East and West odorizers share a common 4000-gallon storage tank. An additional 2500-gallon tank will provide for increased redundancy and reliability for future maintenance and emergency scenarios. Based on 5-year historical flow data, it is recommended to increase the total odorant storage from 4000 gallons to at least 5000 gallons, which is covered by the existing and proposed new tank.

**B.Site Electrical Improvements**

The current generator is showing signs of deterioration resulting in increased maintenance.

A new backup generator is required to maintain pipeline operations, Gas Supply nominations, and downstream system integrity.

**C.Site General Improvements**

Current fencing does not meet Avangrid security standards. Currently there is no main gate entrance and only one emergency egress gate. Primary crew entrance to station is thru the existing building and the door is deteriorated and does not provide adequate security to RGE equipment.

New fencing installations will improve security, and allow better access for crews.

The Caledonia East building and piping location interferes with annual corrosion tests and could compromise pipeline integrity.

These issues will be solved with planned building configurations.

The existing driveway will be reconfigured for more efficient vehicle movement within the property.

This project provides gas service to areas designated as a disadvantaged community (DAC). This project does not impact greenhouse gas emissions.

**Project Risks and Mitigation Plan:**

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

As the equipment at the Caledonia Gate Station reaches the end of its useful life it can deteriorate, not function properly and potentially become obsolete, which means replacement parts are no longer produced, and manufacturers no longer provide technical support. This threatens the reliability of flowing gas through the stations, which could potentially cause customer outage events to a significant portion of the RGE Rochester Gas System.

Rebuilding Caledonia Station, and continuing to operate the CM-2 at 350 psig and CM-1/CM-6 at 250 psig for the foreseeable future would not provide as much reliability and operational flexibility as the planned operational transition to operating the CM-2, CM-1 and CM-6 all at 330 psig.

The Caledonia Gate Station project estimate is based the Chili Gate Station that was completed in 2015 (no more recent large Gate Stations have been constructed since 2015). The inlet and outlet sizes of the Calendonia Gate Station are the same as the Chili Gate Station (24") and the odorant tank, fittings and valveing are similar with respect to materials. The estimates have been adjusted to reflect that the representative project was completed in the past and also adjusted to align with the scope of the Calendonia project. The current cost estiamte is included in the following pages.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020         | 2021         | 2022         | 2023         | 2024         |  |  |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--|--|
| # AFUDC                | \$ 79        | \$ 15        | \$ 16        | \$ 15        | \$ 16        | \$ 18        |  |  |
| # CIAC                 | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| # External Services    | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| # Internal - Non-AC    | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| # Materials            | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 79</b> | <b>\$ 15</b> | <b>\$ 16</b> | <b>\$ 15</b> | <b>\$ 16</b> | <b>\$ 18</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,750        | \$ -        | \$ -        | \$ 3,750        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 250          | \$ -        | \$ -        | \$ 250          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 164          | \$ -        | \$ -        | \$ 164          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 200          | \$ -        | \$ -        | \$ 200          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 418          | \$ -        | \$ -        | \$ 418          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,782</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,782</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## CM-1 Pipeline: Section 4 Chili GS to Bal

### PROJECT INFORMATION

|                                                       |                                              |                                                |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UH-R0005446-RGE-GS     | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

This asset condition and reliability risk project will replace the CM-1 20-inch 1951 gas transmission main with a new 16-inch wrapped steel gas main from Chili Gate Station (GS), northeast to Ballantyne Rd. With the recent construction of the CM-5 transmission pipeline in 2017, this section of the CM-1 is no longer needed to support the RG&E transmission system that operates at 250-psig.

The new pipeline will be constructed for an MAOP of 120psig. It is valved off from the remaining CM-1 sections north of Ballantyne Rd, and will be connected to the MF120 Western Monroe pressure system. This project will improve the reliability of the MF120 Western Monroe pressure system. District Regulator station 500 is at the west end of this section of the CM-1 and moves distribution gas from the regulator outlet northeast toward Ballantyne Rd. This project decreases reliance on the Buffalo Rd stations to support the MF120, by approximately 350 mcfh (the flow provided by district regulator station 500).

The Buffalo Road Regulator Station is a major distribution hub located in the Rochester District feeding four systems: SF115 Mt Read Blvd, SF180 CM1B, MF120 Western Monroe, and the MF99 East Station systems. 70% MAOP at the inlet to Buffalo Road is insufficient to feed these 4 systems for the design hour. The area served by this station has been experiencing significant load growth due to customer requests for CNG fleet fueling stations, coal conversion, and other residential and commercial growth.

#### Project Scope:

The existing 20-inch steel gas transmission main from the Chili gate station to Ballantyne Rd will be replaced with 16-inch steel gas pipe to operate at a maximum allowable operating pressure of 120-psig. The 16-inch pipeline will be designed for less than 20% SMYS.

The new 16-inch pipeline will tie into the Chili GS and CM5 at Humphrey Rd. The entire project will be completed in the Towns of Chili and Gates.

#### Project Benefits:

The main replacement of the CM-1 between the Chili GS and Ballantyne Rd would best serve to support the existing MF120 Western Monroe pressure system, as the CM-5 is now the major feed from the Caledonia East and Chili GS toward the Buffalo Rd regulator hub. The location of this project helps to balance the pressure system regulators due to changes in customer needs on the MF120 system. The project also improves overall transmission and feeder system reliability and system pressures at major distribution regulating stations in accordance with Avangrid's Gas System Planning Manual criteria, since it adds an extra source of pressure to existing regulators 461 and 462. Inlet pressures would be supported at the Buffalo Rd Regulator Station, RS 320 Whalen Rd, RS 319 Salt Rd, RS 468 Browncroft Blvd, RS 470 Blossom Rd and RS 369 East Station.

This project provides gas service to areas designated as a disadvantaged communities (DAC).

This project contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

No action could result in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

Alternate locations and routes for the new 16-inch pipeline were considered and rejected due to the location of the new Empire West Chili GS and available space in the new CM-5 corridor. Other routes would increase the overall pipeline length and have higher construction costs to tie-in to the Chili gate station.

## Basis for Project Estimates

## FINANCIAL INFORMATION

| Capital Details:       | Total         | 2020          | 2021         | 2022         | 2023         | 2024          |  |  |
|------------------------|---------------|---------------|--------------|--------------|--------------|---------------|--|--|
| # AFUDC                | \$ 430        | \$ 54         | \$ 92        | \$ 86        | \$ 93        | \$ 104        |  |  |
| # CIAC                 | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| # External Services    | \$ 440        | \$ 440        | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| # Internal, Overheads  | \$ 16         | \$ 16         | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| # Materials            | \$ -          | \$ -          | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| # Overheads - External | \$ 50         | \$ 50         | \$ -         | \$ -         | \$ -         | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 936</b> | <b>\$ 560</b> | <b>\$ 92</b> | <b>\$ 86</b> | <b>\$ 93</b> | <b>\$ 104</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026             | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|------------------|-------------|------------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 11,688        | \$ -        | \$ 11,688        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 779           | \$ -        | \$ 779           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 573           | \$ -        | \$ 573           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 623           | \$ -        | \$ 623           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 1,462         | \$ -        | \$ 1,462         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 15,126</b> | <b>\$ -</b> | <b>\$ 15,126</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## RGE Dist Main Replacement

### PROJECT INFORMATION

|                                                       |                                              |                                                |                                        |                                        |
|-------------------------------------------------------|----------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0035-RGE-GS        | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces gas mains as required due to several factors including, but not limited to, poor conditions, conflicts with existing or proposed structures and utilities, other miscellaneous field conditions discovered as part of normal operations or other construction and inspection activities.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This is a program to replace gas mains as required due to several factors including, but not limited to, poor asset conditions, conflicts with existing or proposed structures, and other miscellaneous field conditions discovered as part of normal operations or other construction and inspection activities. These main replacements improve operational safety and reliability for the gas distribution system. This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted is the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

Increased risks to operational safety and system reliability to the gas distribution system.

#### Project Alternatives:

All pipeline replacement projects are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The Distribution Main Replacement program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The Companies have maintained the number of services being installed from 2024 levels due to the unknown nature of where and to what extent exceptions to the All Electric Building legislation and directions may be incurred. The costs to install new services has been increased based on contractor price increases, prevailing wage, material increases, and inflation based on 2024 actual costs. Portions of the costs of installing new service, under certain circumstances, are subject to prevailing wage. 2024 was the only full year of installing new services with prevailing wage impacts, years prior to 2024 do not include these impacts. The resulting costs are included in the Program Cost Forecast and below.

This program will have asset values added to rate base throughout the year, each year.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 215          | \$ 48           | \$ 34           | \$ 31           | \$ 48           | \$ 54           |  |  |
| # CIAC                 | \$ -423         | \$ -13          | \$ -            | \$ -20          | \$ -224         | \$ -166         |  |  |
| # External Services    | \$ 6,295        | \$ 1,281        | \$ 926          | \$ 756          | \$ 1,852        | \$ 1,480        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 367          | \$ 44           | \$ 16           | \$ 50           | \$ 181          | \$ 76           |  |  |
| # Internal, Overheads  | \$ 406          | \$ 64           | \$ 49           | \$ 54           | \$ 157          | \$ 82           |  |  |
| # Materials            | \$ 1,317        | \$ 261          | \$ 198          | \$ 249          | \$ 415          | \$ 195          |  |  |
| # Overheads - External | \$ 1,169        | \$ 221          | \$ 174          | \$ 173          | \$ 426          | \$ 175          |  |  |
| <b>Total</b>           | <b>\$ 9,346</b> | <b>\$ 1,906</b> | <b>\$ 1,397</b> | <b>\$ 1,293</b> | <b>\$ 2,854</b> | <b>\$ 1,896</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 591           | \$ 57           | \$ 69           | \$ 71           | \$ 89           | \$ 92           | \$ 94           | \$ 118          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 15,847        | \$ 1,141        | \$ 1,906        | \$ 1,963        | \$ 2,454        | \$ 2,527        | \$ 2,603        | \$ 3,254        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 573           | \$ 49           | \$ 81           | \$ 83           | \$ 86           | \$ 89           | \$ 91           | \$ 94           |
| # Internal, Overheads  | \$ 32            | \$ 8            | \$ 5            | \$ 4            | \$ 4            | \$ 4            | \$ 4            | \$ 4            |
| # Materials            | \$ 2,010         | \$ 354          | \$ 244          | \$ 256          | \$ 269          | \$ 282          | \$ 296          | \$ 311          |
| # Overheads - External | \$ 2,425         | \$ 361          | \$ 369          | \$ 339          | \$ 358          | \$ 313          | \$ 304          | \$ 381          |
| <b>Total</b>           | <b>\$ 21,479</b> | <b>\$ 1,970</b> | <b>\$ 2,673</b> | <b>\$ 2,717</b> | <b>\$ 3,259</b> | <b>\$ 3,306</b> | <b>\$ 3,393</b> | <b>\$ 4,161</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Mt Read (SF115 psig) Main Replacement

### PROJECT INFORMATION

|                                                       |                                              |                                               |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UH-R0000540-RGE-GS     | <b>Charge Code:</b><br>Gas                    | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

Replacing and pressure-upgrading the SF115 R343 MT READ medium-pressure system to operate at 120-psig and connecting this system to the MF120 WESTERN MONROE medium-pressure system improves reliability and operational flexibility for anticipated daily fluctuations in customer demands, especially during the coldest parts of the year.

#### Project Scope:

This project includes the replacement of approximately 15,000 LF of 1950's vintage 20-inch steel pipe with 24-inch diameter WRST (with a 120-psig MAOP) on Mount Read Boulevard (from Buffalo Road to Driving Park Avenue) and Buffalo Road (Mount Read Boulevard to Varian Lane). Additionally, 11,300 LF of 1960's or newer 12-, 16-, and 20-inch existing steel main will be pressure upgraded from 115-psig to 120-psig along Mount Read Boulevard (Driving Park Avenue to Ridgeway Avenue), Jay Street (Mount Read Boulevard to Child Street), and McKee Road (Buffalo Road to northern terminus). The gas mains within the scope of this project will be tied-in and support the MF120 WESTERN MONROE medium-pressure system.

#### Project Benefits:

The Mount Read Boulevard corridor, from Buffalo Road to Driving Park, consists largely of commercial and industrial customers, and serves hard-to-electrify, large gas users such as several privately-owned compressed natural gas (CNG) truck fleet fueling stations, a non-profit food distribution center, as well as the county government environmental services and operations centers. According to the 'City of Rochester Mount Read Boulevard Corridor Study', within the proposed project extent, a majority of the available frontage along Mt Read Blvd is zoned industrial, with the remaining as low-density residential. The Mount Read corridor also serves as a significant feeder into multiple downstream gas distribution systems, including the MF60 Northwest and MF14 Greece medium pressure distribution systems, which supply gas into portions of the City of Rochester and the Town of Greece. At Design Day conditions, the SF115 flows approximately 3.3 MMCFH, serving roughly 60% of gas into the Town of Greece. This pipeline replacement is critical to maintain safe, reliable and affordable energy to the commercial and industrial customers through this area as well as the downstream customers. Operating the SF115 R343 MT READ pressure system at 120-psig and connecting it to the MF120 WESTERN MONROE medium pressure system, also improves reliability for the City of Rochester and Town of Greece customers. Currently, the MF120 WESTERN MONROE system is supported by four (4) district regulator stations: 461, 462, 500, and 504. The addition of district regulator station RS343 would offer more support from the previously mentioned stations to the Eastman Business Park / RED industrial development area off Lake Avenue and Ridge Road in the City of Rochester (fed by downstream station 463), as well as the residents and businesses in the towns of Gates, Greece, Parma and on the MF60 NORTHWEST pressure system.

This project is located in, and provides gas service to areas designated as a disadvantaged communities (DAC).

This project contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

No action could result in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.



**Project Alternatives:**

While the existing SF115 R343 MT READ pressure system can be operated safely and efficiently, a multi-feed system, supported by more than one (1) district regulator station, will improve reliability for distribution of gas to the higher population density areas in the RG&E franchise. Due to the 3.3 MCMFH of flow through the SF115 R343 MT READ system, this system is essential for the majority of the Town of Greece customers, as well as for county government operations centers as it is the sole supply of gas for district regulator station RS463.

Utilizing the 16-inch SF120 R525 RED, which currently serves the RED Rochester/Eastman Business Park, as an alternative to new main along Mount Read Blvd was also evaluated. This option would require the construction of a new district regulator station to support existing customers within the Mount Read Blvd corridor. This option is infeasible as the endpoint pressure for the SF120 R525 RED system decreased by approximately 30 to 40-psig, which would minimize the benefit of a recent system pressure upgrade (from 120-psig to 250-psig) that was customer funded to allow a change in their operation.

**Basis for Project Estimates**

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029             | 2030             | 2031        |
|------------------------|------------------|-------------|-------------|-------------|-------------|------------------|------------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 32,644        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 16,322        | \$ 16,322        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ 1,645         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 822           | \$ 822           | \$ -        |
| # Internal, Overheads  | \$ 1,033         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 532           | \$ 501           | \$ -        |
| # Materials            | \$ 2,553         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,276         | \$ 1,276         | \$ -        |
| # Overheads - External | \$ 2,570         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,324         | \$ 1,246         | \$ -        |
| <b>Total</b>           | <b>\$ 40,444</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 20,277</b> | <b>\$ 20,167</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
|--------------|-------|------|------|------|------|------|------|------|

[illegible]

## RGE Reg Mod & Auto Pgm GRMP

### PROJECT INFORMATION

|                                                       |                                              |                                                |                                        |                                        |
|-------------------------------------------------------|----------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0032-RGE-GS        | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program includes the improvements to regulator and gate stations within the RG&E gas distribution systems.

#### Project Scope:

There are several types of typical upgrades, including the removal of: regulators; filters; chart recorders; valves; inlet and outlet piping; and enclosures. The noted equipment is replaced, upgraded or modernized with new standardized equipment, piping and associated fittings and includes corrosion protection for both equipment and piping. This program also includes the installation automation improvements and replacement of obsolete equipment for which there are no repair parts available.

#### Project Benefits:

These improvements enhance system reliability associated with corroded piping, fittings and end-of-life equipment. Additional benefits of this program include: reduction of potential outages due to equipment failures, improvement of equipment standardization and safety. This will also support annual inspections required by 16NYSCRR Part 255 by correcting deficiencies and modernizing to current standards.

This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program may contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

Regulator Stations are a critical piece of any natural gas distribution system, as they serve as the primary points of pressure and flow into the system, which ultimately delivers gas to the end-user. A typical regulator station contains equipment that: reduces pressure from a higher pressure to a lower pressure system, continuously records the pressure as a historical record of performance, over-pressure protection equipment to prevent the over-pressurization of the downstream system and valving to isolate the equipment and station. Some stations also include gas conditioning equipment to remove foreign material from the gas stream and remote telematics and SCADA equipment for real-time data collect and remote-control functionality. This equipment is designed and selected to operate continuously over a full range of parameters through all various weather conditions and system demands throughout the year. As this equipment reaches the end of its useful life it can deteriorate, not function properly and potentially become obsolete, which means replacement parts are no longer produced, and manufacturers no longer provide technical support. This threatens the reliability of flowing gas through these stations, which could potentially cause customer outage events.

Other system options are evaluated for the feasibility of completing in lieu of performing the regulator station upgrades. These alternatives are reviewed on a case-by-case basis.

The program amounts were based on the 2024 amounts approved in the last rate plan and adjustments applied for contractor cost increases, internal labor increases and material increases. The adjustment factors are included in the Program Cost Forecast papers included in this filing. Regulator stations are minimally impacted by prevailing wage as the work is generally performed on private property and road permits are not needed. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 690           | \$ 264          | \$ 142          | \$ 91           | \$ 101          | \$ 93           |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 8,058         | \$ 2,391        | \$ 2,564        | \$ 1,803        | \$ 265          | \$ 1,035        |  |  |
| # Internal - Non-AC    | \$ 0             | \$ -            | \$ -            | \$ 0            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 879           | \$ 285          | \$ 209          | \$ 157          | \$ 141          | \$ 87           |  |  |
| # Internal, Overheads  | \$ 648           | \$ 177          | \$ 200          | \$ 135          | \$ 65           | \$ 72           |  |  |
| # Materials            | \$ 3,281         | \$ 866          | \$ 1,027        | \$ 599          | \$ 392          | \$ 398          |  |  |
| # Overheads - External | \$ 2,147         | \$ 635          | \$ 651          | \$ 529          | \$ 164          | \$ 168          |  |  |
| <b>Total</b>           | <b>\$ 15,704</b> | <b>\$ 4,617</b> | <b>\$ 4,793</b> | <b>\$ 3,313</b> | <b>\$ 1,128</b> | <b>\$ 1,853</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031             |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| # AFUDC                | \$ 2,834         | \$ 142          | \$ 349          | \$ 359          | \$ 449          | \$ 463          | \$ 476          | \$ 596           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # External Services    | \$ 32,734        | \$ 3,743        | \$ 3,757        | \$ 3,869        | \$ 4,837        | \$ 4,982        | \$ 5,131        | \$ 6,414         |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # Internal, Labor      | \$ 2,288         | \$ 105          | \$ 337          | \$ 348          | \$ 358          | \$ 369          | \$ 380          | \$ 391           |
| # Internal, Overheads  | \$ 141           | \$ 17           | \$ 25           | \$ 23           | \$ 21           | \$ 18           | \$ 18           | \$ 20            |
| # Materials            | \$ 9,726         | \$ 753          | \$ 1,319        | \$ 1,385        | \$ 1,455        | \$ 1,527        | \$ 1,604        | \$ 1,684         |
| # Overheads - External | \$ 5,818         | \$ 769          | \$ 920          | \$ 849          | \$ 870          | \$ 763          | \$ 742          | \$ 904           |
| <b>Total</b>           | <b>\$ 53,542</b> | <b>\$ 5,528</b> | <b>\$ 6,707</b> | <b>\$ 6,834</b> | <b>\$ 7,990</b> | <b>\$ 8,122</b> | <b>\$ 8,352</b> | <b>\$ 10,008</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RS 369 East Station Rebuild GRMP

### PROJECT INFORMATION

|                                                       |                                              |                                               |                                            |                                    |
|-------------------------------------------------------|----------------------------------------------|-----------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-003713             | <b>Charge Code:</b><br>Gas                    | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>H1 2028              | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

Regulator Station (RS) 369 will be relocated in anticipation of the proposed City of Rochester/New York State ROC-the-Riverway Park along the Genesee River, at the former "East Station Manufactured Gas Plant [MGP]" site, adjacent to Suntru Street, in the City of Rochester. This project is part of the City of Rochester "ROC the Riverway" multi-year development initiative. The existing regulator station is currently located in the middle of the proposed park footprint.

#### Project Scope:

RG&E had developed plans to rebuild RS 369 to modernize and increase equipment performance. The original intent was to locate the new above-grade station adjacent to the existing station on RG&E property, including site improvements, security enhancements and the replacement of the large diameter inlet and outlet piping. However, due to the City of Rochester's and NYS plans to repurpose this parcel into a public park, RG&E has concerns regarding the proposed location of the new station conflicting with park features. Additionally, there are concerns regarding the safety, security and accessibility with having a critical piece of energy infrastructure located within a public park. Considering these extraneous parameters, and the desire to be good stewards and partners with the municipalities and communities which the Company serves, and for the safety, security and long-term protection of critical energy infrastructure, RG&E proposes to relocate this station to a new parcel located along St. Paul Boulevard, in the City of Rochester. This station will have two (2) new worker regulators, two (2) monitors, and a new relief valve, security measures and remote capability controls as well as new inlet and outlet piping and associated fittings.

#### Project Benefits:

The City of Rochester, with funding and assistance from NYS, has publicized their intention and plans to develop the former "East Station Manufactured Gas Plant [MGP]" site into a new public recreation park. Due to the location of the park area in proximity to the existing station, Regulator Station 369 will be relocated outside of the park land parcel. Existing gas mains and equipment in the proposed park area will be retired and above-grade piping and equipment will be removed to accommodate future park development. New piping and equipment for the regulator station relocation will be installed as needed. The proposed relocation parcel along St. Paul Boulevard offers better access for routine maintenance and emergent response and will also have security measures in place to deter interference with equipment and property. RS369 currently flows almost 1,400 MCFH to the City of Rochester residential, commercial, and industrial customers, and is one of the primary stations that supports the MF12 URBAN pressure system. This station service most of the City of Rochester residents; a majority of the customers served from this station fall within a Disadvantaged Community (DAC) designation. Replacement would decrease the likelihood of large-scale gas customer outages, in a densely-populated area, if equipment malfunctions. DACs within New York State have been identified such that NYS efforts to combat climate change are sure to benefit them, as well as other residents, and tend to be in urban areas, often in close proximity to environmental challenges such as landfills, power generation facilities, industrial/manufacturing businesses, and low vegetative cover .

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The 'Do Nothing' option and 'Rebuild per original scope adjacent to existing regulatory station' have similar negative outcomes, including the potential for future interference with park plans, features, development and construction. Further, these options do not address safety and accessibility concerns with having critical energy infrastructure located within a public park. For these reasons, relocated the station is in the mutual interest of involved stakeholders, including the City of Rochester, State of New York and RG&E customers.

The 'Do Nothing' option and 'Rebuild per original scope adjacent to existing regulatory station' have similar negative outcomes, including the potential for future interference with park plans, features, development and construction. Further, these options do not address safety and accessibility concerns with having critical energy infrastructure located within a public park. For these reasons, relocated the station is in the mutual interest of involved stakeholders, including the City of Rochester, State of New York and RG&E customers.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$'000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ 70         | \$ -        | \$ -        | \$ -        | \$ 20         | \$ 50        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ 135        | \$ -        | \$ -        | \$ -        | \$ 135        | \$ -         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ 47         | \$ -        | \$ -        | \$ -        | \$ 47         | \$ -         |  |  |
| # Materials            | \$ 381        | \$ -        | \$ -        | \$ -        | \$ 381        | \$ -         |  |  |
| # Overheads - External | \$ 123        | \$ -        | \$ -        | \$ -        | \$ 123        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 756</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 706</b> | <b>\$ 50</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025         | 2026        | 2027        | 2028            | 2029            | 2030        | 2031        |
|------------------------|-----------------|--------------|-------------|-------------|-----------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 58           | \$ 58        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -         | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 6,000        | \$ -         | \$ -        | \$ -        | \$ 1,125        | \$ 4,875        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -         | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 150          | \$ -         | \$ -        | \$ -        | \$ 75           | \$ 75           | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 191          | \$ -         | \$ -        | \$ -        | \$ 43           | \$ 148          | \$ -        | \$ -        |
| # Materials            | \$ 320          | \$ -         | \$ -        | \$ -        | \$ 60           | \$ 260          | \$ -        | \$ -        |
| # Overheads - External | \$ 466          | \$ -         | \$ -        | \$ -        | \$ 109          | \$ 357          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,185</b> | <b>\$ 58</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,412</b> | <b>\$ 5,715</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Industrial Gas Service Replacement - RGE

### PROJECT INFORMATION

|                                                       |                                              |                                    |                                              |                                    |
|-------------------------------------------------------|----------------------------------------------|------------------------------------|----------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UH-R0005084-RGE-GS     | <b>Charge Code:</b><br>Gas         | <b>Project Sponsor:</b><br>Labombard, Yvette | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP5 Close | <b>Start Date:</b><br>H1 2027                | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

This industrial customer has received safe and reliable natural gas service from RG&E to support their heavy industrial operations at their asphalt facility since 1968. Since the original 4-inch steel service was installed, the customer has been a valued customer of RG&E. This project will ensure RG&E can continue to safely deliver natural gas to the customer by replacing the gas service and removing the steel support structure. RG&E is legally obligated to provide safe natural gas service to the facility. To uphold that commitment, a complete replacement of all RG&E owned facilities at the facility is required. This includes all service materials, fittings, and the steel support up to and including the meter set. The scope of this work includes significant logistics and cost investment due to the steel support structure and site conditions.

#### Project Scope:

In 1968, a 4-inch WRST service was installed off the existing main along Buffalo Road, which operates at 124 PSIG Maximum Allowable Operating Pressure (MAOP). The service runs southerly along the Buffalo Road Industrial Park access road before heading southwesterly to the top of the east edge of the quarry. Service Regulator #2093 reduces the pressure from 120 PSIG to 60 PSIG. Downstream of the regulator, a 6-inch-steel service runs down to the bottom of the quarry, supported by a rigid steel structure between the service and the eastern quarry wall. After being in service for +- 50 years, both the gas service and steel support structure are deteriorating and corroding. The current facilities are beyond repair and in need of replacement. If the facilities are not replaced, the on-going corrosion and deterioration will continue due to the exposed conditions of the pipe.

A new 1485 linear feet 4-inch-WRST gas service will be installed below grade, at a depth of 36", adjacent to the main asphalt entrance/access road until it reaches the meter set. The new 4" WRST will be tied into the existing 4" WRST from 1989, at the meter set. The existing meter set will remain in place. The customer is proposing to relocate their existing manufacturing facilities approximately 400 linear feet to the west of their current location. The customer will be responsible for installation and maintenance of their fuel line from the existing meter set location to the new facilities. additionally, the existing exposed structures and facilities will be removed, including: 200 LF of 4-inch WRST, steel support structure, encased 4-inch stream crossing, and service regulator SR2093.

This project is not located in an area designated as a disadvantage community.

This project does not contribute to greenhouse gas reductions.

#### Project Benefits:

Given the constant atmospheric exposure, and harsh operating conditions typical of a rock quarry, the existing service and steel support structure have experienced significant oxidation, erosion, and degradation over its 56-year lifespan. Reinforced by a rigid steel support, the pipe slopes down the eastern wall to the base of the quarry, where it finishes underground to the meter set. Over time, both the service and support have worsened in condition, stability, integrity, and safety. To mitigate these conditions, it was determined that installing the gas service underground and removing the existing gas service and steel structure is the most cost efficient and technically prudent solution.

The combination of high humidity, nuisance vegetation growth, and suspended, exposed steel, not only creates a corrosive environment for the facilities, but they are also difficult to access, inspect, and maintain. Replacing the current structure with an underground steel service will reduce maintenance costs, corrosion risk, environmental and safety concerns. The customer will have confidence in being supplied safe and reliable Natural Gas.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

**Risk of No Action:**

This project will ensure RG&E continues to meet its obligations to provide safe, reliable, and economical natural gas to customers. Installing this new service underground eliminates the safety concerns present with the exposed has service and steel structure.

### Project Alternatives:

Instead of installing an entirely new service, one alternative considered was maintaining and/or replacing the existing service and steel support structure. As evidenced by the current condition of the facilities and the constant exposure to abrasive environmental factors, it is reasonable to conclude that an exposed gas service and steel structure will be challenging and costly to adequately maintain, while presenting increased safety risks.

## Basis for Project Estimates

The project estimated has been developed utilizing the Gas Program Database as well as discussions with a vendor on the removal of the existing structure and main. For the main installation, the database was used and for the removal of the existing structure a vendor provided the cost. Since the cost of removing the existing facilities is unique, the database could not be used. The new main installation is similar in nature to other main work that we perform.

This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

| FINANCIAL INFORMATION  |       |      |      |      |      |      |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,125        | \$ -        | \$ -        | \$ 1,125        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 75           | \$ -        | \$ -        | \$ 75           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 58           | \$ -        | \$ -        | \$ 58           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 60           | \$ -        | \$ -        | \$ 60           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 129          | \$ -        | \$ -        | \$ 129          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,447</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,447</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Rebuild Station 449 - Valentown Rd & CR9

### PROJECT INFORMATION

|                                                       |                                            |                                        |                                          |                                    |
|-------------------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-003759           | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Horgan, Brian | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2028            | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The Valentown Road District Regulator Station (DRS) 449 feeds a significant amount of gas into the MF60 Southeast pressure system. This system has seen significant commercial and residential development, which has resulted in this DRS being at its capacity. This project proposes to rebuild the DRS, allowing RG&E to reliably meet the demands of the existing customers.

#### Project Scope:

Valentown Road DRS 449 is one of three (3) DRS feeding into the MF60 Southeast, specifically the southerly portions of the system, as shown in Figure 1. The existing station is at capacity, as the existing regulators cannot flow any incremental gas. Regulators are analogous to water faucets, there is only so much that can flow through them once its wide open. A regulator needs a specified level of pressure differential to push the gas through the device. At a certain critical pressure and flow condition, the regulator will be fully open and can only push more gas at the expense of maintaining the set downstream pressure. This droop effect represents as a safety concern, as pressure throughout the system will decrease. A larger regulator, able to pass more gas at the same operating conditions, will alleviate the capacity issue.

The existing station has 4-inch inlet pipe, 2-inch regulators, and 8-inch outlet pipe. This project proposes rebuilding this station with 6-inch inlet pipe, 4-inch regulators, and 12-inch outlet pipe. This would also include a filter and 6-inch inlet valves and 8-inch outlet valves, and a 6-inch x 8-inch relief valve for overpressure protection.

#### Project Benefits:

The towns of Victor and Farmington are located in the southeasterly corner of the MF60 Southeast pressure system and have seen an increase of approximately 245 Mcfh load from residential developments in the last 10 years (see Figure 2). The proposed DRS rebuild will better serve the current customers that have connected to the system within the last 10 years. The companies design criteria for regulator equipment capacity is between 20-80% of their total capacity at design day, Regulators that operate at or near 100% capacity exhibit strain and premature wear to the internal parts of the regulator. This includes but is not limited to pilot springs and rubber diaphragms that are directly involved with limits and controlling outlet pressure and flow. Rebuilding this station will allow for better pressure and service to these customers in Victor and Farmington. This project will increase the capacity through this station by approximately 200-400 Mcfh and allow the equipment to operate within desired design parameters, reducing the potential for equipment failure and customer outages. In conjunction with other improvement projects in the area this will increase system endpoint pressure from approximately 24-psig (40% MAOP) to 43-psig (72% MAOP), as more gas flowing through DRS 449 reduces the burden on the other stations. Further, the higher pressure to the gas main upstream customer services and meters will help better lessen the impact on their service regulators. This will also avoid the need to upsize their services due to the lower pressure on the gas main and through the gas service.

This project is not located in an area designated as a disadvantaged community (DAC).

This program/project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

One alternative considered is construction an additional point of supply into the MF60 Southeast pressure system. The Empire pipeline traverse through the pressure system, or a Compressed Natural Gas or Liquefied Natural Gas injection point could be constructed. Given the size, scope and magnitude of similar projects completed of this nature, a new supply point would be difficult to permit and likely not cost effective compared to the proposed project.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, inlet size, outlet size, inlet pressure, outlet pressure, the type of pressure regulation, if there is a building and how the project is managed (internally or externally). The proposed project attributes are entered into the database and consist of planned year of construction, inlet and outlet sizes, inlet pressure category, outlet pressure category, if there is a building to be constructed, the type of SCADA, the pressure regulation type, if a the station is above or below grade, whether the project will be managed internally or externally and any known unique costs or factors that need to be included in the estimate. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028            | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 925          | \$ -        | \$ -        | \$ -        | \$ 925          | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 26           | \$ -        | \$ -        | \$ -        | \$ 26           | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 3            | \$ -        | \$ -        | \$ -        | \$ 3            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 195          | \$ -        | \$ -        | \$ -        | \$ 195          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 145          | \$ -        | \$ -        | \$ -        | \$ 145          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,294</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,294</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



# **NYSEG Gas Mandatory**

## NYSEG New Services

### PROJECT INFORMATION

|                                                       |                                         |                                                |                                            |                                        |
|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0034-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory  | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program installs new gas services to new customers (residential or business customers) in accordance with the tariff. This program extends new gas service lines to new customers to comply with the Company's obligation to serve.

#### Project Scope:

This program is dedicated to installing natural gas services for new commercial and residential customers. This includes the installation of the service line, regulator, and meter, as well as the necessary testing to ensure safe and reliable operation.

This program does not cover the costs associated with main installations for URD (Underground Residential Distribution) work or main extensions required to provide service to individual businesses or residences. Such work is completed under the Main Extension program.

#### Project Benefits:

This program is necessary to connect businesses and residence that request gas service in accordance with the tariffs.

This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects and/or service installs would not be provided.

#### Risk of No Action:

The New Gas Service Program is required by regulation.

#### Project Alternatives:

Prior to making their final choice, prospective customers are informed of available energy options, benefits and incentives, including electrification options.

#### Basis for Project Estimates

The Companies have maintained the number of services being installed from 2024 levels due to the unknown nature of where and to what extent exceptions to the All Electric Building legislation and guidance may be realized. The costs to install new services has been increased based on contractor price increases, prevailing wage, material increases, and inflation based on 2024 actual costs. Portions of the costs of installing new service, under certain circumstances, are subject to prevailing wage. 2024 was the only full year of installing new services with prevailing wage impacts, years prior to 2024 do not include these impacts. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 165           | \$ 33           | \$ 44           | \$ 31           | \$ 19           | \$ 37           |  |  |
| # CIAC                 | \$ -886          | \$ -59          | \$ -119         | \$ -179         | \$ -255         | \$ -273         |  |  |
| # External Services    | \$ 4,177         | \$ 889          | \$ 1,080        | \$ 591          | \$ 785          | \$ 832          |  |  |
| # Internal - Non-AC    | \$ -9            | \$ 1            | \$ -0           | \$ 0            | \$ -10          | \$ -            |  |  |
| # Internal, Labor      | \$ 5,300         | \$ 1,231        | \$ 1,131        | \$ 1,145        | \$ 856          | \$ 937          |  |  |
| # Internal, Overheads  | \$ 2,050         | \$ 471          | \$ 452          | \$ 436          | \$ 320          | \$ 370          |  |  |
| # Materials            | \$ 1,389         | \$ 292          | \$ 211          | \$ 264          | \$ 290          | \$ 331          |  |  |
| # Overheads - External | \$ 2,111         | \$ 514          | \$ 455          | \$ 427          | \$ 336          | \$ 378          |  |  |
| <b>Total</b>           | <b>\$ 14,296</b> | <b>\$ 3,373</b> | <b>\$ 3,254</b> | <b>\$ 2,715</b> | <b>\$ 2,342</b> | <b>\$ 2,612</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 449           | \$ 80           | \$ 48           | \$ 49           | \$ 61           | \$ 63           | \$ 65           | \$ 81           |
| # CIAC                 | \$ -2,710        | \$ -            | \$ -351         | \$ -362         | \$ -452         | \$ -466         | \$ -480         | \$ -600         |
| # External Services    | \$ 11,170        | \$ 2,899        | \$ 1,072        | \$ 1,104        | \$ 1,380        | \$ 1,421        | \$ 1,464        | \$ 1,830        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 6,488         | \$ 60           | \$ 994          | \$ 1,024        | \$ 1,054        | \$ 1,086        | \$ 1,118        | \$ 1,152        |
| # Internal, Overheads  | \$ 2,664         | \$ 298          | \$ 404          | \$ 329          | \$ 346          | \$ 351          | \$ 394          | \$ 542          |
| # Materials            | \$ 2,969         | \$ 434          | \$ 373          | \$ 391          | \$ 411          | \$ 431          | \$ 453          | \$ 476          |
| # Overheads - External | \$ 2,890         | \$ 194          | \$ 479          | \$ 390          | \$ 394          | \$ 399          | \$ 446          | \$ 589          |
| <b>Total</b>           | <b>\$ 23,921</b> | <b>\$ 3,965</b> | <b>\$ 3,018</b> | <b>\$ 2,925</b> | <b>\$ 3,195</b> | <b>\$ 3,286</b> | <b>\$ 3,461</b> | <b>\$ 4,071</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Dist Mains New Business

### PROJECT INFORMATION

|                                                       |                                         |                                                |                                            |                                        |
|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0036-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory  | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program installs new gas mains to customers in accordance with the tariff. This program is required to extend new gas mains to new customers to comply with the Company's obligation to provide service.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This program is necessary to connect businesses and residence that request gas service in accordance with the tariffs. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted is the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects and/or service installs would not be provided.

#### Risk of No Action:

The Distribution Main – New Business Program is required by regulation.

#### Project Alternatives:

Prior to making their final choice, prospective customers are informed of available energy options, benefits and incentives, including electrification options.

#### Basis for Project Estimates

The Companies have maintained the number of length of main extensions being installed from 2024 levels due to the unknown nature of where and to what extent exceptions to the All Electric Building legislation and guidance may be realized. The costs to install main extensions has been increased based on contractor price increases, prevailing wage, material increases, and inflation based on 2024 actual costs. Portions of the costs of installing new service, under certain circumstances, are subject to prevailing wage. 2024 was the only full year of installing new services with prevailing wage impacts, years prior to 2024 do not include these impacts. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 537           | \$ 55           | \$ 108          | \$ 204          | \$ 89           | \$ 81           |  |  |
| # CIAC                 | \$ -1,612        | \$ -70          | \$ -49          | \$ -445         | \$ -928         | \$ -120         |  |  |
| # External Services    | \$ 8,511         | \$ 1,456        | \$ 3,014        | \$ 1,125        | \$ 1,729        | \$ 1,188        |  |  |
| # Internal - Non-AC    | \$ -54           | \$ -1           | \$ -            | \$ -            | \$ -53          | \$ -            |  |  |
| # Internal, Labor      | \$ 1,529         | \$ 246          | \$ 425          | \$ 373          | \$ 236          | \$ 249          |  |  |
| # Internal, Overheads  | \$ 1,847         | \$ 337          | \$ 591          | \$ 316          | \$ 356          | \$ 246          |  |  |
| # Materials            | \$ 1,314         | \$ 169          | \$ 478          | \$ 215          | \$ 329          | \$ 123          |  |  |
| # Overheads - External | \$ 1,352         | \$ 261          | \$ 431          | \$ 259          | \$ 223          | \$ 178          |  |  |
| <b>Total</b>           | <b>\$ 13,425</b> | <b>\$ 2,454</b> | <b>\$ 4,998</b> | <b>\$ 2,047</b> | <b>\$ 1,982</b> | <b>\$ 1,945</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 914           | \$ 107          | \$ 105          | \$ 108          | \$ 135          | \$ 139          | \$ 143          | \$ 179          |
| # CIAC                 | \$ -1,197        | \$ -            | \$ -155         | \$ -160         | \$ -200         | \$ -206         | \$ -212         | \$ -265         |
| # External Services    | \$ 14,038        | \$ 2,271        | \$ 1,525        | \$ 1,571        | \$ 1,963        | \$ 2,022        | \$ 2,083        | \$ 2,604        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,788         | \$ 82           | \$ 264          | \$ 272          | \$ 280          | \$ 288          | \$ 297          | \$ 306          |
| # Internal, Overheads  | \$ 2,276         | \$ 402          | \$ 302          | \$ 245          | \$ 276          | \$ 279          | \$ 313          | \$ 459          |
| # Materials            | \$ 1,511         | \$ 587          | \$ 136          | \$ 143          | \$ 150          | \$ 157          | \$ 165          | \$ 173          |
| # Overheads - External | \$ 1,747         | \$ 261          | \$ 247          | \$ 201          | \$ 218          | \$ 221          | \$ 247          | \$ 351          |
| <b>Total</b>           | <b>\$ 21,077</b> | <b>\$ 3,710</b> | <b>\$ 2,423</b> | <b>\$ 2,379</b> | <b>\$ 2,822</b> | <b>\$ 2,901</b> | <b>\$ 3,035</b> | <b>\$ 3,807</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Non LP Srv Repl Program

### PROJECT INFORMATION

|                                                       |                                         |                                                |                                        |                                        |
|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N5081-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory  | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces or ties-over any service associated with a gas main replacement project that does not qualify as a leak prone service in accordance with the Distribution Integrity Management Program (DIMP).

#### Project Scope:

This program includes the replacement or tie-over of gas services associated with pipe replacement that do not qualify as leak prone services. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program may contribute to greenhouse gas reductions.

#### Project Benefits:

The replacement of non-leak prone is completed in accordance with the Company's Distribution Integrity Management Program. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future O&M expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of non-state of the art facilities is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

The work replaces gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public rights-of-way, leak prone gas main replacements per rate cases and tariff or code requirements, actively leaking services etc.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the required mileage each year.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted is the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year. This assumes the associated main work would also be delayed. If main work permitting delays do not exist, most likely the associated service work would not be delayed.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

The Non-Leak Prone Service Replacement Program is required by regulation.

#### Project Alternatives:

All non-leak prone services that are associated with pipeline projects are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The Non-Leak Prone Service Replacement program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The resulting costs are included in the Program Cost Forecast and below.

This program will have asset values added to rate base throughout the year, each year.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 333           | \$ 42           | \$ 55           | \$ 67           | \$ 75           | \$ 95           |  |  |
| # CIAC                 | \$ -1,114        | \$ -100         | \$ -152         | \$ -168         | \$ -326         | \$ -368         |  |  |
| # External Services    | \$ 7,492         | \$ 1,106        | \$ 1,149        | \$ 1,436        | \$ 1,606        | \$ 2,196        |  |  |
| # Internal - Non-AC    | \$ 1             | \$ 1            | \$ -            | \$ -0           | \$ -0           | \$ -            |  |  |
| # Internal, Labor      | \$ 1,951         | \$ 270          | \$ 377          | \$ 399          | \$ 476          | \$ 429          |  |  |
| # Internal, Overheads  | \$ 1,881         | \$ 257          | \$ 337          | \$ 424          | \$ 358          | \$ 506          |  |  |
| # Materials            | \$ 1,165         | \$ 162          | \$ 230          | \$ 234          | \$ 274          | \$ 266          |  |  |
| # Overheads - External | \$ 1,353         | \$ 212          | \$ 257          | \$ 285          | \$ 279          | \$ 319          |  |  |
| <b>Total</b>           | <b>\$ 13,062</b> | <b>\$ 1,949</b> | <b>\$ 2,252</b> | <b>\$ 2,677</b> | <b>\$ 2,741</b> | <b>\$ 3,443</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 1,055         | \$ 113          | \$ 122          | \$ 126          | \$ 157          | \$ 162          | \$ 167          | \$ 208          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 23,879        | \$ 2,064        | \$ 2,827        | \$ 2,912        | \$ 3,640        | \$ 3,749        | \$ 3,861        | \$ 4,827        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 3,051         | \$ 107          | \$ 455          | \$ 469          | \$ 483          | \$ 497          | \$ 512          | \$ 528          |
| # Internal, Overheads  | \$ 4,036         | \$ 525          | \$ 565          | \$ 460          | \$ 517          | \$ 523          | \$ 586          | \$ 859          |
| # Materials            | \$ 2,965         | \$ 766          | \$ 323          | \$ 339          | \$ 356          | \$ 374          | \$ 393          | \$ 413          |
| # Overheads - External | \$ 3,074         | \$ 341          | \$ 454          | \$ 369          | \$ 401          | \$ 406          | \$ 455          | \$ 647          |
| <b>Total</b>           | <b>\$ 38,060</b> | <b>\$ 3,917</b> | <b>\$ 4,747</b> | <b>\$ 4,675</b> | <b>\$ 5,554</b> | <b>\$ 5,712</b> | <b>\$ 5,974</b> | <b>\$ 7,482</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG CAPEX Gas Meters

### PROJECT INFORMATION

|                                           |                                         |                                                |                                                 |                                        |
|-------------------------------------------|-----------------------------------------|------------------------------------------------|-------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>UI-N3089-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Mandatory  | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                   | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program is for the purchase and installation of gas meters to replace existing, aged meters as they are removed from service as well as for new installations.

#### Project Scope:

This program is for the purchase and installation of gas meters to replace existing, aged meters as they are removed from service as well as for new installations. Ultrasonic meters are now approved for use in New York and will be replacing traditional diaphragm meters and these have a considerably higher cost.

AMI meters are not included in the 2025 scope of this program because they are being covered under the AMI Project.

In 2026, after the conclusion of the AMI Project, this program will assume the CapEx costs of AMI meters which will have a higher material cost compared to legacy meters.

#### Project Benefits:

Gas meters are exchanged for annual PSC required programs including Statistical Sampling and Remediation programs and for other various reasons including relocation, load increases, meter damaged, special testing, replace non-temperature controlled meters. The programs help to ensure accurate recording of customers usage and result in accurate customer billing.

#### Project Risks and Mitigation Plan:

Material lead times - ensure orders are placed in advance / work with multiple suppliers.

Large meter group failure - perform in house first article testing and review

#### Risk of No Action:

Loss of revenue due to lack of meter inventory or inaccurate revenue metering equipment.

#### Project Alternatives:

None

#### Basis for Project Estimates

Previous years actuals, annual inflation, new customer population, increased meter costs due to Smart Meter Technology

2026 - 2031 forecasts based on annual inflation of 3%. In addition, a larger increase from 2026 to 2027 is based on the cost increase from legacy diaphragm meters to AMI ultrasonic meters as a result of the NY AMI Project and the industry moving away from diaphragm technology. (Legacy Meter Cost \$110.65 / AMI ultrasonic Meter Cost \$281.88 --- 155% increase). We also anticipate 2% of opt out customers opting back into AMI in 2026. This cost although a result of AMI will be assumed by this budget.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 1            | \$ 1            | \$ 0            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal - Non-AC    | \$ -0           | \$ -0           | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ -0           | \$ -0           | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Overheads  | \$ 3,997        | \$ 842          | \$ 808          | \$ 839          | \$ 859          | \$ 648          |  |  |
| # Materials            | \$ 3,614        | \$ 688          | \$ 674          | \$ 748          | \$ 858          | \$ 647          |  |  |
| # Overheads - External | \$ 1,309        | \$ 30           | \$ 442          | \$ 500          | \$ 190          | \$ 147          |  |  |
| <b>Total</b>           | <b>\$ 8,921</b> | <b>\$ 1,561</b> | <b>\$ 1,924</b> | <b>\$ 2,087</b> | <b>\$ 1,908</b> | <b>\$ 1,442</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 12,815        | \$ 1,420        | \$ 1,427        | \$ 1,896        | \$ 1,994        | \$ 1,994        | \$ 2,042        | \$ 2,042        |
| # Materials            | \$ 12,130        | \$ 1,350        | \$ 1,350        | \$ 1,794        | \$ 1,886        | \$ 1,886        | \$ 1,932        | \$ 1,932        |
| # Overheads - External | \$ 1,753         | \$ 193          | \$ 195          | \$ 260          | \$ 273          | \$ 273          | \$ 280          | \$ 280          |
| <b>Total</b>           | <b>\$ 26,698</b> | <b>\$ 2,964</b> | <b>\$ 2,972</b> | <b>\$ 3,950</b> | <b>\$ 4,152</b> | <b>\$ 4,152</b> | <b>\$ 4,254</b> | <b>\$ 4,254</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG Government Jobs

### PROJECT INFORMATION

|                                                       |                                         |                                                |                                        |                                        |
|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0033-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory  | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces gas mains in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This is a program for work mandated by government entities and is necessary to comply with the terms and conditions to occupy public right-of-way. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects to address the underfunding of this program.

#### Risk of No Action:

NYSEG is required to relocate facilities that conflict with proposed municipal jobs in accordance with the terms and conditions to occupy the public right-of-way. Failure to relocate facilities in a timely manner can result in delays to municipal projects, reputational damage and the potential for third-party damage to gas facilities.

#### Project Alternatives:

There are no alternatives to completing work under this program.

#### Basis for Project Estimates

The Government Projects program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. 10% per year was included to adjust for the potential impacts of the magnitude and/or quantity of projects due to the Infrastructure Investment and Jobs Act. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021          | 2022         | 2023          | 2024            |  |  |
|------------------------|-----------------|---------------|---------------|--------------|---------------|-----------------|--|--|
| # AFUDC                | \$ 78           | \$ 7          | \$ 25         | \$ 10        | \$ 12         | \$ 23           |  |  |
| # CIAC                 | \$ -322         | \$ -29        | \$ -1         | \$ -37       | \$ -44        | \$ -211         |  |  |
| # External Services    | \$ 2,267        | \$ 165        | \$ 459        | \$ 9         | \$ 189        | \$ 1,445        |  |  |
| # Internal - Non-AC    | \$ 1            | \$ 1          | \$ -          | \$ -         | \$ -          | \$ -            |  |  |
| # Internal, Labor      | \$ 465          | \$ 144        | \$ 114        | \$ 42        | \$ 25         | \$ 141          |  |  |
| # Internal, Overheads  | \$ 496          | \$ 65         | \$ 109        | \$ 14        | \$ 41         | \$ 267          |  |  |
| # Materials            | \$ 281          | \$ 51         | \$ 48         | \$ 18        | \$ 56         | \$ 109          |  |  |
| # Overheads - External | \$ 357          | \$ 68         | \$ 87         | \$ 16        | \$ 26         | \$ 161          |  |  |
| <b>Total</b>           | <b>\$ 3,624</b> | <b>\$ 471</b> | <b>\$ 842</b> | <b>\$ 71</b> | <b>\$ 305</b> | <b>\$ 1,935</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 364           | \$ 25           | \$ 33           | \$ 38           | \$ 52           | \$ 59           | \$ 66           | \$ 91           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 11,462        | \$ 622          | \$ 1,062        | \$ 1,203        | \$ 1,655        | \$ 1,875        | \$ 2,124        | \$ 2,921        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 710           | \$ 24           | \$ 106          | \$ 109          | \$ 113          | \$ 116          | \$ 119          | \$ 123          |
| # Internal, Overheads  | \$ 1,717         | \$ 118          | \$ 197          | \$ 174          | \$ 217          | \$ 240          | \$ 294          | \$ 478          |
| # Materials            | \$ 1,032         | \$ 172          | \$ 97           | \$ 112          | \$ 129          | \$ 149          | \$ 173          | \$ 199          |
| # Overheads - External | \$ 1,195         | \$ 77           | \$ 146          | \$ 127          | \$ 153          | \$ 167          | \$ 203          | \$ 322          |
| <b>Total</b>           | <b>\$ 16,480</b> | <b>\$ 1,036</b> | <b>\$ 1,641</b> | <b>\$ 1,764</b> | <b>\$ 2,318</b> | <b>\$ 2,606</b> | <b>\$ 2,979</b> | <b>\$ 4,135</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Large Government Jobs - NYSEG

### PROJECT INFORMATION

|                                                       |                                         |                                                |                                            |                                    |
|-------------------------------------------------------|-----------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0057-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory  | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This program replaces gas mains in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way and where the costs of the project will meet or exceed \$750,000.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This is a program for work mandated by government entities and is necessary to comply with the terms and conditions to occupy public right-of-way. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects to address the underfunding of this program.

#### Risk of No Action:

NYSEG is required to relocate facilities that conflict with proposed municipal jobs in accordance with the terms and conditions to occupy the public right-of-way. Failure to relocate facilities in a timely manner can result in delays to municipal projects, reputational damage and the potential for third-party damage to gas facilities.

#### Project Alternatives:

There are no alternatives to completing work under this program.

#### Basis for Project Estimates

The Government Projects program costs were based on 2024 planned costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. 10% per year was included to adjust for the potential impacts of the magnitude and/or quantity of projects due to the Infrastructure Investment and Jobs Act. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The magnitude and timing of the various increases noted above and the resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025          | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 278           | \$ 26         | \$ 25           | \$ 28           | \$ 38           | \$ 44           | \$ 49           | \$ 68           |
| # CIAC                 | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 7,594         | \$ 368        | \$ 708          | \$ 802          | \$ 1,103        | \$ 1,250        | \$ 1,416        | \$ 1,947        |
| # Internal - Non-AC    | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 193           | \$ 14         | \$ 28           | \$ 29           | \$ 29           | \$ 30           | \$ 31           | \$ 32           |
| # Internal, Overheads  | \$ 658           | \$ 64         | \$ 72           | \$ 64           | \$ 80           | \$ 89           | \$ 110          | \$ 179          |
| # Materials            | \$ 948           | \$ 103        | \$ 95           | \$ 110          | \$ 127          | \$ 147          | \$ 170          | \$ 196          |
| # Overheads - External | \$ 700           | \$ 63         | \$ 79           | \$ 70           | \$ 86           | \$ 96           | \$ 117          | \$ 189          |
| <b>Total</b>           | <b>\$ 10,372</b> | <b>\$ 638</b> | <b>\$ 1,007</b> | <b>\$ 1,103</b> | <b>\$ 1,465</b> | <b>\$ 1,655</b> | <b>\$ 1,893</b> | <b>\$ 2,610</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **RG&E Gas Mandatory**



## RGE Dist Mains New Business

### PROJECT INFORMATION

|                                                       |                                        |                                                |                                            |                                        |
|-------------------------------------------------------|----------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0036-RGE-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program installs new gas mains to customers in accordance with the tariff. This program is required to extend new gas mains to new customers to comply with the Company's obligation to provide service.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This program is necessary to connect businesses and residence that request gas service in accordance with the tariffs. This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects and/or service installs would not be provided.

#### Risk of No Action:

The Distribution Main – New Business Program is required by regulation.

#### Project Alternatives:

Prior to making their final choice, prospective customers are informed of available energy options, benefits and incentives, including electrification options.

#### Basis for Project Estimates

The Companies have maintained the number of length of main extensions being installed from 2024 levels due to the unknown nature of where and to what extent exceptions to the All Electric Building legislation and guidance may be realized. The costs to install main extensions has been increased based on contractor price increases, prevailing wage, material increases, and inflation based on 2024 actual costs. Portions of the costs of installing new service, under certain circumstances, are subject to prevailing wage. 2024 was the only full year of installing new services with prevailing wage impacts, years prior to 2024 do not include these impacts. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 240          | \$ 54           | \$ 41           | \$ 43           | \$ 44           | \$ 58           |  |  |
| # CIAC                 | \$ -2,127       | \$ -213         | \$ -693         | \$ -261         | \$ -467         | \$ -492         |  |  |
| # External Services    | \$ 7,111        | \$ 1,221        | \$ 1,670        | \$ 1,362        | \$ 1,532        | \$ 1,326        |  |  |
| # Internal - Non-AC    | \$ 0            | \$ -            | \$ -            | \$ 0            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 953          | \$ 127          | \$ 192          | \$ 209          | \$ 176          | \$ 249          |  |  |
| # Internal, Overheads  | \$ 482          | \$ 73           | \$ 98           | \$ 108          | \$ 106          | \$ 97           |  |  |
| # Materials            | \$ 1,612        | \$ 239          | \$ 270          | \$ 443          | \$ 261          | \$ 398          |  |  |
| # Overheads - External | \$ 1,519        | \$ 270          | \$ 314          | \$ 350          | \$ 356          | \$ 229          |  |  |
| <b>Total</b>           | <b>\$ 9,789</b> | <b>\$ 1,771</b> | <b>\$ 1,892</b> | <b>\$ 2,253</b> | <b>\$ 2,008</b> | <b>\$ 1,865</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 633           | \$ 61           | \$ 74           | \$ 76           | \$ 95           | \$ 98           | \$ 101          | \$ 127          |
| # CIAC                 | \$ -4,889        | \$ -            | \$ -634         | \$ -653         | \$ -816         | \$ -840         | \$ -865         | \$ -1,082       |
| # External Services    | \$ 14,360        | \$ 1,181        | \$ 1,708        | \$ 1,759        | \$ 2,199        | \$ 2,265        | \$ 2,333        | \$ 2,916        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,765         | \$ 56           | \$ 264          | \$ 272          | \$ 280          | \$ 289          | \$ 297          | \$ 306          |
| # Internal, Overheads  | \$ 61            | \$ 9            | \$ 10           | \$ 10           | \$ 9            | \$ 8            | \$ 8            | \$ 8            |
| # Materials            | \$ 3,385         | \$ 403          | \$ 438          | \$ 460          | \$ 483          | \$ 508          | \$ 533          | \$ 560          |
| # Overheads - External | \$ 2,752         | \$ 411          | \$ 429          | \$ 395          | \$ 403          | \$ 353          | \$ 343          | \$ 417          |
| <b>Total</b>           | <b>\$ 18,066</b> | <b>\$ 2,121</b> | <b>\$ 2,290</b> | <b>\$ 2,320</b> | <b>\$ 2,654</b> | <b>\$ 2,680</b> | <b>\$ 2,750</b> | <b>\$ 3,251</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE CAPEX Gas Meters

### PROJECT INFORMATION

|                                           |                                        |                                                |                                                 |                                        |
|-------------------------------------------|----------------------------------------|------------------------------------------------|-------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>UI-R3071-RGE-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                   | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program is for the purchase and installation of gas meters to replace existing, aged meters as they are removed from service as well as for new installations.

#### Project Scope:

This program is for the purchase and installation of gas meters to replace existing, aged meters as they are removed from service as well as for new installations.

Ultrasonic meters are now approved for use in New York and will be replacing traditional diaphragm meters and these have a considerably higher cost. In addition, AMI ERT's are now required for each gas meter, adding additional costs to the meter price.

AMI meters are not included in the 2025 scope of this program because they are being covered under the AMI Project.

In 2026, after the conclusion of the AMI Project, this program will assume the CapEx costs of AMI meters which will have a higher material cost compared to legacy meters.

#### Project Benefits:

Gas meters are intalled for new customers, exchanged for annual PSC required programs including Statistical Sampling and Remediation programs and for other various reasons including relocation, load increases, meter damaged, special testing, replace non-temperature controlled meters. The programs help to ensure accurate recording of customers' usage and result in accurate customer billing.

#### Project Risks and Mitigation Plan:

Material lead times - ensure orders are placed in advance / work with multiple suppliers.

Large meter group failure - perform in house first article testing and review

#### Risk of No Action:

Loss of revenue due to lack of meter inventory or inaccurate revenue metering equipment.

#### Project Alternatives:

None

#### Basis for Project Estimates

Previous years actuals, annual inflation, new customer popuation, increased meter costs due to Smart Meter Technology

2026 - 2031 forecasts based on annual inflation of 3% and the cost increase from legacy diaphragm meters to AMI ultrasonic meters as a result of the NY AMI Project and the industry moking away from diaphragm technology. (Legacy Meter Cost \$110.65 / AMI ultrasonic Meter Cost \$281.88 --- 155% increase). We also anticipate 2% of opt out customers opting back into AMI in 2026. This cost although a result of AMI. will be assumed by this budget.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 1             | \$ 1            | \$ 0            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal - Non-AC    | \$ 0             | \$ 0            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ -1            | \$ -1           | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Overheads  | \$ 7,192         | \$ 1,114        | \$ 1,463        | \$ 1,567        | \$ 1,640        | \$ 1,409        |  |  |
| # Materials            | \$ 3,485         | \$ 729          | \$ 1,027        | \$ 765          | \$ 518          | \$ 445          |  |  |
| # Overheads - External | \$ 3,650         | \$ 11           | \$ 850          | \$ 1,132        | \$ 891          | \$ 765          |  |  |
| <b>Total</b>           | <b>\$ 14,328</b> | <b>\$ 1,855</b> | <b>\$ 3,340</b> | <b>\$ 3,464</b> | <b>\$ 3,050</b> | <b>\$ 2,619</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 12,272        | \$ 1,637        | \$ 1,432        | \$ 1,636        | \$ 1,738        | \$ 1,841        | \$ 1,943        | \$ 2,045        |
| # Materials            | \$ 6,000         | \$ 800          | \$ 700          | \$ 800          | \$ 850          | \$ 900          | \$ 950          | \$ 1,000        |
| # Overheads - External | \$ 6,454         | \$ 861          | \$ 753          | \$ 860          | \$ 914          | \$ 968          | \$ 1,022        | \$ 1,076        |
| <b>Total</b>           | <b>\$ 24,726</b> | <b>\$ 3,299</b> | <b>\$ 2,885</b> | <b>\$ 3,297</b> | <b>\$ 3,503</b> | <b>\$ 3,709</b> | <b>\$ 3,915</b> | <b>\$ 4,121</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE New Services

### PROJECT INFORMATION

|                                                       |                                        |                                                |                                            |                                        |
|-------------------------------------------------------|----------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0034-RGE-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program installs new gas services to new customers (residential or business customers) in accordance with the tariff. This program extends new gas service lines to new customers to comply with the Company's obligation to serve.

#### Project Scope:

This program is dedicated to installing natural gas services for new commercial and residential customers. This includes the installation of the service line, regulator, and meter, as well as the necessary testing to ensure safe and reliable operation.

This program does not cover the costs associated with main installations for URD (Underground Residential Distribution) work or main extensions required to provide service to individual businesses or residences. Such work is completed under the Main Extension program.

#### Project Benefits:

This program is necessary to connect businesses and residence that request gas service in accordance with the tariffs.

This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted is the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects and/or service installs would not be provided.

#### Risk of No Action:

The New Gas Service Program is required by regulation.

#### Project Alternatives:

Prior to making their final choice, prospective customers are informed of available energy options, benefits and incentives, including electrification options.

#### Basis for Project Estimates

The Companies have maintained the number of services being installed from 2024 levels due to the unknown nature of where and to what extent exceptions to the All Electric Building legislation and guidance may be realized. The costs to install new services has been increased based on contractor price increases, prevailing wage, material increases, and inflation based on 2024 actual costs. Portions of the costs of installing new service, under certain circumstances, are subject to prevailing wage. 2024 was the only full year of installing new services with prevailing wage impacts, years prior to 2024 do not include these impacts. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 139          | \$ 20           | \$ 22           | \$ 27           | \$ 36           | \$ 34           |  |  |
| # CIAC                 | \$ -1,742       | \$ -314         | \$ -341         | \$ -344         | \$ -415         | \$ -328         |  |  |
| # External Services    | \$ 6,437        | \$ 1,191        | \$ 1,206        | \$ 1,039        | \$ 1,461        | \$ 1,540        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 683          | \$ 145          | \$ 114          | \$ 124          | \$ 163          | \$ 138          |  |  |
| # Internal, Overheads  | \$ 501          | \$ 80           | \$ 88           | \$ 88           | \$ 134          | \$ 111          |  |  |
| # Materials            | \$ 2,102        | \$ 315          | \$ 383          | \$ 449          | \$ 515          | \$ 440          |  |  |
| # Overheads - External | \$ 1,510        | \$ 293          | \$ 280          | \$ 287          | \$ 403          | \$ 247          |  |  |
| <b>Total</b>           | <b>\$ 9,631</b> | <b>\$ 1,729</b> | <b>\$ 1,752</b> | <b>\$ 1,668</b> | <b>\$ 2,298</b> | <b>\$ 2,183</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 387           | \$ 46           | \$ 44           | \$ 46           | \$ 57           | \$ 59           | \$ 60           | \$ 76           |
| # CIAC                 | \$ -3,259        | \$ -            | \$ -422         | \$ -435         | \$ -544         | \$ -560         | \$ -577         | \$ -721         |
| # External Services    | \$ 16,625        | \$ 1,431        | \$ 1,969        | \$ 2,028        | \$ 2,535        | \$ 2,611        | \$ 2,689        | \$ 3,362        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 979           | \$ 34           | \$ 146          | \$ 150          | \$ 155          | \$ 160          | \$ 164          | \$ 169          |
| # Internal, Overheads  | \$ 53            | \$ 5            | \$ 9            | \$ 9            | \$ 8            | \$ 7            | \$ 7            | \$ 7            |
| # Materials            | \$ 3,544         | \$ 242          | \$ 485          | \$ 510          | \$ 535          | \$ 562          | \$ 590          | \$ 620          |
| # Overheads - External | \$ 2,673         | \$ 247          | \$ 439          | \$ 405          | \$ 419          | \$ 367          | \$ 357          | \$ 439          |
| <b>Total</b>           | <b>\$ 21,001</b> | <b>\$ 2,004</b> | <b>\$ 2,671</b> | <b>\$ 2,712</b> | <b>\$ 3,166</b> | <b>\$ 3,206</b> | <b>\$ 3,291</b> | <b>\$ 3,952</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Large Government Jobs - RG&E

### PROJECT INFORMATION

|                                                       |                                        |                                                |                                            |                                    |
|-------------------------------------------------------|----------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0060-RGE-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This program replaces gas mains in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way and where the costs of the project will meet or exceed \$750,000.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This is a program for work mandated by government entities and is necessary to comply with the terms and conditions to occupy public right-of-way. This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects to address the underfunding of this program.

#### Risk of No Action:

RG&E is required to relocate facilities that conflict with proposed municipal jobs in accordance with the terms and conditions to occupy the public right-of-way. Failure to relocate facilities in a timely manner can result in delays to municipal projects, reputational damage and the potential for third-party damage to gas facilities.

#### Project Alternatives:

There are no alternatives to completing work under this program.

#### Basis for Project Estimates

The Government Projects program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. 10% per year was included to adjust for the potential impacts of the magnitude and/or quantity of projects due to the Infrastructure Investment and Jobs Act. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The magnitude and timing of the various increases noted above and the resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 221           | \$ 97           | \$ 12           | \$ 14           | \$ 19           | \$ 21           | \$ 24           | \$ 33           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 22,492        | \$ 1,181        | \$ 2,088        | \$ 2,366        | \$ 3,253        | \$ 3,686        | \$ 4,176        | \$ 5,742        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 454           | \$ 49           | \$ 63           | \$ 65           | \$ 66           | \$ 68           | \$ 71           | \$ 73           |
| # Internal, Overheads  | \$ 822           | \$ 140          | \$ 94           | \$ 95           | \$ 112          | \$ 107          | \$ 114          | \$ 160          |
| # Materials            | \$ 701           | \$ 351          | \$ 39           | \$ 46           | \$ 53           | \$ 61           | \$ 70           | \$ 81           |
| # Overheads - External | \$ 1,988         | \$ 317          | \$ 233          | \$ 234          | \$ 274          | \$ 262          | \$ 279          | \$ 389          |
| <b>Total</b>           | <b>\$ 26,677</b> | <b>\$ 2,135</b> | <b>\$ 2,529</b> | <b>\$ 2,818</b> | <b>\$ 3,777</b> | <b>\$ 4,206</b> | <b>\$ 4,733</b> | <b>\$ 6,477</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## RGE Non LP Srv Repl Program

### PROJECT INFORMATION

|                                                       |                                        |                                                |                                        |                                        |
|-------------------------------------------------------|----------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R5142-RGE-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces or ties-over any service associated with a gas main replacement project that does not qualify as a leak prone service in accordance with the Distribution Integrity Management Program (DIMP).

#### Project Scope:

This program includes the replacement or tie-over of gas services associated with pipe replacement that do not qualify as leak prone services. This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program may contribute to greenhouse gas reductions.

#### Project Benefits:

The replacement of non-leak prone is completed in accordance with the Company's Distribution Integrity Management Program. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future O&M expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of non-state of the art facilities is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements. The work replaces gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public rights-of-way, leak prone gas main replacements per rate cases and tariff or code requirements, actively leaking services etc.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the required mileage each year.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year. This assumes the associated main work would also be delayed. If main work permitting delays do not exist, most likely the associated service work would not be delayed.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

The Non-Leak Prone Service Replacement Program is required by regulation.

#### Project Alternatives:

All non-leak prone services that are associated with pipeline projects are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The Non-Leak Prone Service Replacement program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The resulting costs are included in the Program Cost Forecast and below.

This program will have asset values added to rate base throughout the year, each year.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 209          | \$ 38           | \$ 36           | \$ 41           | \$ 47           | \$ 47           |  |  |
| # CIAC                 | \$ -1,206       | \$ -106         | \$ -182         | \$ -86          | \$ -286         | \$ -546         |  |  |
| # External Services    | \$ 5,369        | \$ 731          | \$ 1,002        | \$ 885          | \$ 913          | \$ 1,838        |  |  |
| # Internal - Non-AC    | \$ 1            | \$ -            | \$ 0            | \$ 0            | \$ 1            | \$ 0            |  |  |
| # Internal, Labor      | \$ 1,531        | \$ 159          | \$ 116          | \$ 266          | \$ 615          | \$ 375          |  |  |
| # Internal, Overheads  | \$ 412          | \$ 47           | \$ 63           | \$ 70           | \$ 114          | \$ 118          |  |  |
| # Materials            | \$ 1,154        | \$ 145          | \$ 216          | \$ 190          | \$ 274          | \$ 329          |  |  |
| # Overheads - External | \$ 1,506        | \$ 201          | \$ 248          | \$ 291          | \$ 436          | \$ 330          |  |  |
| <b>Total</b>           | <b>\$ 8,976</b> | <b>\$ 1,214</b> | <b>\$ 1,499</b> | <b>\$ 1,658</b> | <b>\$ 2,115</b> | <b>\$ 2,492</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 560           | \$ 53           | \$ 63           | \$ 65           | \$ 85           | \$ 87           | \$ 90           | \$ 117          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 20,918        | \$ 1,187        | \$ 2,462        | \$ 2,536        | \$ 3,296        | \$ 3,395        | \$ 3,497        | \$ 4,546        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 2,622         | \$ 49           | \$ 398          | \$ 410          | \$ 422          | \$ 435          | \$ 448          | \$ 461          |
| # Internal, Overheads  | \$ 63            | \$ 8            | \$ 11           | \$ 10           | \$ 9            | \$ 8            | \$ 8            | \$ 9            |
| # Materials            | \$ 2,842         | \$ 353          | \$ 366          | \$ 384          | \$ 404          | \$ 424          | \$ 445          | \$ 467          |
| # Overheads - External | \$ 3,620         | \$ 360          | \$ 581          | \$ 535          | \$ 565          | \$ 494          | \$ 480          | \$ 605          |
| <b>Total</b>           | <b>\$ 30,625</b> | <b>\$ 2,010</b> | <b>\$ 3,881</b> | <b>\$ 3,940</b> | <b>\$ 4,781</b> | <b>\$ 4,843</b> | <b>\$ 4,967</b> | <b>\$ 6,204</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE Government Jobs

### PROJECT INFORMATION

|                                                       |                                        |                                                |                                        |                                        |
|-------------------------------------------------------|----------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0033-RGE-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces gas mains in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way.

#### Project Scope:

Project scope(s) will be determined on an annual basis through the Planning process.

#### Project Benefits:

This is a program for work mandated by government entities and is necessary to comply with the terms and conditions to occupy public right-of-way. This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the projects.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects to address the underfunding of this program.

#### Risk of No Action:

RG&E is required to relocated facilities that conflict with proposed municipal jobs in accordance with the terms and conditions to occupy the public right-of-way. Failure to relocate facilities in a timely manner can result in delays to municipal projects, reputational damage and the potential for third-party damage to gas facilities.

#### Project Alternatives:

There are no alternatives to completing work under this program.

#### Basis for Project Estimates

The Government Projects program costs were based on 2024 costs (years prior to 2024 did not include prevailing wage). The 2024 cost was adjusted each year to account for contractor increases, material increases and internal labor costs. 10% per year was included to adjust for the potential impacts of the magnitude and/or quantity of projects due to the Infrastructure Investment and Jobs Act. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020            | 2021          | 2022            | 2023          | 2024          |  |  |
|------------------------|-----------------|-----------------|---------------|-----------------|---------------|---------------|--|--|
| # AFUDC                | \$ 186          | \$ 28           | \$ 19         | \$ 41           | \$ 49         | \$ 49         |  |  |
| # CIAC                 | \$ -69          | \$ -            | \$ -          | \$ -22          | \$ -47        | \$ -          |  |  |
| # External Services    | \$ 3,072        | \$ 635          | \$ 600        | \$ 1,094        | \$ 420        | \$ 323        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ 320          | \$ 44           | \$ 47         | \$ 115          | \$ 34         | \$ 80         |  |  |
| # Internal, Overheads  | \$ 176          | \$ 39           | \$ 32         | \$ 62           | \$ 23         | \$ 20         |  |  |
| # Materials            | \$ 445          | \$ 182          | \$ 85         | \$ 96           | \$ 35         | \$ 47         |  |  |
| # Overheads - External | \$ 676          | \$ 130          | \$ 134        | \$ 260          | \$ 90         | \$ 62         |  |  |
| <b>Total</b>           | <b>\$ 4,806</b> | <b>\$ 1,057</b> | <b>\$ 918</b> | <b>\$ 1,646</b> | <b>\$ 606</b> | <b>\$ 580</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 743           | \$ 40           | \$ 69           | \$ 78           | \$ 107          | \$ 122          | \$ 138          | \$ 189          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 13,630        | \$ 622          | \$ 1,275        | \$ 1,444        | \$ 1,986        | \$ 2,250        | \$ 2,549        | \$ 3,505        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 578           | \$ 31           | \$ 85           | \$ 87           | \$ 90           | \$ 92           | \$ 95           | \$ 98           |
| # Internal, Overheads  | \$ 16            | \$ 5            | \$ 2            | \$ 2            | \$ 2            | \$ 2            | \$ 2            | \$ 2            |
| # Materials            | \$ 728           | \$ 223          | \$ 57           | \$ 66           | \$ 76           | \$ 88           | \$ 101          | \$ 117          |
| # Overheads - External | \$ 1,916         | \$ 227          | \$ 239          | \$ 240          | \$ 277          | \$ 265          | \$ 280          | \$ 387          |
| <b>Total</b>           | <b>\$ 17,612</b> | <b>\$ 1,148</b> | <b>\$ 1,727</b> | <b>\$ 1,917</b> | <b>\$ 2,538</b> | <b>\$ 2,818</b> | <b>\$ 3,165</b> | <b>\$ 4,299</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Rt 15 Corridor Safety Enhancements

### PROJECT INFORMATION

|                                                       |                                        |                                        |                                            |                                    |
|-------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006747       | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The NYS DOT PIN 4015.47 - Route 15 Corridor Safety Enhancement Project includes rehabilitating and widening Route 15 (West Henrietta Road) from I-390 in the Town of Brighton to Route 252 interchange in the Town of Henrietta, Monroe County. Existing gas mains and facilities in-conflict with the NYS DOT's project will be replaced, relocated or retired as-needed to comply with new roadway layout and project scope

#### Project Scope:

This project includes replacing approximately 12,000 linear feet of various pipe diameters, from 2-inch to 8-inch SWP gas main with 1,550 linear feet of 4-inch HDPE and 14,500 LF of 6-inch HDPE.

#### Project Benefits:

RG&E is obligated to relocate existing facilities located within the public rights-of-way that interfere with municipal projects. RG&E has planned, scoped and phased the associated gas infrastructure work to coordinate with the NYS DOT's timelines where possible. This project is located in Brighton and Henrietta, and provides gas service to Brighton and Henrietta, these areas are not designated as a disadvantaged community (DAC). This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

RG&E is required to relocate facilities that conflict with proposed municipal jobs in accordance with the terms and conditions to occupy the public right-of-way. Failure to relocate facilities in a timely manner can result in delays to municipal projects, reputational damage and the potential for third-party damage to gas facilities.

#### Project Alternatives:

None.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Thruway Park/Hendrix Rd Short Segment

### PROJECT INFORMATION

|                                                       |                                        |                                        |                                            |                                    |
|-------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006756       | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The purpose of this project is to comply with the Pipeline and Hazardous Materials Safety Administration (PHMSA) Mega Rule requirements related to Maximum Allowable Operating Pressure (MAOP) reconfirmation for transmission pipelines. To achieve compliance with this regulation, three (3) transmission short segments have been included in this program for replacement.

#### Project Scope:

Replace 29 linear feet of 20-inch SWP pipe with a Maximum Allowable Operating Pressure (MAOP) of 250-psig. This section of main is part of the CM-2-B-CM1 pipeline.

This project provides gas service to areas designated as disadvantaged community (DAC).

This project does not change greenhouse gas emissions.

#### Project Benefits:

49 CFR Part 192.624 mandates that the Company must review and confirm suitability of pressure test data, records and information in establishing pipeline MAOP across the entire transmission pipeline system. If documentation does not support the established MAOP, the Company is required to remediate in a manner established in Code to establish pipeline MAOP.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase. If the deferment is too long could expose the company to fines and penalties.

#### Risk of No Action:

Operating a Transmission system that is out of compliance would increase regulatory scrutiny, potentially resulting in fines and reputational loss.

#### Project Alternatives:

There are six (6) methods of remediation per 49 CFR 192.624 including:

1. Pressure Test
2. Pressure Reduction
3. Engineering Critical Assessment
4. Pipe Replacement
5. Pressure Reductions for pipeline segment with small Potential Impact Radius
6. Alternative Technology

The Company has evaluated the defined methods of remediation for each segment and have determined that Method 4 – Pipe Replacement is the most viable alternative.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,149        | \$ -        | \$ -        | \$ 1,149        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 67           | \$ -        | \$ -        | \$ 67           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 1            | \$ -        | \$ -        | \$ 1            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 14           | \$ -        | \$ -        | \$ 14           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 184          | \$ -        | \$ -        | \$ 184          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,415</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,415</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Burben Way Short Segment

### PROJECT INFORMATION

|                                                       |                                        |                                        |                                            |                                    |
|-------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006757       | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

The purpose of this project is to comply with the Pipeline and Hazardous Materials Safety Administration (PHMSA) Mega Rule requirements related to Maximum Allowable Operating Pressure (MAOP) reconfirmation for transmission pipelines. To achieve compliance with this regulation, three (3) transmission short segments have been included in this program for replacement.

#### Project Scope:

Replace 26 linear feet of 22.5-inch SWP pipe with a Maximum Allowable Operating Pressure (MAOP) of 250-psig. This section of main is part of the CM-1 pipeline.

This project provides gas service to areas designated as disadvantaged community (DAC).

This project does not change greenhouse gas emissions.

#### Project Benefits:

49 CFR Part 192.624 mandates that the Company must review and confirm suitability of pressure test data, records and information in establishing pipeline MAOP across the entire transmission pipeline system. If documentation does not support the established MAOP, the Company is required to remediate in a manner established in Code to establish pipeline MAOP.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase. If the deferment is too long could expose the company to fines and penalties.

#### Risk of No Action:

Operating a Transmission system that is out of compliance would increase regulatory scrutiny, potentially resulting in fines and reputational loss.

#### Project Alternatives:

There are six (6) methods of remediation per 49 CFR 192.624 including:

1. Pressure Test
2. Pressure Reduction
3. Engineering Critical Assessment
4. Pipe Replacement
5. Pressure Reductions for pipeline segment with small Potential Impact Radius
6. Alternative Technology

The Company has evaluated the defined methods of remediation for each segment and have determined that Method 4 – Pipe Replacement is the most viable alternative.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total         | 2025        | 2026        | 2027        | 2028        | 2029          | 2030        | 2031        |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|
| # AFUDC                | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 684        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 684        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 40         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 40         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 0          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0          | \$ -        | \$ -        |
| # Materials            | \$ 7          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 7          | \$ -        | \$ -        |
| # Overheads - External | \$ 81         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 81         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 811</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 811</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## 900, 920 Penfield-Walworth Rd Short Seg

### PROJECT INFORMATION

|                                                       |                                        |                                        |                                            |                                    |
|-------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006758       | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Mandatory | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2028              | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The purpose of this project is to comply with the Pipeline and Hazardous Materials Safety Administration (PHMSA) Mega Rule requirements related to Maximum Allowable Operating Pressure (MAOP) reconfirmation for transmission pipelines. To achieve compliance with this regulation, three (3) transmission short segments have been included in this program for replacement.

#### Project Scope:

Replace 425 linear feet of 16-inch Steel Wrapped Protected (SWP) pipe with a Maximum Allowable Operating Pressure (MAOP) of 250-psig. This section of main is part of the CM-3 pipeline.  
This project provides gas service to areas designated as disadvantaged community (DAC).  
This project does not change greenhouse gas emissions.

#### Project Benefits:

49 CFR Part 192.624 mandates that the Company must review and confirm suitability of pressure test data, records and information in establishing pipeline MAOP across the entire transmission pipeline system. If documentation does not support the established MAOP, the Company is required to remediate in a manner established in Code to establish pipeline MAOP.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase. If the deferment is too long could expose the company to fines and penalties.

#### Risk of No Action:

Operating a Transmission system that is out of compliance would increase regulatory scrutiny, potentially resulting in fines and reputational loss.

#### Project Alternatives:

There are six (6) methods of remediation per 49 CFR 192.624 including:

1. Pressure Test
2. Pressure Reduction
3. Engineering Critical Assessment
4. Pipe Replacement
5. Pressure Reductions for pipeline segment with small Potential Impact Radius
6. Alternative Technology

The Company has evaluated the defined methods of remediation for each segment and have determined that Method 4 – Pipe Replacement is the most viable alternative.

### Basis for Project Estimates

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

### FINANCIAL INFORMATION

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

### Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

### Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total    | 2025 | 2026 | 2027 | 2028     | 2029 | 2030 | 2031 |
|------------------------|----------|------|------|------|----------|------|------|------|
| # AFUDC                | \$ -     | \$ - | \$ - | \$ - | \$ -     | \$ - | \$ - | \$ - |
| # CIAC                 | \$ -     | \$ - | \$ - | \$ - | \$ -     | \$ - | \$ - | \$ - |
| # External Services    | \$ 2,290 | \$ - | \$ - | \$ - | \$ 2,290 | \$ - | \$ - | \$ - |
| # Internal - Non-AC    | \$ -     | \$ - | \$ - | \$ - | \$ -     | \$ - | \$ - | \$ - |
| # Internal, Labor      | \$ 134   | \$ - | \$ - | \$ - | \$ 134   | \$ - | \$ - | \$ - |
| # Internal, Overheads  | \$ 2     | \$ - | \$ - | \$ - | \$ 2     | \$ - | \$ - | \$ - |
| # Materials            | \$ 43    | \$ - | \$ - | \$ - | \$ 43    | \$ - | \$ - | \$ - |
| # Overheads - External | \$ 322   | \$ - | \$ - | \$ - | \$ 322   | \$ - | \$ - | \$ - |
| <b>Total</b>           | \$ 2,791 | \$ - | \$ - | \$ - | \$ 2,791 | \$ - | \$ - | \$ - |

### Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |



# **NYSEG Gas Modernization**

## Remote Telemetry Unit (RTU) Replace Prog

### PROJECT INFORMATION

|                                                       |                                            |                                     |                                            |                                    |
|-------------------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006752           | <b>Charge Code:</b><br>Gas          | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

The Remote Telemeter Units (RTUs) are in-field, micro-processors, that provide a link between real-time equipment processes with the Companies' Supervisor Control and Data Acquisition (SCADA) system. RTUs are integral components of NYSEG and RGE's gas system that allow Gas Control to remotely monitor, measure, and control equipment in critical areas of the gas transmission and distribution system such as system pressure endpoints, areas of low pressure, gate and regulator stations. The alarming capabilities and data from the RTUs provide visibility and awareness of potential areas of concern within the gas system and provides information necessary for the safe and reliable distribution of natural gas to end-users. This project will replace the remaining outdated RTUs within NYSEG's gas distribution system with current models that will increase the visibility, control, performance, and responsiveness in key areas of the gas system, while also removing the reliance on obsolete technology needed to operate the outdated RTUs (i.e. dedicated Windows 95 computers). RTU locations will also receive modifications with support from the Telecom group to incorporate cellular connectivity to the sites, allowing for modern, timely, and reliable system monitoring and communications between Gas Energy Control Center (ECC) and the RTU sites. Improvements to sites' electrical layouts, capabilities, or code-compliance issues will be considered and addressed on a case-by-case basis during the RTU replacement work if they are deemed necessary to the completion of the project.

#### Project Scope:

Of the 178 RTUs operating in NYSEG's gas system, approximately 83 (47%) are discontinued Emerson ROC300-Series models that are obsolete and no longer supported by the manufacturer. This determination is based on factors such as discontinued support from the vendor for these models, no current or future updates to the units' firmware, unavailability of replacement parts, and the various obsolete technologies that must be retained to communicate with them. The RTU Replacement Program will remediate these issues by replacing the remaining ROC300 (ROCPAC/FlashPAC) units with new Emerson FB3000 RTUs that are compatible with current SCADA technology. The FB3000 model has been selected by Gas System Planning, in collaboration with stakeholders including Gas Control and Gas Operations as an effective replacement because of their compatibility with the existing Modbus protocol that SCADA currently uses to monitor units and the FBxConnect software (successor to the software used by ROC300 and FloBoss 107 models), allowing for a more seamless transition from ROC300 units as compared to other technologies that require the purchase and implementation of additional software to utilize them. Additionally, the FB3000 is specifically designed for natural gas applications and contains built-in firmware that supports a variety of gas flow calculation methods that can perform complex gas calculations and deliver actionable data specific to utility needs. Some of the standards the FB3000 uses for natural gas measurement include but are not limited to: American Gas Association (AGA) 3, AGA5, AGA7, AGA8, AGA9, AGA11, and ISO 5167. Further, NYSEG has recently installed several FB3000 units at remote locations and stations with positive results with integration and performance. Installing these units will result in efficiency gains in material standardization, training, and operation and maintenance of the units. Therefore, the FB3000 will be installed at all RTU locations included in the scope of this project as part of an effort to improve system monitoring reliability, remove the need to retain obsolete equipment necessary to access outdated RTUs and create a standardized collection of modern devices that operate using current SCADA technology for monitoring, operation, and communication.

Historically, these remote sites rely on landline telephonic equipment for communication to the ECC. This project proposes the installation of cellular communications equipment, allowing for modernized back-up communication, system redundancy, and the future retirement of traditional telephone systems. This will help reduce recurring connection interruptions and/or disconnections experienced with on-site landline phones along with diminishing support services to these landlines from external telecommunication providers. These improvements will provide more timely and reliable communications between system monitoring groups and on-site personnel.

An evaluation of each sites' electrical compatibility with the new RTUs will be performed prior to installation. Modifications or improvements deemed necessary to the completion of the project will be considered on a case-by-case basis.

RTUs are located across the NYSEG service territory, some are located within Disadvantaged Communities.

#### Project Benefits:

This project will improve system monitoring reliability, visibility, and communications to system pressure endpoints, areas of low pressure, gate and regulator stations throughout the NYSEG divisions by upgrading approximately 83 locations with modern equipment and cellular coverage.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

**Risk of No Action:**

No action would result in the reliance on obsolete and antiqued equipment and present reliability risk upon equipment failures.

**Project Alternatives:**

Replace only the outdated RTUs with new equipment. Do not perform modifications for cellular coverage at any RTU locations as part of this project.

This alternative would still allow for improved remote monitoring, measurement, and control of new FB3000 RTUs, resulting in increased visibility and reliability of key areas of NYSEG's gas system. However, as existing landline telephonic equipment at sites deteriorates and support services from providers diminish or dissolve completely, cellular communications must be installed in the future to maintain contact. This will result in additional spending in the form of maintenance of existing infrastructure & equipment, site re-evaluations, modifications, and improvements beyond what may be included as part of this project.

**Basis for Project Estimates**

Based on 83 units that are to be replaced across the NYSEG territory, 27 of the locations require replacement/cellular only, 28 locations require minimal to moderate upgrades and 28 locations require extensive upgrades. Based on vendor estimates, the locations that require replacement/cellular upgrades the costs are as follows (external costs only):

- RTU materials, contractor labor and mobilization was estimated to be \$20K per site

- Cost of cellular Communication Study and Gas Cellular materials kit was estimated to be \$10K per site

Based on vendor estimates, the locations that require minimal to moderate upgrades the costs are as follows (external costs only):

- RTU materials, contractor labor and mobilization was estimated to be \$20K per site

- Cost of cellular Communication Study and Gas Cellular materials kit was estimated to be \$10K per site

- Electrical/site upgrades was estimated to be \$20K per site

Based on vendor estimates, the locations that require minimal to moderate upgrades the costs are as follows (external costs only):

- RTU materials, contractor labor and mobilization was estimated to be \$20K per site

- Cost of cellular Communication Study and Gas Cellular materials kit was estimated to be \$10K per site

- Electrical/site upgrades was estimated to be \$40K per site

Engineering, Project Management and site evaluations are estimated to be approximately \$25K per site based on prior project actuals.

The program is planned to be executed uniformly over a four year period. Inflation factors were added to the above costs and the resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025        | 2026            | 2027            | 2028            | 2029            | 2030        | 2031        |
|------------------------|------------------|-------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 720           | \$ -        | \$ 167          | \$ 175          | \$ 184          | \$ 193          | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 7,431         | \$ -        | \$ 1,724        | \$ 1,810        | \$ 1,901        | \$ 1,996        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 372           | \$ -        | \$ 86           | \$ 91           | \$ 95           | \$ 100          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 1,015         | \$ -        | \$ 291          | \$ 241          | \$ 237          | \$ 245          | \$ -        | \$ -        |
| # Materials            | \$ 372           | \$ -        | \$ 86           | \$ 91           | \$ 95           | \$ 100          | \$ -        | \$ -        |
| # Overheads - External | \$ 696           | \$ -        | \$ 200          | \$ 165          | \$ 163          | \$ 168          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 10,604</b> | <b>\$ -</b> | <b>\$ 2,555</b> | <b>\$ 2,573</b> | <b>\$ 2,675</b> | <b>\$ 2,801</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## Gas Transportation Sys Software Upgrade

### PROJECT INFORMATION

|                                                       |                                            |                                        |                                         |                                    |
|-------------------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-007159           | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Foster, Todd | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing           | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The Gas Tracking System (GTS) is a critical software component to Gas Supply's day-to-day operations. GTS monitors and manages ESCO nominations, hourly and daily usage, capacity releases, usage imbalances including imbalance cash outs, and ESCO billing on NYSEG's distribution system. Without this system, the process would be extremely time consuming and manual for employees in Gas Supply, which also increases the risk of manual entry error and costing the Companies money to resolve imbalance issues.

The GTS software upgrade project is necessary for this rate case due to the outdated software currently being utilized. The original software was designed and built in 2014 with minimal to no upgrades performed since its original inception. Due to the outdated nature of the design, the software has limited capabilities to meet NYSEG's critical day-to-day requirements seen in today's environment. An upgrade to the system would increase employee efficiency, streamline a process to improve daily processes, cash outs, billing needs, and month-end accounting. It would also bring the system up to today's software coding and cyber security standards that are magnitudes ahead of when it was originally designed. This project is planned with expectation to fix any missed opportunities during the previous software build, and design for future needs so another implementation isn't needed for quite some time.

Gas Supply would need approximately \$1,960,000 for NYSEG's portion of the project starting in 2027 to initiate the design, pay for the build out, and implement the new program.

This project effects our regulatory bodies because ESCO's have rights under regulatory law that NYSEG is required to manage and follow. If not managed correctly, NYSEG risks penalty by New York regulatory commissions.

#### Project Scope:

The scope of this project is to open a Request For Price (RFP) in the near term to determine who will be the project consultants and/or software developers for the new Gas Tracking System. The initial timeline would be to discuss design specification once the rate case is accepted and approved by the commission. Current plan would be 2026 when the Rate Case is approved. Once the Rate Case is approved, and design is discussed, we would move to the development and implementation process for the software expected to be completed by end of 2027. This would also allow for testing against the current software with full usage within Gas Supply to begin in early 2028.

This new software will be replacing the current Gas Tracking System that is in place and was built in 2014 by Convergence, our consultants.

#### Project Benefits:

The current Gas Tracking System used in Gas Supply was originally designed in 2014. The vintage nature of the back-end coding has created severe limitations to the program that limit employee efficiency and requires extra manual work to make critical updates to day-to-day activities as well as month end activities in regards to ESCO nominations, capacity management and capacity releases. Implementing a new software will improve efficiency for not only Gas Supply, but also Billing and Risk Management. It will reduce or eliminate the need for manual entry by current employees, and the need for our consultants to have to work to fix any issues that are currently "locked" to employees and can only be fixed by the consultants.

There are multiple financial benefits that go along with this project. Employee time will become more efficient and optimized. The new software may also improve capacity optimization from ESCO's that has a direct impact to NYSEG's customers on the Gas Cost Reconciliation. It will also reduce the need for consultants to assist on a more regular basis. Non-financial benefits will be the streamlining of data between Gas Supply and Billing and Risk to limit questions from changes that occur in the current GTS.

The reason Gas Supply is requesting this upgrade is due to some issues we have had on a more regular basis where there are calculation errors in some parts of the software. This has let either extensive manual intervention from a current Gas Supply Employee, or the need for a consultant to work on back-end data to fix errors that are crucial to Billing and Risk management to accurately and confidently finish month-end closing.

**Project Risks and Mitigation Plan:**

The top risk for this project is the Rate Case taking longer to settle than expected. This project, due to spending only being allowed if it is accepted by Staff, cannot move forward until we have approval to do so in the Rate Case. This would push off the timeline to get started later than early 2027. A delay in the start date of design, development and implementation may move some capital spend to a later date and push some development spend into the 2028 capital year.

The main preventative measure would be to do as much due diligence before hand. We can put this project out for RFP, select a software developer, and possibly begin the design process depending on what templates a company may have. This would reduce the timeline needed for the whole project to be into full functionality for the team, and may keep the capital spending on track if the Rate Case does not settle on our current projected timeline.

There is no contingency plan as we do not have capital money to spend on any upgrades to this project.

**Risk of No Action:**

The consequences of this project not being undertaken will be to continue to have data issues within the software that require manual intervention from current employees or a consultant. Some of these data issues occur during critical times such as month-end close, and can cause major hold ups in certain processes needed to be done by a deadline. This requires more employee hours.

In regards to regulatory implications, the current software imposes a risk to our regulatory requirements when calculations are not done correctly. NYSEG can risk penalties or financial cash-outs less favorable to the Companies.

The financial impacts are more designed towards the limitations of optimizations from the ESCO's capacity that directly effects NYSEG. If the software can better optimize their capacity, RG&E customers may see a financial benefit.

Stakeholders may also benefit from this upgrade due to the Gas Cost Incentive Mechanism (GCIM) where some of the capacity release net revenue is sent back to stakeholders.

Capacity optimization is the main opportunity that may be missed if this software upgrade is not implemented in this rate case.

If no action is taken, an upgrade to this software may not be performed until the next rate case. This could potentially put the software near the 20 year life mark where the vintage nature of the design will only increase the manual needs performed by current Gas Supply employees, and take away from efforts they could be placing elsewhere.

**Project Alternatives:**

The top alternative solution would be to pay for a large software upgrade by the current consultants, Convergence, to the current GTS software.

They were the original designers and may be able to do an upgrade for cheaper than a full implementation. However, there are still some concerns that have come to light from conversations with Convergence that certain upgrades may be limited or not possible due to the original design of the software. To upgrade the current GTS software, the cost may be close to a full new software implementation where the overall usage and efficiency may be much better.

We are currently investigating cost proposals to see which would be the better option, but do not have enough information to make a decision at this moment.

The preferred option would be to fully replace the software with a new up to date software that is built specifically for our needs. The team has seen some demos from software companies that would drastically improve our efficiencies and current process, as well as an elevated level of cyber-security compared to the current software. It will streamline workflows and reduce employee hours needed for manual workflows. There are also possibilities of software that work with Gas Supply and Billing and Risk to manage everything in one place.

**Basis for Project Estimates**

The basis of the cost estimation is in its very early stages. Using the original cost of the Gas Tracking System built in 2014, the cost was approximately \$2,000,000. Using an inflation metric from 2014, we estimated the cost of a new build to be approximately \$4,000,000 for a combined product benefiting both NYSEG and RG&E. We are in the process of putting out an RFP to get an idea of costs for a new system or upgrade the current Gas Tracking System, depending on the capabilities of the software developers. The \$1,960,000 for NYSEG's portion of the project is a safe estimate to ensure all our costs are accounted for and the new upgrade is designed to optimize our current and future needs for years to come.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Total                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,960        | \$ -        | \$ -        | \$ 1,960        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,960</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,960</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG OQ Training Equipment

### PROJECT INFORMATION

|                                         |                                            |                                        |                                            |                                    |
|-----------------------------------------|--------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                   | <b>Project ID:</b><br>PRJ-007519           | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Ribeiro, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Operations | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing |

**Project description:**

Capital funding dedicated to Operator Qualification and Technical Training tools and equipment.

**Project Scope:**

Enhance Companies' capability of qualifying and testing employees by implementing new training facilities and the acquisition of tools and equipment necessary. RG&E is proposing to build 1 new center in Rochester at Scottsville Rd building while NYSEG is proposing to upscale its training facility at Johnson City and build 1 new one at the Oneonta Service Center. Also included in the Companies' capital funding, is the acquisition of 1 (one) mobile trailer for in-loco testing and training purposes.

**Project Benefits:**

The acquisition of new tools and equipment will improve testing capabilities, allowing for more thorough and accurate qualification of employees. This investment in infrastructure will contribute to safer and more reliable pipeline operations, ultimately enhancing the overall effectiveness and efficiency of the training programs. Additionally, the inclusion of a mobile trailer for in-loco testing and training will increase accessibility to remote locations, reducing travel time and minimizing disruptions to operations. This ensures that all employees, regardless of their location, receive the necessary training without logistical hurdles.

**Project Risks and Mitigation Plan:**

If funding is not made available the project can't be implemented. The mitigation strategy is to keep current condition with increased number of travel and down-time to get employees qualified. (e.g RGE employees travelling to Binghamton)

**Risk of No Action:**

Increased costs and down-time associated to travel expenses. Non-compliance with Operator Qualification regulations and a less qualified workforce, increasing the likelihood of accidents and operational errors.

**Project Alternatives:**

Outsourced program and third party facilities have shown to be more expensive and disruptive to operations.

**Basis for Project Estimates**

Existing contract costs for applicable materials and vendor quotes.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total    | 2025 | 2026   | 2027   | 2028  | 2029  | 2030   | 2031  |
|------------------------|----------|------|--------|--------|-------|-------|--------|-------|
| # AFUDC                | \$ -     | \$ - | \$ -   | \$ -   | \$ -  | \$ -  | \$ -   | \$ -  |
| # CIAC                 | \$ -     | \$ - | \$ -   | \$ -   | \$ -  | \$ -  | \$ -   | \$ -  |
| # External Services    | \$ -     | \$ - | \$ -   | \$ -   | \$ -  | \$ -  | \$ -   | \$ -  |
| # Internal - Non-AC    | \$ -     | \$ - | \$ -   | \$ -   | \$ -  | \$ -  | \$ -   | \$ -  |
| # Internal, Labor      | \$ -     | \$ - | \$ -   | \$ -   | \$ -  | \$ -  | \$ -   | \$ -  |
| # Internal, Overheads  | \$ 156   | \$ - | \$ 45  | \$ 22  | \$ 8  | \$ 8  | \$ 63  | \$ 11 |
| # Materials            | \$ 1,061 | \$ - | \$ 255 | \$ 158 | \$ 61 | \$ 61 | \$ 458 | \$ 67 |
| # Overheads - External | \$ 90    | \$ - | \$ 26  | \$ 13  | \$ 5  | \$ 4  | \$ 36  | \$ 7  |
| Total                  | \$ 1,307 | \$ - | \$ 325 | \$ 193 | \$ 73 | \$ 73 | \$ 558 | \$ 85 |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Networks ECTRM

### PROJECT INFORMATION

|                                          |                                            |                                     |                                      |                                    |
|------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                    | <b>Project ID:</b><br>PRJ-003591           | <b>Charge Code:</b><br>Gas          | <b>Project Sponsor:</b><br>Emmi, Dan | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Energy Services | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing        | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

The goal of this project is to replace Avangrid Network's current Energy Supply Transaction Risk Management System (Allegro) with a modern Energy Credit Trading Risk Management (ECTRM) system. NYSEG and RG&E have used several systems after moving away from spreadsheets. Starting with ZiNet for electric and GMS for natural gas, then transitioning to Allegro 7.5 in 2005, followed by an upgrade to our current system Allegro 8 in 2015.

An ECTRM system is used to manage all wholesale contracts for electric and natural gas purchases, electric transmission and gas pipeline transportation and storage contracts. It is used to capture and confirm transactions, track purchases and movement of natural gas on pipelines and in and out of storage fields. The system is critical to the accurate monthly closing process, and payment and issuance of wholesale invoices. It is used to monitor our electric and natural gas hedging program, and counterparty credit. This system is used to track all wholesale transactions, the value of these transaction is over \$2 billion dollars per year.

This is a core system in compliance with internal controls and review by our external auditors. The system needs to be upgraded so that it is running on current supported software, and the system itself is a supported system by the vendor.

#### Project Scope:

Allegro is used across Avangrid Networks and will require a cross OPCO team to prepare and issuing an RFP, then selecting a winning vendor, followed by contract negotiations. Many of the members of this team were part of prior ECTRM projects, which will provide the needed expertise to complete this upgrade.

The new ECTRM is expected to do all that Allegro current does and add support for items that Allegro cannot handle, such as gas storage tracking, and an SAP interface.

In addition to the ECTRM software, the Windows server 2012 software, Microsoft SQL 2012 will be upgraded. The server software (if an in-house hosting and not a cloud-based system is chosen) will need to be upgraded to match the specifications of the chosen software.

An RFP is expected to be issued in the early summer of 2025, with a vender chosen and contract signed in 2025. The upgrade would occur in 2026 with a go live date of January 1, 2027.

#### Project Benefits:

Both the wholesale markets and ECTRM software has evolved in the last decade. Upgrading to modern software will allow us to use software that has been designed to handle new transaction types like RECs and ZECs that did not exist a decade ago.

Most importantly is it will allow Avangrid to use a ECTRM system that is being actively maintained and patched by the developer to mitigate current security threats. In addition to the ECTRM, the underlying Windows operating system and SQL version supported by Allegro are all versions that were released a decade ago. Upgrading to a current ECTRM will allow Avangrid to retire these old pieces of software and their associated risks.

#### Project Risks and Mitigation Plan:

The current ECTRM used by Avangrid Networks is Allegro 8.

- 1) There are only a few vendors that produce ECTRM software - this will limit our ability during contract negotiations to achieve the combination of price, quality and timeline desired. With approximately four vendors/products in this market, we lack a variety of alternatives. To mitigate, we will evaluate all possibly companies who can produces this software - ideally both power and natural gas in one system but may need to work with 2 systems (one for each commodity) to ensure price, quality and timeline.
- 2) Lack of vendor knowledge - our experience is that there are few very experienced programmers/implementors at these companies and they move on from their company every few years to the next. They may have 10 years of experience but only 2 with their current product. To mitigate, we will review the vendors proposed staff for the project and include contractual language to limit our risk for their staffing issues.
- 3) There will be reference checks made with customers prior to awarding the winning bidder to ensure that the vendor's claims in the presentations agree with the product that is in production including the support that they receive from the vendor.

**Risk of No Action:**

It is a Tier 1 Financial System for Avangrid, the current system is aged and no longer supported by the vendor so replacement is needed to avoid failure. Failure here would breach Regulatory and Internal Compliance and could present itself as a Material Deficiency on the Avangrid audited financial statements.

The current ECTRM used by Avangrid Networks is Allegro version 8.0.9901.0 released in 2015. The application server which Allegro is installed on runs Windows Server 2012 R2 with MS .NET Framework 4.5. The latest database server that Allegro is certified to operate on is Microsoft SQL Server 2012 x64, and the latest version of Windows that Allegro has certified the application for is Windows 8 (Avangrid is about to deploy Windows 11). Based upon the above versions of Windows were all released over a decade ago, there are many risks still running programs that old.

**Project Alternatives:**

It is a Tier 1 Financial System for Avangrid, the current system is aged and no longer supported by the vendor so replacement is needed to avoid failure. Failure here would breach Regulatory and Internal Compliance and could present itself as a Material Deficiency on the Avangrid audited financial statements.

An option is to continue using Allegro 8, with the aging and unsupported underlying Windows software. This is the cheapest short term solution, but at some point either the software will break, or Avangrid will determine that the unsupported Windows software is too great a risk to continue to operate. With the lead time involved in an ECTRM upgrade and the potential impacts on our ability to pay wholesale electric and gas invoices, complete monthly closing and comply with internal controls this is the highest risk alternative.

**Basis for Project Estimates**

In 2020 an RFP was launched to replace or upgrade Allegro to the latest version depending on the winning bidder. Those RFP bids are now five years old; they did at the time accurately reflect market prices for ECTRM software installed and configured for Avangrid Network's requirements. Unfortunately, the winner bidder of that RFP could not fulfill the deliverables of the contract, and the contract was terminated. With the number of vendors that produce ECTRM type of software being so limited, and with each contract negotiated, and because each installation is unique in scope there is no reliable way to estimate the going market price of ECTRM software. Thus, we have chosen to proceed using historical software costs from the prior RFP launched in 2020.

# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2020        | 2021        | 2022          | 2023          | 2024        |  |  |
|------------------------|---------------|-------------|-------------|---------------|---------------|-------------|--|--|
| # AFUDC                | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| # External Services    | \$ 303        | \$ -        | \$ -        | \$ 184        | \$ 119        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 303</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 184</b> | <b>\$ 119</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2025         | 2026          | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|---------------|--------------|---------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 990        | \$ 10        | \$ 490        | \$ 490        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -          | \$ -         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 990</b> | <b>\$ 10</b> | <b>\$ 490</b> | <b>\$ 490</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2025        | 2026        | 2027        | 2028        | 2029        | 2030        | 2031        |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |



## NYSEG Track & Traceability Functionality

### PROJECT INFORMATION

|                                                       |                                            |                                        |                                          |                                    |
|-------------------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-004082           | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Horgan, Brian | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026            | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

This project set has been established to provide field resources the capability to collect digital geolocational data for Avangrid Gas assets as they are installed during the construction process. High accuracy GPS positional data will be utilized as a key element of the mapping update process. These updates are essential to the maintenance of accurate and reliable Geographic Information Systems (GIS) and associated records, as mandated by regulatory authorities.

#### Project Scope:

This project includes the implementation of a GIS Track and Trace infrastructure. Track and Traceability Functionality capabilities are intended to comply with regulatory requirements to allow Gas Operators to develop and maintain current TVC (Traceable, Verifiable and Complete) Recordkeeping practices for Gas Distribution Facilities.

#### Project Benefits:

Project implementation of Track & Traceability Functionality is part of an Avangrid organizational wide initiative to have all Gas Operating Companies become compliant with pending regulatory requirements. The PHMSA Megarule has mandated the ability of System Operators to develop and maintain "traceable, verifiable, complete and up to date records of the gas distribution system in each region of operation". Regulatory authorities at the state level will determine when the PHMSA Megarule parameters become statute.

This program is applicable to all areas served by NYSEG and RG&E, inclusive of those designated as disadvantaged communities (DAC). This program does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

There is a risk that procurement durations or negotiations with the preferred vendors protract that could lead to schedule impacts and associated delays in project implementation.

There is a risk that vendor bids exceed current budget for the purchase of required software applications leading to modifications of work scope or increased budget requirements. Additional costs would be offset by finding offsets in other lower priority projects or programs within the portfolio.

There is a risk that application development and / or integration efforts between vendor based products and Avangrid Network will encounter challenges which negatively impact project schedule that would delay project implementation.

#### Risk of No Action:

No action will result in a record system that is inadequate to comply with new and modern standards.

#### Project Alternatives:

None.

#### Basis for Project Estimates

The project was estimated based on estimates for first round bids received from four vendors that participated in the bid for Southern Connecticut Gas (SCG). The costs were added for overheads based on projects (Slaterville LPM NYSEG, 28% and Jay St RGE 25%). See the attached estimates for details.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026     | 2027   | 2028 | 2029 | 2030 | 2031 |
|------------------------|-----------------|------|----------|--------|------|------|------|------|
| # AFUDC                | \$ -            | \$ - | \$ -     | \$ -   | \$ - | \$ - | \$ - | \$ - |
| # CIAC                 | \$ -            | \$ - | \$ -     | \$ -   | \$ - | \$ - | \$ - | \$ - |
| # External Services    | \$ 1,319        | \$ - | \$ 1,219 | \$ 100 | \$ - | \$ - | \$ - | \$ - |
| # Internal - Non-AC    | \$ -            | \$ - | \$ -     | \$ -   | \$ - | \$ - | \$ - | \$ - |
| # Internal, Labor      | \$ 160          | \$ - | \$ 140   | \$ 20  | \$ - | \$ - | \$ - | \$ - |
| # Internal, Overheads  | \$ -            | \$ - | \$ -     | \$ -   | \$ - | \$ - | \$ - | \$ - |
| # Materials            | \$ -            | \$ - | \$ -     | \$ -   | \$ - | \$ - | \$ - | \$ - |
| # Overheads - External | \$ -            | \$ - | \$ -     | \$ -   | \$ - | \$ - | \$ - | \$ - |
| <b>Total</b>           | <b>\$ 1,479</b> | \$ - | \$ 1,359 | \$ 120 | \$ - | \$ - | \$ - | \$ - |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG - Gas SCADA Upgrade

### PROJECT INFORMATION

|                              |                                  |                                         |                               |                                    |
|------------------------------|----------------------------------|-----------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG        | <b>Project ID:</b><br>PRJ-007474 | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Gas | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Chapero, Jorge | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The project entails upgrading and migrating the NYSEG Gas SCADA system, which operates on AVEVA's OASyS SCADA system version 2018 SP3. This version is under extended support until June 2025. After this deadline, AVEVA will only provide security vulnerability hotfixes and critical system failure patches that are externally accessible. Consequently, any operational issues deemed non-critical by AVEVA will not receive necessary updates, significantly impacting the Energy Control Center (ECC) operations. This upgrade/migration aims to transition to a newer gas SCADA system and establish an interface with a historian database, essential for improved functionality, data management, and compliance with industry standards. NYSEG will not get fixes for issues that AVEVA may not consider critical but are critical for the ECC operations. Additionally, they will not support any operating system or database upgrade, which means that any new hardware that requires a newer version of the operating system and/or database cannot be implemented. This will limit NYSEG's ability to use newer hardware if the existing one needs to be replaced due to failures.

#### Project Scope:

This project's scope includes:

1. Upgrading the existing AVEVA OASyS SCADA system version 2018 SP3 to a newer or alternative gas SCADA platform that meets operational requirements and supports current technologies.
2. Implementing a historian database to ensure reliable data collection, storage, and retrieval, facilitating enhanced analytical capabilities and regulatory compliance.
3. Ensuring that the new system architecture is compatible with modern operating systems and hardware, allowing for future scalability and integration.
4. Training personnel on the new system to ensure a smooth transition and continued operational effectiveness.
5. Establishing robust backup and recovery protocols to minimize downtime and data loss during the transition period.

#### Project Benefits:

1. Continuous Support: Transitioning to a supported SCADA platform ensures that NYSEG receive timely updates and fixes for critical issues, enhancing operational reliability.
2. Improved Security: A newer system will incorporate updated security features and protocols, reducing vulnerabilities and safeguarding critical infrastructure.
3. Enhanced Data Management: Integrating a historian database will improve data analytics, reporting capabilities, and long-term data storage, aiding in better decision-making.
4. Future-Proofing Operations: Upgrading hardware and software will ensure compatibility with modern technologies, boosting operational efficiency and responsiveness to market demands.
5. Training and Development: The new system will help employees gain competence, resulting in better operations management and enhanced situational awareness.

#### Project Risks and Mitigation Plan:

- Delayed Transition: the migration could take longer than anticipated, impacting operational continuity.
- Mitigation: Develop a detailed project timeline with milestones, conduct regular progress reviews, and allocate appropriate resources.
- Resistance to Change: Staff may resist adopting the new system.
- Mitigation: Involve Staff early in the process, provide comprehensive training, and highlight the new benefits.
- Data Migration Issues: Risks associated with transferring historical Data to the new system can lead to Data loss or corruption.
- Mitigation: Implement a thorough Data migration plan with validation and backup measures for all critical data.
- Integration Challenges: The new SCADA system may face hurdles in integrating with existing infrastructure.
- Mitigation: conduct compatibility assessments before implementation and work with experienced vendors for seamless integration.

1. Loss of Vendor Support: Continuing with the current system beyond June 2025 will leave NYSEG and MNG without critical support for operational issues.
2. Increased Vulnerabilities: Due to outdated software and a lack of updates, the system will become more exposed to security threats, compromising the integrity of the gas supply infrastructure.
3. Operational Downtime: System failures could lead to significant disruptions, impacting service delivery without updates or the ability to implement new hardware.
4. Compliance Issues: The inability to upgrade systems or address non-critical issues could lead to compliance violations with industry regulations, resulting in financial and operational penalties.

Stay with AVEVA OASyS SCADA: Retain the current system but accept increased risks associated with reliance on limited support after June 2025.

The project estimate is based on previous system upgrades in 2017:

1. Vendor Quotes 2017: Current pricing from potential SCADA vendors and hardware suppliers for new systems and equipment.
2. Internal Resource Availability: Assess the availability of in-house resources for implementation and training versus the need for external consultants.
3. Contingency Planning: Inclusion of a contingency budget for unexpected costs related to data migration and post-migration support.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **RG&E Gas Modernization**

## Gas Transportation Sys Software Upgrade

### PROJECT INFORMATION

|                                                       |                                            |                                        |                                         |                                    |
|-------------------------------------------------------|--------------------------------------------|----------------------------------------|-----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-007114           | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Foster, Todd | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing           | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The Gas Tracking System (GTS) is a critical software component to Gas Supply's day-to-day operations. GTS monitors and manages ESCO nominations, hourly and daily usage, capacity releases, usage imbalances including imbalance cash outs, and ESCO billing on RG&E's distribution system. Without this system, the process would be extremely time consuming and manual for employees in Gas Supply, which also increases the risk of manual entry error and costing the Companies money to resolve imbalance issues.

The GTS software upgrade project is necessary for this rate case due to the outdated software currently being utilized. The original software was designed and built in 2014 with minimal to no upgrades performed since its original inception. Due to the outdated nature of the design, the software has limited capabilities to meet RG&E's critical day-to-day requirements seen in today's environment. An upgrade to the system would increase employee efficiency, streamline a process to improve daily processes, cash outs, billing needs, and month-end accounting. It would also bring the system up to today's software coding and cyber security standards that are magnitudes ahead of when it was originally designed. This project is planned with expectation to fix any missed opportunities during the previous software build, and design for future needs so another implementation isn't needed for quite some time.

Gas Supply would need approximately \$2,040,000 for RG&E's portion of the project starting in 2027 to initiate the design, pay for the build out, and implement the new program.

This project effects our regulatory bodies because ESCO's have rights under regulatory law that RG&E is required to manage and follow. If not managed correctly, RG&E risks penalty by New York regulatory commissions.

#### Project Scope:

The scope of this project is to open a Request For Price (RFP) in the near term to determine who will be the project consultants and/or software developers for the new Gas Tracking System. The initial timeline would be to discuss design specification once the rate case is accepted and approved by the commission. Current plan would be 2026 when the Rate Case is approved. Once the Rate Case is approved, and design is discussed, we would move to the development and implementation process for the software expected to be completed by end of 2027. This would also allow for testing against the current software with full usage within Gas Supply to begin in early 2028.

This new software will be replacing the current Gas Tracking System that is in place and was built in 2014 by Convergence, our consultants.

#### Project Benefits:

The current Gas Tracking System used in Gas Supply was originally designed in 2014. The vintage nature of the back-end coding has created severe limitations to the program that limit employee efficiency and requires extra manual work to make critical updates to day-to-day activities as well as month end activities in regards to ESCO nominations, capacity management and capacity releases. Implementing a new software will improve efficiency for not only Gas Supply, but also Billing and Risk Management. It will reduce or eliminate the need for manual entry by current employees, and the need for our consultants to have to work to fix any issues that are currently "locked" to employees and can only be fixed by the consultants.

There are multiple financial benefits that go along with this project. Employee time will become more efficient and optimized. The new software may also improve capacity optimization from ESCO's that has a direct impact to RG&E's customers on the Gas Cost Reconciliation. It will also reduce the need for consultants to assist on a more regular basis. Non-financial benefits will be the streamlining of data between Gas Supply and Billing and Risk to limit questions from changes that occur in the current GTS.

The reason Gas Supply is requesting this upgrade is due to some issues we have had on a more regular basis where there are calculation errors in some parts of the software. This has let either extensive manual intervention from a current Gas Supply Employee, or the need for a consultant to work on back-end data to fix errors that are crucial to Billing and Risk management to accurately and confidently finish month-end closing.

**Project Risks and Mitigation Plan:**

The top risk for this project is the Rate Case taking longer to settle than expected. This project, due to spending only being allowed if it is accepted by Staff, cannot move forward until we have approval to do so in the Rate Case. This would push off the timeline to get started later than early 2027. A delay in the start date of design, development and implementation may move some capital spend to a later date and push some development spend into the 2028 capital year.

The main preventative measure would be to do as much due diligence before hand. We can put this project out for RFP, select a software developer, and possibly begin the design process depending on what templates a company may have. This would reduce the timeline needed for the whole project to be into full functionality for the team, and may keep the capital spending on track if the Rate Case does not settle on our current projected timeline.

There is no contingency plan as we do not have capital money to spend on any upgrades to this project.

**Risk of No Action:**

The consequences of this project not being undertaken will be to continue to have data issues within the software that require manual intervention from current employees or a consultant. Some of these data issues occur during critical times such as month-end close, and can cause major hold ups in certain processes needed to be done by a deadline. This requires more employee hours.

In regards to regulatory implications, the current software imposes a risk to our regulatory requirements when calculations are not done correctly. RG&E can risk penalties or financial cash-outs less favorable to the Companies.

The financial impacts are more designed towards the limitations of optimizations from the ESCO's capacity that directly effects RG&E. If the software can better optimize their capacity, RG&E customers may see a financial benefit.

Stakeholders may also benefit from this upgrade due to the Gas Cost Incentive Mechanism (GCIM) where some of the capacity release net revenue is sent back to stakeholders.

Capacity optimization is the main opportunity that may be missed if this software upgrade is not implemented in this rate case.

If no action is taken, an upgrade to this software may not be performed until the next rate case. This could potentially put the software near the 20 year life mark where the vintage nature of the design will only increase the manual needs performed by current Gas Supply employees, and take away from efforts they could be placing elsewhere.

**Project Alternatives:**

The top alternative solution would be to pay for a large software upgrade by the current consultants, Convergence, to the current GTS software. They were the original designers and may be able to do an upgrade for cheaper than a full implementation. However, there are still some concerns that have come to light from conversations with Convergence that certain upgrades may be limited or not possible due to the original design of the software. To upgrade the current GTS software, the cost may be close to a full new software implementation where the overall usage and efficiency may be much better.

We are currently investigating cost proposals to see which would be the better option, but do not have enough information to make a decision at this moment.

The preferred option would be to fully replace the software with a new up to date software that is built specifically for our needs. The team has seen some demos from software companies that would drastically improve our efficiencies and current process, as well as an elevated level of cyber-security compared to the current software. It will streamline workflows and reduce employee hours needed for manual workflows. There are also possibilities of software that work with Gas Supply and Billing and Risk to manage everything in one place.

**Basis for Project Estimates**

The basis of the cost estimation is in its very early stages. Using the original cost of the Gas Tracking System built in 2014, the cost was approximately \$2,000,000. Using an inflation metric from 2014, we estimated the cost of a new build to be approximately \$4,000,000 for a combined product benefiting both NYSEG and RG&E. We are in the process of putting out and RFP to get an idea of costs for a new system or upgrade the current Gas Tracking System, depending on the capabilities of the software developers. The \$2,040,000 for RG&E's portion of the project is a safe estimate to ensure all our costs are accounted for and the new upgrade is designed to optimize our current and future needs for years to come.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,040        | \$ -        | \$ -        | \$ 2,040        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,040</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2,040</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## RGE CGI Standardization Program

### PROJECT INFORMATION

|                                         |                                            |                                                |                                                |                                        |
|-----------------------------------------|--------------------------------------------|------------------------------------------------|------------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                    | <b>Project ID:</b><br>PRJ-004514           | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Scappaticci, Thomas | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Operations | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                  | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Gas Operations Departmental expenditures are related to the purchase of combustible gas indicators and accessory equipment needed and used by gas field employees daily or by special need to inspect, operate, maintain, repair or construct the gas distribution system. Equipment purchases are based on business needs including safety, systematic replacement (end of life or damage), geographic location of equipment and availability in emergency situations or workload, new technology or regulatory requirements, increased workload or scope of responsibility.

#### Project Scope:

The scope of the Avangrid CGI Standardization Program is to replace and standardize the existing CGI units across Avangrid Gas territories, addressing the current inconsistencies in manufacturers and functionality. CGI units are the first line of defense in leak detection and are used by all first responders throughout Avangrid for emergency response as well as routine work. The company is working to standardize to a single unit across OpCos. The new unit will not only provide for standardization across OpCos, it will provide enhanced features not present in existing equipment.

#### Project Benefits:

This program allows the Company to meet safety and Occupational Safety and Health Administration (OSHA) requirements through replacement of tools and equipment at the end of their useful lives.

Standardization: Standardizing CGI units across the RG&E Gas territory improves consistency and compatibility, enabling seamless operations and communication among opcos and departments.

Enhanced Functionality: The new CGI units offer advanced features, including GPS tracking for leak investigations, enabling precise location identification and regulatory tracing/accountability.

Financial Benefits: The program leverages the heavy discount offered by the selected vendor when purchasing CGI units in bulk, maximizing cost savings for RG&E and optimizes the utilization of available funds.

Technological Advancement: Implementing modern CGI units introduces RG&E to the latest technologies, providing a solid foundation for future advancements and integration with other digital systems.

#### Project Risks and Mitigation Plan:

A significant number of the existing CGI units are aging and due for replacement. Risks of continued use are increased maintenance costs, equipment failure and replacement at higher costs. The current plan is to replace all CGIs through a competitive bid process which will yield lower per unit costs.

#### Risk of No Action:

The inability to source new CGIs could lead to occupational inefficiencies and injuries.

#### Project Alternatives:

Alternatives are to continue to use existing older equipment and maintain until the manufacturer no longer supports the CGIs or until equipment failure. Then replace at higher per unit cost.

#### Basis for Project Estimates

The basis for the project estimate is through a competitive bid process.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 108          | \$ 108        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,112        | \$ -          | \$ 996        | \$ 117        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,220</b> | <b>\$ 108</b> | <b>\$ 996</b> | <b>\$ 117</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE Track & Traceability Functionality

### PROJECT INFORMATION

|                                                       |                                            |                                        |                                          |                                    |
|-------------------------------------------------------|--------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-004083           | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Horgan, Brian | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Modernization | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026            | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

This project set has been established to provide field resources the capability to collect digital geolocational data for Avangrid Gas assets as they are installed during the construction process. High accuracy GPS positional data will be utilized as a key element of the mapping update process. These updates are essential to the maintenance of accurate and reliable Geographic Information Systems (GIS) and associated records, as mandated by regulatory authorities.

#### Project Scope:

This project includes the implementation of a GIS Track and Trace infrastructure. Track and Traceability Functionality capabilities are intended to comply with regulatory requirements to allow Gas Operators to develop and maintain current TVC (Traceable, Verifiable and Complete) Recordkeeping practices for Gas Distribution Facilities.

#### Project Benefits:

Project implementation of Track & Traceability Functionality is part of an Avangrid organizational wide initiative to have all Gas Operating Companies become compliant with pending regulatory requirements. The PHMSA Megarule has mandated the ability of System Operators to develop and maintain "traceable, verifiable, complete and up to date records of the gas distribution system in each region of operation". Regulatory authorities at the state level will determine when the PHMSA Megarule parameters become statute.

This program is applicable to all areas served by NYSEG and RG&E, inclusive of those designated as disadvantaged communities (DAC).

This program does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

There is a risk that procurement durations or negotiations with the preferred vendors protract that could lead to schedule impacts and associated delays in project implementation.

There is a risk that vendor bids exceed current budget for the purchase of required software applications leading to modifications of work scope or increased budget requirements. Additional costs would be offset by finding offsets in other lower priority projects or programs within the portfolio.

There is a risk that application development and / or integration efforts between vendor based products and Avangrid Network will encounter challenges which negatively impact project schedule that would delay project implementation.

#### Risk of No Action:

No action will result in a record system that is inadequate to comply with new and modern standards.

#### Project Alternatives:

None.

#### Basis for Project Estimates

The project was estimated based on estimates for first round bids received from four vendors that participated in the bid for Southern Connecticut Gas (SCG). The costs were added for overheads based on projects (Slaterville LPM NYSEG, 28% and Jay St RGE 25%). See the attached estimates for details.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026   | 2027     | 2028 | 2029 | 2030 | 2031 |
|------------------------|-----------------|------|--------|----------|------|------|------|------|
| # AFUDC                | \$ -            | \$ - | \$ -   | \$ -     | \$ - | \$ - | \$ - | \$ - |
| # CIAC                 | \$ -            | \$ - | \$ -   | \$ -     | \$ - | \$ - | \$ - | \$ - |
| # External Services    | \$ 1,011        | \$ - | \$ 100 | \$ 911   | \$ - | \$ - | \$ - | \$ - |
| # Internal - Non-AC    | \$ -            | \$ - | \$ -   | \$ -     | \$ - | \$ - | \$ - | \$ - |
| # Internal, Labor      | \$ 120          | \$ - | \$ -   | \$ 120   | \$ - | \$ - | \$ - | \$ - |
| # Internal, Overheads  | \$ -            | \$ - | \$ -   | \$ -     | \$ - | \$ - | \$ - | \$ - |
| # Materials            | \$ -            | \$ - | \$ -   | \$ -     | \$ - | \$ - | \$ - | \$ - |
| # Overheads - External | \$ -            | \$ - | \$ -   | \$ -     | \$ - | \$ - | \$ - | \$ - |
| <b>Total</b>           | <b>\$ 1,131</b> | \$ - | \$ 100 | \$ 1,031 | \$ - | \$ - | \$ - | \$ - |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE - Gas SCADA Upgrade

### PROJECT INFORMATION

|                              |                                  |                                         |                               |                                    |
|------------------------------|----------------------------------|-----------------------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E         | <b>Project ID:</b><br>PRJ-007475 | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>0          |
| <b>Business Area:</b><br>Gas | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Chapero, Jorge | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The project entails upgrading and migrating the RGE Gas SCADA system, which operates on AVEVA's OASyS SCADA system version 2018 SP3. This version is under extended support until June 2025. After this deadline, AVEVA will only provide security vulnerability hotfixes and critical system failure patches that are externally accessible. Consequently, any operational issues deemed non-critical by AVEVA will not receive necessary updates, significantly impacting the Energy Control Center (ECC) operations. This upgrade/migration aims to transition to a newer gas SCADA system and establish an interface with a historian database, which is essential for improved functionality, data management, and compliance with industry standards. RGE will not get fixes for issues that AVEVA may not consider critical but are critical for the ECC operations. Additionally, they will not support any operating system or database upgrade, which means that any new hardware that requires a newer version of the operating system and/or database cannot be implemented. This will limit RGE's ability to use newer hardware if the existing one needs to be replaced due to failures.

#### Project Scope:

This project's scope includes:

1. Upgrading the existing AVEVA OASyS SCADA system version 2018 SP3 to a newer or alternative gas SCADA platform that meets operational requirements and supports current technologies.
2. Implementing a historian database to ensure reliable data collection, storage, and retrieval, facilitating enhanced analytical capabilities and regulatory compliance.
3. Ensuring that the new system architecture is compatible with modern operating systems and hardware, allowing for future scalability and integration.
4. Training personnel on the new system to ensure a smooth transition and continued operational effectiveness.
5. Establishing robust backup and recovery protocols to minimize downtime and data loss during the transition period.

#### Project Benefits:

1. Continuous Support: Transitioning to a supported SCADA platform ensures that RGE receives timely updates and fixes for critical issues, enhancing operational reliability.
2. Improved Security: A newer system will incorporate updated security features and protocols, reducing vulnerabilities and safeguarding critical infrastructure.
3. Enhanced Data Management: Integrating a historian database will improve data analytics, reporting capabilities, and long-term data storage, aiding in better decision-making.
4. Future-Proofing Operations: Upgrading hardware and software will ensure compatibility with modern technologies, boosting operational efficiency and responsiveness to market demands.
5. Training and Development: The new system will help employees gain competence, resulting in better operations management and enhanced situational awareness.

#### Project Risks and Mitigation Plan:

- Delayed Transition: the migration could take longer than anticipated, impacting operational continuity.
- Mitigation: Develop a detailed project timeline with milestones, conduct regular progress reviews, and allocate appropriate resources.
- Resistance to Change: Staff may resist adopting the new system.
- Mitigation: Involve Staff early in the process, provide comprehensive training, and highlight the new benefits.
- Data Migration Issues: Risks associated with transferring historical Data to the new system can lead to Data loss or corruption.
- Mitigation: Implement a thorough Data migration plan with validation and backup measures for all critical data.
- Integration Challenges: the new SCADA system may face hurdles in integrating with existing infrastructure.
- Mitigation: conduct compatibility assessments before implementation and work with experienced vendors for seamless integration.

- Delayed Transition: the migration could take longer than anticipated, impacting operational continuity.
- Mitigation: Develop a detailed project timeline with milestones, conduct regular progress reviews, and allocate appropriate resources.
- Resistance to Change: Staff may resist adopting the new system.
- Mitigation: Involve Staff early in the process, provide comprehensive training, and highlight the new benefits.
- Data migration Issues: Risks associated with transferring historical Data to the new system can lead to Data loss or corruption.
- Mitigation: Implement a thorough Data migration plan with validation and backup measures for all critical data.
- Integration Challenges: the new SCADA system may face hurdles in integrating with existing infrastructure.
- Mitigation: conduct compatibility assessments before implementation and work with experienced vendors for seamless integration.

Stay with AVEVA OASvS SCADA: Retain the current system but accept increased risks associated with reliance on limited support after June 2025.

The project estimate is based on previous system upgrades in 2017:

1. Vendor Quotes 2017: Current pricing from potential SCADA vendors and hardware suppliers for new systems and equipment.
2. Internal Resource Availability: Assess the availability of in-house resources for implementation and training versus the need for external consultants.
3. Contingency Planning: Inclusion of a contingency budget for unexpected costs related to data migration and post-migration support.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026            | 2027            | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|-------------|-----------------|-----------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ 15           | \$ -        | \$ 6            | \$ 5            | \$ 2          | \$ 1          | \$ 1          | \$ 1          |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 1,828        | \$ -        | \$ 872          | \$ 581          | \$ 91         | \$ 91         | \$ 96         | \$ 96         |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Overheads  | \$ 1,817        | \$ -        | \$ 1,030        | \$ 775          | \$ 3          | \$ 3          | \$ 3          | \$ 3          |
| # Materials            | \$ 1,994        | \$ -        | \$ 1,550        | \$ 388          | \$ 56         | \$ -          | \$ -          | \$ -          |
| # Overheads - External | \$ 373          | \$ -        | \$ 256          | \$ 91           | \$ 8          | \$ 6          | \$ 6          | \$ 6          |
| <b>Total</b>           | <b>\$ 6,027</b> | <b>\$ -</b> | <b>\$ 3,714</b> | <b>\$ 1,840</b> | <b>\$ 159</b> | <b>\$ 101</b> | <b>\$ 106</b> | <b>\$ 106</b> |

[illegible]

## RGE OQ Training Equipment

### PROJECT INFORMATION

|                                         |                                              |                                        |                                            |                                    |
|-----------------------------------------|----------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                    | <b>Project ID:</b><br>PRJ-007517             | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Ribeiro, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Operations | <b>Rate Case Category</b><br>Asset Condition | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing |

**Project description:**

Capital funding dedicate to Operator Qualification and Technical Training tools and equipment

**Project Scope:**

Enhance Companies capability of qualifying and testing employees by implementing new training facilities and the acquisition of tools and equipment necessary

**Project Benefits:**

The acquisition of new tools and equipment will improve testing capabilities, allowing for more thorough and accurate qualification of employees. This investment in infrastructure will contribute to safer and more reliable pipeline operations, ultimately enhancing the overall effectiveness and efficiency of the training programs.

**Project Risks and Mitigation Plan:**

If funding is not made available the project can't be implemented. The mitigation strategy is to keep current condition with increased number of travel and down-time to get employees qualified. (e.g RGE employees travelling to Binghamton)

**Risk of No Action:**

Increased costs and down-time associated to travel expenses. Non-compliance with Operator Qualification regulations and a less qualified workforce, increasing the likelihood of accidents and operational errors.

**Project Alternatives:**

Outsourced program and third party facilities have shown to be more expensive and disruptive to operations.

**Basis for Project Estimates**

Quotes from vendors and historical information

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total  | 2025 | 2026   | 2027  | 2028  | 2029  | 2030   | 2031  |
|------------------------|--------|------|--------|-------|-------|-------|--------|-------|
| # AFUDC                | \$ -   | \$ - | \$ -   | \$ -  | \$ -  | \$ -  | \$ -   | \$ -  |
| # CIAC                 | \$ -   | \$ - | \$ -   | \$ -  | \$ -  | \$ -  | \$ -   | \$ -  |
| # External Services    | \$ -   | \$ - | \$ -   | \$ -  | \$ -  | \$ -  | \$ -   | \$ -  |
| # Internal - Non-AC    | \$ -   | \$ - | \$ -   | \$ -  | \$ -  | \$ -  | \$ -   | \$ -  |
| # Internal, Labor      | \$ -   | \$ - | \$ -   | \$ -  | \$ -  | \$ -  | \$ -   | \$ -  |
| # Internal, Overheads  | \$ 8   | \$ - | \$ 4   | \$ 0  | \$ 0  | \$ 0  | \$ 3   | \$ 0  |
| # Materials            | \$ 715 | \$ - | \$ 255 | \$ 36 | \$ 36 | \$ 37 | \$ 310 | \$ 40 |
| # Overheads - External | \$ 90  | \$ - | \$ 41  | \$ 5  | \$ 5  | \$ 4  | \$ 31  | \$ 4  |
| Total                  | \$ 813 | \$ - | \$ 300 | \$ 42 | \$ 41 | \$ 41 | \$ 344 | \$ 45 |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]





# **NYSEG Gas Reliability**

## NYSEG Leak Prone Pipe Replace Prog - LPP

### PROJECT INFORMATION

|                                                       |                                          |                                                |                                            |                                        |
|-------------------------------------------------------|------------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0030-NYSEG-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Annually prioritize and replace leak prone pipe throughout NYSEG's Gas Service Areas. Leak prone pipe is prioritize utilizing a risk-based methodology and includes replacement of leak prone pipe in areas designated as disadvantaged communities. Replacing leak prone pipe with new, start of the art materials, helps reduce future potential greenhouse gas emissions.

#### Project Scope:

This mandatory compliance program replaces gas pipes identified as leak prone in accordance with the Company's Leak Prone Pipe Criteria and Distribution Integrity Management Program (DIMP). The Leak Prone Pipe Criteria includes mains prioritized to replace due to conditions such as leaks, manufacturing and construction defects, type of materials (ex. bare steel, wrought iron, etc). This work includes, but is not limited to, replacing gas mains and services that meet the leak prone criteria that are in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way; leak prone gas pipe replacements; tariff or code requirements; and actively leaking mains. This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Benefits:

The leak prone pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the required mileage each year.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted is the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects and/or mileage goals would not be met.

The Leak Prone Pipe Replacement Program is required by regulation.

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The Leak Prone Pipe program was based on 2024 actuals (years prior to 2024 did not include prevailing wage) and have been increased on an annual basis for contractor cost increases, material cost increases and internal labor cost increases. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The mileage in years 2024 is 24 miles of replacement. The actual 2024 mileage was adjusted downward to arrive at 24 miles in years 2026 and beyond. There are also years that have individually listed leak prone pipe projects (Line E Replacement in 2026, Slaterville Rd in 2027, Vestal Parkway in 2029 and Portageville Pennycook Rd in 2030). The mileage from these projects was subtracted from the program mileage and the cost per mile of the program was used to reduce the cost from the program in these years. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

| Capital Details:       | Total             | 2020             | 2021             | 2022             | 2023             | 2024             |  |  |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 2,541          | \$ 460           | \$ 499           | \$ 457           | \$ 584           | \$ 541           |  |  |
| # CIAC                 | \$ -787           | \$ -             | \$ -             | \$ -787          | \$ -             | \$ -             |  |  |
| # External Services    | \$ 67,361         | \$ 13,197        | \$ 12,369        | \$ 13,104        | \$ 13,782        | \$ 14,909        |  |  |
| # Internal - Non-AC    | \$ 2              | \$ 2             | \$ -             | \$ 0             | \$ -0            | \$ -             |  |  |
| # Internal, Labor      | \$ 4,851          | \$ 1,164         | \$ 972           | \$ 1,071         | \$ 1,003         | \$ 642           |  |  |
| # Internal, Overheads  | \$ 12,881         | \$ 2,838         | \$ 2,246         | \$ 2,931         | \$ 2,385         | \$ 2,481         |  |  |
| # Materials            | \$ 6,919          | \$ 1,428         | \$ 1,186         | \$ 1,523         | \$ 1,562         | \$ 1,219         |  |  |
| # Overheads - External | \$ 8,079          | \$ 2,095         | \$ 1,505         | \$ 1,788         | \$ 1,428         | \$ 1,263         |  |  |
| <b>Total</b>           | <b>\$ 101,848</b> | <b>\$ 21,183</b> | <b>\$ 18,778</b> | <b>\$ 20,088</b> | <b>\$ 20,744</b> | <b>\$ 21,055</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ 9,574          | \$ 821           | \$ 1,134         | \$ 1,168         | \$ 1,460         | \$ 1,504         | \$ 1,549         | \$ 1,937         |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 215,880        | \$ 7,268         | \$ 27,381        | \$ 24,659        | \$ 36,510        | \$ 35,735        | \$ 38,734        | \$ 45,593        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ 6,660          | \$ 741           | \$ 915           | \$ 943           | \$ 971           | \$ 1,000         | \$ 1,030         | \$ 1,061         |
| # Internal, Overheads  | \$ 32,864         | \$ 3,525         | \$ 4,684         | \$ 3,388         | \$ 4,521         | \$ 4,370         | \$ 5,121         | \$ 7,256         |
| # Materials            | \$ 20,025         | \$ 5,331         | \$ 2,160         | \$ 2,268         | \$ 2,382         | \$ 2,501         | \$ 2,626         | \$ 2,757         |
| # Overheads - External | \$ 21,524         | \$ 2,295         | \$ 3,099         | \$ 2,258         | \$ 2,954         | \$ 2,862         | \$ 3,345         | \$ 4,711         |
| <b>Total</b>           | <b>\$ 306,527</b> | <b>\$ 19,982</b> | <b>\$ 39,373</b> | <b>\$ 34,683</b> | <b>\$ 48,798</b> | <b>\$ 47,971</b> | <b>\$ 52,405</b> | <b>\$ 63,315</b> |

[illegible]

## LPP Portageville Pennycook Rd Main

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006749         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2030              | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

These projects are being separated from the NYSEG Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 5,361 linear feet of 10-inch leak prone pipe with 12-inch Steel Wrapped Protected (SWP) 124-psig pipe, east of Portageville, between valves S#751-T2(N) to S#75102, primarily within agricultural fields.

This project is not located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029        | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # External Services    | \$ 3,105        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 3,105        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Internal, Labor      | \$ 174          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 174          | \$ -        |
| # Internal, Overheads  | \$ 446          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 446          | \$ -        |
| # Materials            | \$ 376          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 376          | \$ -        |
| # Overheads - External | \$ 306          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 306          | \$ -        |
| <b>Total</b>           | <b>\$ 4,408</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,408</b> | <b>\$ -</b> |

[illegible]

## LPP Vestal Parkway East

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006750         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

These projects are being separated from the NYSEG Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 4,400 linear feet of 8-inch Bare Steel main with 4,400 linear feet of 12-inch High Density Polyethylene (HDPE) main along State Rt 434 – Vestal Parkway East from Airborne Ave northeast. 1800 Vestal Parkway east, as well as replacement of approximately 140 linear feet of 3-inch Bare Steel branch main with 140 linear feet of 4-inch HDPE on Brady Lane south from the intersection of Vestal Parkway and Brady Lane.

This project is not located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 2,427        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2,427        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 119          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 119          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 300          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 300          | \$ -        | \$ -        |
| # Materials            | \$ 143          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 143          | \$ -        | \$ -        |
| # Overheads - External | \$ 205          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 205          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,194</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 3,194</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## LPP Line E Replacement

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006748         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

These projects are being separated from the NYSEG Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 3,300 linear feet of 6-inch and 8-inch Steel Wrapped Protected (SWP) leak prone pipe with 3,300 linear feet 8-inch SWP 250-psig main from the Flat Iron Gate Station parallel to State Route 16 north To Barnum Road in Olean.

This project is not located in an area designated as a disadvantaged community (DAC)

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.



The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,519        | \$ -        | \$ 1,519        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 78           | \$ -        | \$ 78           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 260          | \$ -        | \$ 260          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 90           | \$ -        | \$ 90           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 178          | \$ -        | \$ 178          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,125</b> | <b>\$ -</b> | <b>\$ 2,125</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## LPP\_Slaterville Rd

### PROJECT INFORMATION

|                                                       |                                            |                                                |                                            |                                    |
|-------------------------------------------------------|--------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UH-N0005757-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability   | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

These projects are being separated from the NYSEG Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

Replacement of approximately 14,000 linear feet of 10-inch leak prone steel pipe with 12-inch Steel Wrapped Protected (SWP) 124-psig pipe utilizing the existing right of way (ROW) from the East Ithaca Point of Delivery (POD) northwest along Slaterville Rd to Pine Tree Rd, north along Pine Tree Rd to the Ellis Hollow district regulator station. The project also includes the retirement of existing field regulators and the replacement of long-side services with individual dedicated services.

This project provides gas service to areas designated as disadvantaged communities (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Boswell Hill South

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006760         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

This project is being separated from the NYSEG Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the installation of approximately 6,181 linear feet of 12-inch SWP main and includes horizontal directional drill crossings of the Nanticoke Creek (which includes a US Army Corp of Engineering flood control levee), the Susquehanna River and NYS Route's 17 and 434.

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

This project provides gas service to areas designated as a disadvantaged communities (DAC).

This project contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement. This LPP replacement has unique and challenging natural barriers to cross which limit the amount of feasible alternatives.

The project estimated has been developed by comparison to the Vienna Rd Main Replacement constructed in 2022. The proposed project attributes and comparator project attributes are shown in the attached estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Walton Deposit Reservoir

### PROJECT INFORMATION

|                                                       |                                          |                            |                               |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------|-------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-007521         | <b>Charge Code:</b><br>Gas | <b>Project Sponsor:</b><br>0  | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>0 | <b>Start Date:</b><br>H1 2028 | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

This project addresses Public Safety, Asset Condition and System Reliability with the replacement of an existing 6-inch Steel Wrapped and Protected (SWP) that was installed in 1950 and has reached the end of its service life.

#### Project Scope:

The Project includes the installation of approximately 37,000 linear feet of 12-inch high density polyethylene (HDPE) and 8-inch SWP main starting 5,000-feet east of Neale Rd (in the Town of Deposit), running generally east along an existing NYSEG right-of-way (ROW), crossing the City of New York Cannonsville Reservoir lands on the West Branch of the Delaware River to tie into the existing NYSEG 8-inch SWP main at Dryden Rd (in the Town of Walton). The proposed main will replace an approximately equal footage of 6-inch steel Leak Prone Pipe.

#### Project Benefits:

The existing Deposit-Walton Lateral is a 70-plus year-old, one-way, radial feed that operates at a Maximum Allowable Operating Pressure (MAOP) of 124-psig. It is the sole means for delivery of natural gas to the Village of Walton, which has a population of approximately 3,100. Natural gas is delivered to industrial customers (large food processing facility) in Walton, as well as critical care facilities including hospitals, the local fire department, numerous commercial businesses and the local school district campus.

Due to the Walton-Deposit Lateral length, size and system demand, the Walton terminal has a predicted Design Day pressure drop to 81 psig (65% MAOP). 8-inch SWP is to be installed for the approximately 3,000-feet Horizontal Directional Drill (HDD) at the reservoir crossing due to tensile strength material requirements.

Main replacement will improve delivery pressure and therefore reliability for existing NYSEG gas customers during the coldest conditions.

This project is not located in an area designated as a disadvantaged community (DAC).

This project contributes to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

Replace existing 6-inch steel LPM with new 8-inch SWP main. This alternative was not selected because steel main installation would incur future O&M expense for corrosion protection.

Replace existing 6-inch steel LPM with new 8-inch HDPE main. This alternative was not selected because the extreme difficulty of terrain and environmental permitting favor installation of a larger standard size when the job is executed, to maximize the benefit to the system for the labor costs incurred.

For individual projects that will be issued to contractors that have Master Service Agreements that are in the detailed design phase, the Companies utilize a database (entitled Contractor Payment System or CPS) that contains the pricing for each contractor, for each PayID, and for the various divisions that the Companies serve. The engineer or field planner responsible for design of the project enter the various aspects (pipe size, pipe material, type of installation (i.e. trenched or drilled), asphalt, sand, backfill, size of services, special services or additional labor needed, etc.) and the quantities of each item to develop the estimates for each project. The CPS system includes the cost of the labor, equipment and contractor sourced materials for the projects. These costs are then entered into the Companies' SAP system to complete the total project cost estimate. Individual elements of the project (i.e. specific length and size of pipe, tracer wire lengths, quantity and type of specific fittings, quantity, size and type of valves, etc.) are entered into SAP to collect the cost of the company provided materials. The internal labor performed during construction is based on the length and activity being performed. These attributes are built into and calculated by SAP to provide a cost of the internal labor. AFUDC and overheads are calculated by SAP based on various components of the cost. The final, total project cost is calculated in SAP.

\_\_\_\_\_

## FINANCIAL INFORMATION

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028            | 2029             | 2030             | 2031        |
|------------------------|------------------|-------------|-------------|-------------|-----------------|------------------|------------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -             | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -             | \$ -        |
| # External Services    | \$ 18,950        | \$ -        | \$ -        | \$ -        | \$ 2,000        | \$ 8,500         | \$ 8,450         | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -             | \$ -             | \$ -        |
| # Internal, Labor      | \$ 855           | \$ -        | \$ -        | \$ -        | \$ 285          | \$ 285           | \$ 285           | \$ -        |
| # Internal, Overheads  | \$ 2,579         | \$ -        | \$ -        | \$ -        | \$ 390          | \$ 1,142         | \$ 1,047         | \$ -        |
| # Materials            | \$ 2,355         | \$ -        | \$ -        | \$ -        | \$ 1,000        | \$ 1,355         | \$ -             | \$ -        |
| # Overheads - External | \$ 1,734         | \$ -        | \$ -        | \$ -        | \$ 286          | \$ 748           | \$ 701           | \$ -        |
| <b>Total</b>           | <b>\$ 26,473</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 3,961</b> | <b>\$ 12,030</b> | <b>\$ 10,482</b> | <b>\$ -</b> |

[illegible]

## NYSEG Leak Prone Srv Repl Program

### PROJECT INFORMATION

|                                                       |                                          |                                                |                                        |                                        |
|-------------------------------------------------------|------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UI-N0031-NYSEG-GS  | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces services that are classified as leak prone in accordance with the Company's Leak Prone Pipe Criteria and Distribution Integrity Management Program (DIMP).

#### Project Scope:

The Leak Prone Service Criteria includes services to replace based upon conditions such as leaks, manufacturing and construction defects, type of materials (ex. bare steel, wrought iron, etc). This work includes, but is not limited to, replacing gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way, leak prone gas main replacements, tariff or code requirements and actively leaking services.

This program is applicable to all areas served by NYSEG, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Benefits:

Leak prone gas services are required to be replaced by various regulations to keep customers and their properties safe from potential gas leaks. The replacement of leak prone services is completed in accordance with the Company's Distribution Integrity Management Program. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future O&M expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of vintage facilities is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the required mileage each year.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year. This assumes the associated main work would also be delayed. If main work permitting delays do not exist, most likely the associated service work would not be delayed.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

The Leak Prone Service Replacement Program is required by regulation.

#### Project Alternatives:

All leak prone services that are associated with pipeline projects are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The Leak Prone Service Replacement program is highly aligned with the mileage of the LPP program mileage and the quantity of services per mile. In 2024, 1140 services were replaced that resulted in 41 services per mile and an average cost of \$5,307 per service (previous years were not included as 2024 was the first year of prevailing wage). The number of services per mile were held constant over the future years based on 24 miles of LPP replacement. The cost per service was adjusted each year to account for contractor increases, material increases and internal labor costs. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The adjusted cost per service was multiplied by 41 services per mile and the total number of miles each year, i.e. 24 miles to arrive at the total program cost per year. The resulting costs are included in the Program Cost Forecast and below.

This program will have asset values added to rate base throughout the year, each year.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 560           | \$ 83           | \$ 117          | \$ 108          | \$ 110          | \$ 142          |  |  |
| # CIAC                 | \$ -2            | \$ -1           | \$ -            | \$ -1           | \$ -            | \$ -1           |  |  |
| # External Services    | \$ 14,186        | \$ 2,586        | \$ 2,449        | \$ 2,674        | \$ 3,221        | \$ 3,256        |  |  |
| # Internal - Non-AC    | \$ -9            | \$ 1            | \$ -            | \$ -0           | \$ -9           | \$ -            |  |  |
| # Internal, Labor      | \$ 3,521         | \$ 748          | \$ 859          | \$ 753          | \$ 606          | \$ 554          |  |  |
| # Internal, Overheads  | \$ 3,651         | \$ 667          | \$ 765          | \$ 804          | \$ 693          | \$ 722          |  |  |
| # Materials            | \$ 2,617         | \$ 490          | \$ 519          | \$ 546          | \$ 531          | \$ 531          |  |  |
| # Overheads - External | \$ 2,614         | \$ 570          | \$ 581          | \$ 552          | \$ 467          | \$ 444          |  |  |
| <b>Total</b>           | <b>\$ 27,139</b> | <b>\$ 5,145</b> | <b>\$ 5,290</b> | <b>\$ 5,436</b> | <b>\$ 5,619</b> | <b>\$ 5,648</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031             |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| # AFUDC                | \$ 1,482         | \$ 188          | \$ 168          | \$ 173          | \$ 216          | \$ 222          | \$ 229          | \$ 286           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # External Services    | \$ 36,554        | \$ 4,209        | \$ 4,191        | \$ 4,317        | \$ 5,397        | \$ 5,558        | \$ 5,725        | \$ 7,156         |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # Internal, Labor      | \$ 3,961         | \$ 160          | \$ 588          | \$ 605          | \$ 623          | \$ 642          | \$ 661          | \$ 681           |
| # Internal, Overheads  | \$ 6,019         | \$ 788          | \$ 842          | \$ 686          | \$ 770          | \$ 780          | \$ 874          | \$ 1,280         |
| # Materials            | \$ 5,162         | \$ 1,149        | \$ 590          | \$ 619          | \$ 650          | \$ 683          | \$ 717          | \$ 753           |
| # Overheads - External | \$ 4,465         | \$ 512          | \$ 654          | \$ 532          | \$ 581          | \$ 588          | \$ 658          | \$ 940           |
| <b>Total</b>           | <b>\$ 57,643</b> | <b>\$ 7,006</b> | <b>\$ 7,033</b> | <b>\$ 6,932</b> | <b>\$ 8,237</b> | <b>\$ 8,474</b> | <b>\$ 8,864</b> | <b>\$ 11,097</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Town of Pendleton System Improvement

### PROJECT INFORMATION

|                                                       |                                            |                                                |                                              |                                    |
|-------------------------------------------------------|--------------------------------------------|------------------------------------------------|----------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UH-N0005641-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Labombard, Yvette | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability   | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027                | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The Town of Pendleton System Improvement Project is a system capacity project that will increase system pressures throughout the MF51 Lockport pressure system, resolve a system vulnerability, meet customer demand and continue the safe and reliable delivery of natural gas at all times of the year. Currently, at Design Day conditions, system endpoints drop to 18.3 psig (36% MAOP). Restoring pressure above 50% MAOP increases overall system reliability.

#### Project Scope:

The project includes the installation of a new 249-psig to 51-psig district regulator station located in the Town of Pendleton, east of the railroad tracks; approximately 17,000 LF of 6-inch high-density polyethylene (HDPE) distribution main along Murphy Road from the existing 10-inch main on Bear Ridge Road to Campbell Boulevard, then along Campbell Boulevard to Mapleton Road, and then along Mapleton Road to Main Road. Additionally, the project proposes the installation of approximately 2,200 LF of 4-inch HDPE main along Townline Road, from Mapleton Road to Beach Ridge Road, that connects two long dead-end mains.

#### Project Benefits:

At design day conditions, portions of Lockport's 51-psig system in the southwest quadrant (Town of Pendleton) are operating at or below 50% MAOP. NYSEG reported this area as a Vulnerable Location in the July 17, 2020 'Supply and Demand Analysis Related to Service Areas with Known Supply Constraint Vulnerabilities' and the April 26, 2024, Long-Term Plan regulatory filings. This is largely due to steady growth in commercial and residential development requests, including IDA industrial park customer (135 MCFH), Raymond Rd residential development (69.8 MCFH), Clarkview Drive residential development (5.88 MCFH) and Subaru Dealership (2.73 MCFH additional load). Through August of 2024, Lockport Division is ranked third in NYSEG divisions for the number of new gas meter sets installed installations with 60.

The proposed project will result in all of Pendleton operating above 50% MAOP at Design Day conditions, as shown in Figure 4. System endpoints on Townline Road south of Mapleton Road and Townline Road north of Beach Ridge Road increase from approximately 18.3-psig (36% MAOP) and 23.3-psig (46% MAOP) to 36.0-psig (71% MAOP). Additionally, this improvement will increase the low point of Tonawanda Creek Road at Pendale Circle from approximately 21.4-psig (42% MAOP) to 32.0-psig (63% MAOP).

This project is not located in an area designated as a disadvantaged community (DAC).

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

**Risk of No Action:**

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

**Project Alternatives:****Alternative 1:**

This alternative option includes the installation of approximately 17,000 LF of 6-inch HDPE distribution main along Murphy Road from the existing 10-inch main on Bear Ridge Road to Campbell Boulevard, then along Campbell Boulevard to Mapleton Road, and then along Mapleton Road to Main Road.

Additionally, this alternative option proposes the installation of approximately 2,200 LF of 4-inch HDPE main along Townline Road, from Mapleton Road to Beach Ridge Road, that connects two long dead-end mains.

This alternative option was not selected because it does not include the addition of a new district regulator station. Without the new district regulator station, the entire southwest quadrant of the MF51 Lockport pressure system is dependent on one regulator station, 320035A. Additionally, the new district regulator station will improve pressure by an additional 2.5-psig.

**Alternative 2:**

This alternative option includes the installation of a new 249-psig to 51-psig district regulator station located in the Town of Pendleton, east of the railroad tracks; approximately 16,000 LF of 8-inch HDPE distribution main along Bear Ridge Road from Murphy Road to Mapleton Road, then along Mapleton Rd to Main Road.

Additionally, this alternative option proposes the installation of approximately 2,200 LF of 4-inch HDPE main along Townline Road, from Mapleton Road to Bear Ridge Road, that connects two long dead-end mains.

This alternative option was not selected because it requires a larger pipe diameter to achieve the same pressure improvements seen in the proposed project. Replacing the existing gas main along Bear Ridge Road with 6-inch HDPE will not bring pressures in Pendleton above 50% MAOP.

Additionally, a majority of the gas main that would be replaced for this alternative option was installed after 08/01/1971, which is when requirements for mandated cathodic protection (CP) went into effect. Main installed after 08/01/1971 is not classified as leak prone main (LPM). The gas main being replaced in the proposed project was installed between 1967 and 1969.

**Alternative 3:**

This alternative option includes the installation of a new 249-psig to 51-psig district regulator station located in the Town of Pendleton, east of the railroad tracks; approximately 5,400 LF of 4-inch HDPE distribution main along Lockport Junction Road, from Sauders Settlement Rd to Enterprise Drive, that connect two long dead-end mains.

Additionally, this alternative option proposes the installation of approximately 2,200 LF of 4-inch HDPE main along Townline Road, from Mapleton Road to Bear Ridge Road, that connects two long dead-end mains.

This alternative option was not selected because it only increases the low point of Tonawanda Creek Road at Pendale Circle from approximately 21.4-psig (42% MAOP) to 26.7-psig (52% MAOP). With that level of improvement, pressure is at risk of dropping below 50% MAOP within a few years of project completion.

**Basis for Project Estimates**

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ -0         | \$ 2        | \$ 3        | \$ 2        | \$ -8         | \$ -0        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ -33        | \$ -        | \$ -        | \$ -        | \$ -33        | \$ -         |  |  |
| # Internal - Non-AC    | \$ 2          | \$ -        | \$ -        | \$ -        | \$ 2          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ -4         | \$ -        | \$ -        | \$ -        | \$ -4         | \$ -         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Overheads - External | \$ -6         | \$ -        | \$ -        | \$ -        | \$ -6         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ -41</b> | <b>\$ 2</b> | <b>\$ 3</b> | <b>\$ 2</b> | <b>\$ -48</b> | <b>\$ -0</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,645        | \$ -        | \$ -        | \$ 2,645        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 184          | \$ -        | \$ -        | \$ 184          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 236          | \$ -        | \$ -        | \$ 236          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 550          | \$ -        | \$ -        | \$ 550          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 269          | \$ -        | \$ -        | \$ 269          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,884</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 3,884</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Binghamton Anitec System Reinforcement

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006619         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H2 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

This project will improve reliability to the single-fed, SF124 Phelps Street pressure system that is a major feeder main into the Binghamton Gas Distribution System, serving approximately 20,000 gas customers. The project will connect two (2) existing mains together to maximize operational functionality of existing assets. This will create a secondary feed that will provide a level of redundancy to the system, enhancing system reliability for all downstream customers.

#### Project Scope:

The Anitec Pipeline is an existing 400-psig Maximum Allowable Operating Pressure (MAOP) main constructed in 1992 to provide a large quantity of natural gas to an Electric Cogeneration Power Plant located in Binghamton, NY. The plant was retired in 2017 and the natural gas fired turbines were removed from the facility in 2018. Without feeding the power plant, the existing design day load on the main is approximately 3.5 MCFH, with no pressure drop across the 22,790 linear feet main. Without the power plant load, this main is largely functionally obsolete. This project includes reducing operating pressure for the 400-psig MAOP Anitec Pipeline to 124-psig and connecting it to the 124-psig MAOP Port Dickinson System (SF124 Phelps St.).

A new connecting main will be installed at one of three proposed locations, and is between 1100 -1450 linear feet in total length depending on the selected location:

- A.Ely Park
- B.Prospect Street
- C.Cypress Street

A separation valve will be installed at the connection point to facilitate the potential return to operating the Anitec Pipeline at the higher pressure should that be required in the future.

#### Project Benefits:

The existing SF124 Phelps St system is radial-feed from a single gas supply source at the Phelps St Port Dickinson Point of Delivery (POD) station. It serves approximately 20,000 gas services throughout the Binghamton Gas Distribution system. In addition to thousands of residential customers that rely on the gas for heating during the winter, this line provides service to industrial customers such as Triple Cities Metal Finishing, Inc., Binghamton Precast, educational institutions such as SUNY Broome campus and dorms, law enforcement facilities such as Broome County Public Safety and Broome County Jail, and critical care facilities such as Elizabeth Church Manor Campus.

The Anitec 400-psig pipeline was constructed in 1992 to serve an industrial electric cogeneration plant which is no longer in existence. The pipeline remains in service but carries no significant load, serving approximately 35 residential customers.

This project will utilize the available unrealized capacity on the Anitec pipeline to reinforce the single-fed SF124 Phelps St system.

This project strategically utilizes existing gas infrastructure to reinforce and strengthen the Binghamton Gas Distribution system, which reduces the need to install additional pipeline projects and reduces future capital expenditures while eliminating emissions related to construction activities.

All three (3) of the locations identified above are located in an area designated as a disadvantaged community (DAC).

Refer to attached report for greenhouse gas emissions related to this project.

**Project Risks and Mitigation Plan:**

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

**Risk of No Action:**

Continue operation of the SF124 Phelps Street system as single source. This alternative was dismissed due to the lesser Reliability of single source compared to multi-feed systems.

**Project Alternatives:**

Retire the Anitec line. This alternative was dismissed due to the Customer Focus obligation to serve the existing residential customers, as well as the sound condition of the pipe, and the book life remaining on the asset

**Basis for Project Estimates**

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2025        | 2026        | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|---------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 639        | \$ -        | \$ -        | \$ 639        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 34         | \$ -        | \$ -        | \$ 34         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 93         | \$ -        | \$ -        | \$ 93         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 88         | \$ -        | \$ -        | \$ 88         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 63         | \$ -        | \$ -        | \$ 63         | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 917</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 917</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Norwich-DeRuyter Compressor Reliability

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006753         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

During the coldest parts of the year, NYSEG operates the Norwich Compressor Station to maintain adequate downstream pressure on the portion of the DeRuyter Pipeline from Norwich to Oneonta (CM-52 & -53). Without this compressor station, pressures in the Oneonta area will fall to unsafe operating conditions, leading to significant firm customer outages. In consideration of the criticality of this Compressor to the safe and reliable delivery of gas to thousands of customers, NYSEG proposes to install a second Compressor unit at this station.

#### Project Scope:

This project includes the installation of a second Gas Compressor unit at the NYSEG Norwich Compressor Station. When the original station was built, accommodations for a second compressor were designed into the building, controls and piping configuration.

#### Project Benefits:

The 50-mile-long DeRuyter Pipeline is the sole source feed of gas supply to the Norwich and Oneonta gas service areas serving approximately 10,100 customers. The Norwich Compressor Station is located mid-way along the DeRuyter Pipeline in Norwich, NY and was constructed in 2006 and commissioned in early 2007. The Compressor Station was designed to boost pressure in the 10-inch and 8-inch diameter pipeline to support the customers served downstream of Norwich, including those in NYSEG's Oneonta gas distribution system. The Compressor is critical to providing safe and reliable gas service to approximately 5,700 customers during the coldest parts of the year. Generally, the Compressor operates when the pipeline pressure and regulator station inlet pressures downstream of Norwich drop below acceptable levels; this is approximately 190-psig (63% MAOP) at the far end of the pipeline which correlates to a temperature/HDD of approximately 0-10 degrees F (or 55 - 65 HDD). Without the increased pressure support from the Norwich Compressor, Design Day pressure would drop to unsafe levels well below the stated operating requirements of the regulator station equipment likely causing loss of gas service and outages to a majority of the 5,700 customers in the Oneonta gas distribution system.

Since the Norwich Compressor was placed into service, the Oneonta gas distribution system has expanded and grown over the seventeen-year period putting more reliability on the existing equipment during periods of peak customer demand. The current compressor has experienced modifications to its performance over the years to increase operational efficiency and accommodate the changing load demands on the pipeline system however, as the compressor and auxiliary equipment further age, they will increasingly require more maintenance and cost to ensure adequate operability during critical use periods. In addition, spare parts may also become increasingly difficult to locate or procure, especially during a response to upset operating conditions likely when the equipment is most needed. The addition of a second unit will reduce these risk, as well as being more modern and energy efficient with lower O&M related costs, compared to the existing unit. The existing compressor building and related piping facilities were design to accommodate a second compressor unit, which will reduce costly building and site modifications.

Without a backup or redundant unit, this poses an ever-increasing reliability risk for NYSEG to serve its firm customers during the coldest parts of the year. As a result of potential compressor equipment malfunction of the existing, single unit, the Company would likely spend far more in expense responding to an emergency event for customer reights, potential customer property and equipment damage replacements, the coordination of customer warming stations and related services as well as likely legal costs and Regulatory penalties related to the loss of customer gas service.

This project will provide gas service to areas designated as a disadvantaged communities (DAC). This project may contribute toward the reduction of greenhouse gas emissions with equipment that is more energy efficient than the existing unit.

#### Project Risks and Mitigation Plan:

Project risks include permitting delays, weather delays, material delays and contractor availability for construction. The permitting and weather delays would cause the in service date of the project to moved to a later date. Material delays would be handled by working with either other preferred vendors or vendors outside our preferred vendors. If industry wide material delays occur, the planned in-service date would be moved to a later date. Lack of contractor availability would be handled by using other qualified contractors that responded to the bid (i.e. next qualified lowest bid) or delaying the in service of project if there is a substantial increase in the cost of the project from the next qualified bidder.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.



The safety and reliability risks would not be resolved, and as the existing station equipment continues to age, the risk of equipment failure increases.

Another alternative is to build a virtual pipeline terminal in the Oneonta area to accept trucked Compressed Natural Gas or Liquefied Natural Gas. However, given the volume of gas required to satisfy system demand, the scale and magnitude of this alternative is not economically feasible. For instance, the Design Day Peak Hourly Demand Oneonta is approximately 475 MCFH; this equals to approximately 9500 MCF/Day. That would require at least 9 tracker trailers of LNG, or 21 tracker trailers of CNG.

The project estimate for the addition of a second compressor and cooler package at the existing Norwich Compressor station was developed based on a scope of work reflective of the work completed to install the original compressor package in 2007. The cost estimate includes the costs associated with Regulatory mandated safety code requirements and for improvements made since the original construction as a result of equipment failure, troubleshooting and repair solutions. In addition, costs were also based on conversations with mechanical contractors with relevant experience with the work completed during the original phase of the compressor installation, resources with an understanding of current material costs and discussions with the equipment manufacturer (Dearing Compressor & Pump) of the original package with significant experience with compressor facility components and equipment, design, installation, compressor facility maintenance and operations. The project costs are based on 2024 dollars and have been adjusted to compensate for inflation of equipment, materials and internal and external labor increases.

## FINANCIAL INFORMATION

[illegible]

## Goshen System Semi-Perm Peaking Tap

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>PRJ-006754         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Due to localized upstream pipeline gas supply constraints in the NYSEG-Goshen territory, NYSEG has limited gas supply reserve margin and ability to reliability serve existing gas customers during the coldest parts of the year while maintaining contractual gas supply obligations. This project proposes to build a semi-permanent liquified natural gas (LNG) injection tap that would function as peaking facility to ensure reliable gas delivery to existing customers during the coldest parts of the year. This alternate supply reduces the risk of exceeding contractual supply limitations while providing a short-term buffer for economic and growth-related projects that have increased in the area in recent years.

#### Project Scope:

This project includes the land acquisition, permitting and construction of a semi-permanent LNG Supply injection tap into the NYSEG Goshen 120-psig pressure system. This alternate supply will be utilized as a 'peak shaving' facility during the heating season and will be designed to inject up to 100 MCFH.

The project development site will consist of a Metering & Regulation (M&R) building; gas odorization equipment; overpressure protection equipment; a connection point to the LNG vaporizer outlet; a pad surface suitable to stage 2-3 tractor-trailers and associated LNG equipment; security measures (fencing, lighting, SCADA) and a back-up generator. NYSEG is currently completing site evaluations to determine suitability for this type of application.

Permitting of a semi-permanent LNG peaking facility falls under the jurisdiction of the New York State Department of Environmental Conservation and the requirements as defined in New York State Codes Rules and Regulations (CRR) Title 6 Chapter V Subchapter B Part 570.

#### Project Benefits:

The NYSEG Goshen Gas Distribution System is served by two (2) NY Local Distribution Companies (LDCs): Orange & Rockland at the southerly end of the 120-psig system, which is the primary feed supply source into the system, and Central Hudson Gas at the northerly end of the 60-psig system. Orange & Rockland does not have any additional capacity available at the Goshen Point of Delivery (POD). Central Hudson has limited capacity available, however, from a system hydraulic point-of-view, the Hamptonburg POD and downstream 60-psig system are limited primarily to the demand in the Village of Goshen.

The Companies identified this area as a Vulnerable Location in the July 17, 2020 'Supply and Demand Analysis Related to Service Areas with Known Supply Constraint Vulnerabilities' and the April 26, 2024, Long-Term Plan regulatory filings, primarily due to growth in recent years and limited available upstream gas supply capacity.

The Goshen system has seen considerable economic growth in recent years, including the construction of Legoland NY, Amy's Kitchen, Science of the Soul and the Winery Warehouse. Additional residential development has followed. Currently, at Design Day conditions with all committed load, NYSEG is at 68% of its contractual gas supply obligations. When new, pending load requests, such as Amy's Kitchen (57 MCFH) and Winery Warehouse (83 MCFH), NYSEG will have no additional gas supply reserve margin.

In order to continue to support economic development projects and reliably meet the needs of existing gas customers, this alternate gas supply LNG injection tap is needed.

This peak shaving facility would provide a temporary, economical solution to allow NYSEG to maintain reliability during the coldest parts of the year, stay within contractual obligations, avoid expensive permeant solutions such as a pipeline expansion or Gate Station construction and avoid the potential moratoria on gas service.

This project provides gas service to areas designated as a disadvantaged community (DAC).

Refer to attached for greenhouse gas emissions related to this project.

#### Project Risks and Mitigation Plan:

Project risks include permitting delays, weather delays, material delays and contractor availability for construction. The permitting and weather delays would cause the in service date of the project to moved to a later date. Material delays would be handled by working with either other preferred vendors or vendors outside our preferred vendors. If industry wide material delays occur, the planned in-service date would be moved to a later date. Lack of contractor availability would be handled by using other qualified contractors that responded to the bid (i.e. next qualified lowest bid) or delaying the in service of project if there is a substantial increase in the cost of the project from the next qualified bidder.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

Traditional solutions typically involve pipeline extensions, pipeline reinforcements and/or the construction of POD stations. The Goshen service territory is isolated between two LDC's; there are no available upstream supply pipelines to connect with, eliminating traditional pipeline solutions. One potential alternative is to install a Compressed Natural Gas (CNG) injection tap. In addition to all of the site development and equipment required for the LNG injection tap, due to regulations regarding CNG demarcation and ownership, the CNG tap would also require NYSEG to install and own decompression equipment, which would significantly increase the initial capital expenditures and on-going operation and maintenance expense. The increase in equipment and capital expenditures also makes the CNG option more permanent in nature than the LNG option. Further, based on the chemical properties of CNG and LNG, at the same volume, LNG contains over twice the heating content of CNG, meaning less tractor trailers would be required to be delivered, resulting in less greenhouse gas emissions for the LNG option.

The proposed project was selected due to the temporary nature of the installation and cost effectiveness when compared to other solutions. The proposed project would allow the Company to enter short term contracts for delivered LNG resources during peak demand periods. Should the area experience an increase in electrification over time and a subsequent, measured reduction in gas demand, the Company would have the option to eliminate the LNG Supply contract minimizing stranded assets. The M&R building and appurtenance could remain as potential emergency injection tap.

Additionally, as mentioned, the Company will solicit the marketplace for non-fossil fuel NPA proposals.

The project estimate for this project was developed based on conversations with several resource groups including internal personnel that operate and maintain Company owned LNG peaking facilities and contractors experienced with a similar installation requirement in Walton, NY that was developed under emergency circumstances. The estimate also includes costs associated with Regulatory mandated safety code requirements, a current understanding of material and installation costs for similar facilities and discussions with an LNG supply vendor (REV LNG) that has significant experience with supplemental, mobile LNG injection applications including permitting, design, installation, facility operations and emergency response.

This project is planned to be completed and added to rate base in Q3, 2026.

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,210        | \$ -        | \$ 2,210        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 397          | \$ -        | \$ 397          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 358          | \$ -        | \$ 358          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 243          | \$ -        | \$ 243          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,208</b> | <b>\$ -</b> | <b>\$ 3,208</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## CM 50, 52 & 53 (DeRuyter) Article VII

### PROJECT INFORMATION

|                                                       |                                            |                                                |                                            |                                     |
|-------------------------------------------------------|--------------------------------------------|------------------------------------------------|--------------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG                                 | <b>Project ID:</b><br>UH-N0000584-NYSEG-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project     |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability   | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>Dec-2030 |

#### Project description:

The objective of this project is to submit an Article VII application for the CM-50, 52 & 53, collectively referred to as the “DeRuyter Pipeline”. This application process is the first step in addressing the asset condition of this critical gas high pressure distribution system infrastructure. An Article VII permit is required as the proposed pipeline will operate above 125 psig and the replacement section is greater than 1 mile.

#### Project Scope:

This project includes the records research, engineering, development and submission of an Article VII Permit Application Package to the New York State Public Service Commission for the replacement of Certified Main No's. 50, 52 & 53 (DeRuyter Pipeline) at NYSEG.

This Scope of Work only includes the measure necessary to complete and submit the Article VII application. Actual pipeline construction related activities are contingent upon obtaining the Article VII permit and approved funding in future rate proceedings.

#### Project Benefits:

The DeRuyter High Pressure Distribution pipeline is a 50.2 mile pipeline, constructed prior to the 1960s. This pipeline, which originates at the DeRuyter Point of Delivery Station off Berkshire Hathaway Eastern Transmission and Storage (BHETS) system and traverses southeasterly, terminating at the Winney Hill District Regulator station in Oneonta, is a critical piece of the NYSEG-Oneonta system, serving approximately 10,100 customers in the towns of DeRuyter, Georgetown, Otselic, Plymouth, North Norwich, Norwich, New Berlin, Butternuts, Otego, Oneonta and Oxford. The segments of the pipeline, which are among the highest priority ranking according to the 'Avangrid USA NYSEG Certified Main Asset Condition Assessment', are summarized as follows:

Due to the age, vintage materials of construction and non-state of the art construction methods used on the DeRuyter pipeline from the 1950s, it has reached the end of life. Extensive additional rehabilitation would be required to modernize the pipeline in accordance with current industry practices however will not adequately resolve all applicable threats and risk that ensure integrity. The pipeline is susceptible to and has experienced weld seam failures since the 1990s due to the pipe manufacturing process. The failures have resulted in gas leaks in both the 10-inch NPS and 8-inch NPS portions of the pipeline. The Distribution Integrity Management Program (DIMP) and the IUSA's Gas System Planning Manual, the Company identifies several threats to the DeRuyter pipeline, including external corrosion, natural forces, material/weld/joint failure, and external impacts. The pipeline also has documented instances of pre-existing construction damage, third-party damage, and mill defects.

In 2024, the Company conducted above-grade corrosion surveys of the DeRuyter pipeline and has completed field excavations to confirm the findings. The DeRuyter pipeline was installed with a coal-tar coating that has demonstrated a degradation over time, which increases the likelihood of corrosion. While DIMP can identify and remediate the threats and risk of corrosion to ensure safe operation, in the present condition, age and configuration of the pipeline, there remains an inherent risk of leakage and release of methane to the atmosphere due to geographic location and external natural forces. Due to the pipeline's original cross-country geographic layout and location in areas of extreme terrain, sections are susceptible to washouts and damage due to external forces. DIMP and routine O&M activities such as leak survey and patrolling again ensure continued safe operation however, there remains an inherent risk of leakage and release of methane to the atmosphere. In such extreme locations, the leakage does not pose a risk to public safety but is a risk to the environment.

The intent of this project is to develop and submit the full Article VII application for a pipeline to replace CM-50, -52 & -53. This involves the records research, pipeline routing, design activities, coordination with Department of Public Service and other involved agencies, site walkthrough, easement preparations and Project Management oversight.

#### Project Risks and Mitigation Plan:

No construction is occurring on this project in the 2026-2031 period. The scope of work in the 2026-2031 period is limited to the preparation and submission of the Article VII documentation.

Risks are limited to engineering development and schedule and timeline for approval of the Article VII. If development of the project plans becomes an issue, the project can be reassigned to another engineering firm. If the schedule is delayed, the submission of the Article VII filing will be delayed. There is float in the schedule prior to planned construction that delays in the submission or approval of the Article VII can be absorbed.

Regular O&M activities are performed to ensure the integrity of the infrastructure however given the age, vintage, function and criticality to system reliability, the pipeline has an ongoing level of risk and is recommended for replacement to ensure public safety and reliability to customers. Continual operation of the DeRuyter pipeline involving O&M activities to prolong the pipeline life will ensure operational safety however do not reduce the risk attributed to natural forces, potential for leakage and disruption of service to customers. To maintain the operational safety of the DeRuyter pipeline will require significant ongoing O&M, inspection, assessment and anticipated remediation for the remaining life of the pipeline however will not inherently reduce the risk of and potential for leakage, methane release to the environment and disruption of service to customers.

The DeRuyter System is a single feed from one supplier, which means the pipeline is critical for reliability delivering gas service to more than 10,000 customers. The asset condition project is critical to ensure viable and reliability during all parts of the year for those that depend on this fuel source to heat their homes and power their businesses.

Pipeline routing alternatives are part of the Article VII permit preparation process. The Company will solicit the marketplace with an NPA Request for Proposals. Given the current state of available NPA options, it's unlikely that there are commercially available NPA solutions that could reasonably reduce the load of tens of thousands of customers, including the industrial and hard-to-electrify customers that depend on service from this pipeline to power their business and drive the local economy.

The basis for the cost for filing the Arcticle VII is based on historical costs for preparing Article VII filing documentation for the CM-4/CM-1 Relocation, CM-5 Pipeline Replacement, CM-1 (CM-6) Transmission Gas Main Replacement projects at RG&E and the NYSEG Phelps South Transmission Replacement project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ 802        | \$ 132        | \$ 156        | \$ 147        | \$ 173        | \$ 194        |  |  |
| # CIAC                 | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Materials            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 802</b> | <b>\$ 132</b> | <b>\$ 156</b> | <b>\$ 147</b> | <b>\$ 173</b> | <b>\$ 194</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029            | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-----------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        |
| # External Services    | \$ 3,199        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,599        | \$ 1,599        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        |
| # Internal, Labor      | \$ 235          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 118          | \$ 118          | \$ -        |
| # Internal, Overheads  | \$ 262          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 126          | \$ 137          | \$ -        |
| # Materials            | \$ 517          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 259          | \$ 259          | \$ -        |
| # Overheads - External | \$ 305          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 146          | \$ 159          | \$ -        |
| <b>Total</b>           | <b>\$ 4,519</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2,248</b> | <b>\$ 2,271</b> | <b>\$ -</b> |

[illegible]

## NYSEG Cathodic Protection on LPP

### PROJECT INFORMATION

|                                         |                                          |                                        |                                             |                                    |
|-----------------------------------------|------------------------------------------|----------------------------------------|---------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                   | <b>Project ID:</b><br>PRJ-007520         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Disbennett, Ross | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Operations | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing               | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This program is proposed to add cathodic protection to leak prone pipe (LPP) to extend its service life. The cathodic protection will be added to pipe segments deemed suitable by testing, inspection and/or evaluation using industry techniques and practices. Galvanic anodes are the most appropriate means to provide the cathodic protection based on ease of installation and economical cost. One rectifier bed is recommended based on cost at NYSEG.

#### Project Scope:

The estimated miles for cathodic protection installation are 5 miles at NYSEG and over 10 miles at RG&E.

#### Project Benefits:

Capital investment reduction by protecting rather than replacing LPP by increasing the LPP service life while providing an increase in safety reducing the probability of corrosion leaks.

#### Project Risks and Mitigation Plan:

Costs are mitigated by use of existing contracted materials and negotiated contractor construction rates. Risks are increases to materials and labor costs. 10% increase in labor cost is anticipated in the cost estimate.

#### Risk of No Action:

This program is proposed to add cathodic protection to leak prone pipe (LPP) to extend its service life. The cathodic protection will be added to pipe segments deemed suitable by testing, inspection and/or evaluation using industry techniques and practices. Galvanic anodes are the most appropriate means to provide the cathodic protection based on ease of installation and economical cost. One rectifier bed is recommended based on cost at NYSEG.

#### Project Alternatives:

Replacement of the LPP and associated services.

#### Basis for Project Estimates

Existing material contract costs, contracted construction prices through Master Service Agreements, and company labor costs.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029          | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|---------------|---------------|-------------|
| # AFUDC                | \$ 60           | \$ -        | \$ -        | \$ 16         | \$ 17         | \$ 20         | \$ 6          | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # External Services    | \$ 1,497        | \$ -        | \$ -        | \$ 405        | \$ 437        | \$ 509        | \$ 146        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # Internal, Labor      | \$ 111          | \$ -        | \$ -        | \$ 28         | \$ 33         | \$ 38         | \$ 11         | \$ -        |
| # Internal, Overheads  | \$ 233          | \$ -        | \$ -        | \$ 66         | \$ 67         | \$ 76         | \$ 24         | \$ -        |
| # Materials            | \$ 364          | \$ -        | \$ -        | \$ 102        | \$ 105        | \$ 123        | \$ 35         | \$ -        |
| # Overheads - External | \$ 162          | \$ -        | \$ -        | \$ 46         | \$ 46         | \$ 53         | \$ 16         | \$ -        |
| <b>Total</b>           | <b>\$ 2,427</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 664</b> | <b>\$ 705</b> | <b>\$ 820</b> | <b>\$ 238</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **RG&E Gas Reliability**



## RG&E Leak Prone Pipe Replace Prog - LPP

### PROJECT INFORMATION

|                                                       |                                          |                                                |                                           |                                        |
|-------------------------------------------------------|------------------------------------------|------------------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0030-RGE-GS    | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Miniter, Craig | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Annually prioritize and replace leak prone pipe throughout RG&E's Gas Service Areas. Leak prone pipe is prioritize utilizing a risk-based methodology and includes replacement of leak prone pipe in areas designated as disadvantaged communities. Replacing leak prone pipe with new, start of the art materials, helps reduce future potential greenhouse gas emissions.

#### Project Scope:

This mandatory compliance program replaces gas pipes identified as leak prone in accordance with the Company's Leak Prone Pipe Criteria and Distribution Integrity Management Program (DIMP). The Leak Prone Pipe Criteria includes mains prioritized to replace due to conditions such as leaks, manufacturing and construction defects, type of materials (ex. bare steel, wrought iron, etc). This work includes, but is not limited to, replacing gas mains and services that meet the leak prone criteria that are in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way; leak prone gas pipe replacements; tariff or code requirements; and actively leaking mains. This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Benefits:

The leak prone pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements. This program contributes to greenhouse gas reductions

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the required mileage each year.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted is the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding would require the deferment of priority projects and/or mileage goals would not be met.

#### Risk of No Action:

The Leak Prone Pipe Replacement Program is required by regulation.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The Leak Prone Pipe program was based on 2024 actuals (years prior to 2024 did not include prevailing wage) and have been increased on an annual basis for contractor cost increases, material cost increases and internal labor cost increases. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The mileage in years 2024 is 24 miles of replacement. The actual 2024 mileage was adjusted downward to arrive at 24 miles in years 2026 and beyond. There are also years that have individually listed leak prone pipe projects (see list below). The mileage from these projects was subtracted from the program mileage and the cost per mile of the program was used to reduce the cost from the program in these years. The resulting costs are included in the Program Cost Forecast and below.

Monroe Ave

## Ridgway Ave Phase II

Paul Rd (Airport)

Winton Rd South

Fairport Rd

[illegible]

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| Capital Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------|-------|------|------|------|------|------|--|--|
|------------------|-------|------|------|------|------|------|--|--|

| Capital Budget         | 2019             | 2020             | 2021             | 2022             | 2023             | 2024             |  |  |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 1,868         | \$ 557           | \$ 349           | \$ 296           | \$ 318           | \$ 347           |  |  |
| # CIAC                 | \$ -37           | \$ -29           | \$ -             | \$ -             | \$ -0            | \$ -8            |  |  |
| # External Services    | \$ 56,008        | \$ 11,291        | \$ 10,943        | \$ 7,677         | \$ 9,235         | \$ 16,863        |  |  |
| # Internal - Non-AC    | \$ 0             | \$ -             | \$ 0             | \$ 0             | \$ 0             | \$ -             |  |  |
| # Internal, Labor      | \$ 3,737         | \$ 664           | \$ 830           | \$ 659           | \$ 837           | \$ 747           |  |  |
| # Internal, Overheads  | \$ 3,135         | \$ 553           | \$ 534           | \$ 437           | \$ 725           | \$ 885           |  |  |
| # Materials            | \$ 6,908         | \$ 1,677         | \$ 1,127         | \$ 869           | \$ 1,651         | \$ 1,585         |  |  |
| # Overheads - External | \$ 9,593         | \$ 2,060         | \$ 2,071         | \$ 1,593         | \$ 1,975         | \$ 1,894         |  |  |
| <b>Total</b>           | <b>\$ 81,212</b> | <b>\$ 16,772</b> | <b>\$ 15,854</b> | <b>\$ 11,531</b> | <b>\$ 14,741</b> | <b>\$ 22,314</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
|--------------|-------|------|------|------|------|------|--|--|

|       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------|-------|------|------|------|------|------|--|--|
| Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|------------------|-------|------|------|------|------|------|------|------|
|------------------|-------|------|------|------|------|------|------|------|

| Capital Expenditures   | 2016              | 2015             | 2014             | 2013             | 2012             | 2011             | 2010             | 2009             | 2008 | 2007 |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------|------|
| # AFUDC                | \$ 5,799          | \$ 556           | \$ 679           | \$ 700           | \$ 875           | \$ 901           | \$ 928           | \$ 1,160         |      |      |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |      |      |
| # External Services    | \$ 169,226        | \$ 7,198         | \$ 19,947        | \$ 21,755        | \$ 26,639        | \$ 26,486        | \$ 28,534        | \$ 38,667        |      |      |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |      |      |
| # Internal, Labor      | \$ 5,925          | \$ 534           | \$ 833           | \$ 858           | \$ 884           | \$ 911           | \$ 938           | \$ 966           |      |      |
| # Internal, Overheads  | \$ 357            | \$ 151           | \$ 41            | \$ 38            | \$ 34            | \$ 30            | \$ 30            | \$ 32            |      |      |
| # Materials            | \$ 15,846         | \$ 2,708         | \$ 1,932         | \$ 2,028         | \$ 2,130         | \$ 2,236         | \$ 2,348         | \$ 2,465         |      |      |
| # Overheads - External | \$ 24,526         | \$ 2,565         | \$ 3,753         | \$ 3,625         | \$ 3,778         | \$ 3,204         | \$ 3,232         | \$ 4,367         |      |      |
| <b>Total</b>           | <b>\$ 221,679</b> | <b>\$ 13,713</b> | <b>\$ 27,186</b> | <b>\$ 29,004</b> | <b>\$ 34,340</b> | <b>\$ 33,769</b> | <b>\$ 36,010</b> | <b>\$ 47,658</b> |      |      |

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
|--------------|-------|------|------|------|------|------|------|------|

[illegible]

## LPP\_Paul Road

### PROJECT INFORMATION

|                                                       |                                          |                                     |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|-------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-003712         | <b>Charge Code:</b><br>Gas          | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>H1 2025              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 4,272 linear feet of 12-inch Steel Wrapped main with 4,272 linear feet of 12-inch Steel Wrapped Protected main along Paul Road from Marshall Rd to Jet View Drive.

This project is partially located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ 71         | \$ -        | \$ -        | \$ -        | \$ 31         | \$ 40        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ 40         | \$ -        | \$ -        | \$ -        | \$ 40         | \$ -         |  |  |
| # Materials            | \$ 399        | \$ -        | \$ -        | \$ -        | \$ 399        | \$ -         |  |  |
| # Overheads - External | \$ 96         | \$ -        | \$ -        | \$ -        | \$ 96         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 606</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 566</b> | <b>\$ 40</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025         | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|--------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 46           | \$ 46        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,455        | \$ -         | \$ 3,455        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 198          | \$ -         | \$ 198          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 170          | \$ -         | \$ 170          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 234          | \$ -         | \$ 234          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 428          | \$ -         | \$ 428          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,532</b> | <b>\$ 46</b> | <b>\$ 4,486</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## LPP\_Paul Road

### PROJECT INFORMATION

|                                                       |                                          |                                     |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|-------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-003712         | <b>Charge Code:</b><br>Gas          | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>H1 2025              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 4,272 linear feet of 12-inch Steel Wrapped main with 4,272 linear feet of 12-inch Steel Wrapped Protected main along Paul Road from Marshall Rd to Jet View Drive.

This project is partially located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ 71         | \$ -        | \$ -        | \$ -        | \$ 31         | \$ 40        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ 40         | \$ -        | \$ -        | \$ -        | \$ 40         | \$ -         |  |  |
| # Materials            | \$ 399        | \$ -        | \$ -        | \$ -        | \$ 399        | \$ -         |  |  |
| # Overheads - External | \$ 96         | \$ -        | \$ -        | \$ -        | \$ 96         | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 606</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 566</b> | <b>\$ 40</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025         | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|--------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 46           | \$ 46        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,455        | \$ -         | \$ 3,455        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 198          | \$ -         | \$ 198          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 170          | \$ -         | \$ 170          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 234          | \$ -         | \$ 234          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 428          | \$ -         | \$ 428          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,532</b> | <b>\$ 46</b> | <b>\$ 4,486</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## LPP\_Maple St Phase I

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006625         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 2,365 linear feet of 14-inch Steel Wrapped main with 2,365 linear feet of 16-inch Steel Wrapped Protected main along Maple St from 451 Maple St to 154 Maple St.  
This project is located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,802        | \$ -        | \$ -        | \$ 3,802        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 231          | \$ -        | \$ -        | \$ 231          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 6            | \$ -        | \$ -        | \$ 6            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 217          | \$ -        | \$ -        | \$ 217          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 638          | \$ -        | \$ -        | \$ 638          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,893</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 4,893</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



## LPP\_Jay St

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006626         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 2,839 linear feet of 14-inch Steel Wrapped main with 2,839 linear feet of 16-inch Steel Wrapped Protected main along Jay St from 64 Romeyn St to State St.  
This project is located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 4,459        | \$ -        | \$ 4,459        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 271          | \$ -        | \$ 271          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 8            | \$ -        | \$ 8            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 250          | \$ -        | \$ 250          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 838          | \$ -        | \$ 838          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 5,825</b> | <b>\$ -</b> | <b>\$ 5,825</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## LPP\_Fairport Rd

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006627         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2030              | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 3,100 linear feet of 2,4, and 6-inch Steel Wrapped main with 3,100 linear feet of 2,4, and 8-inch plastic main along Fairport Rd. This project also included the replacement of approximately 3,900 linear feet of 12 and 16-inch Steel Wrapped main with 3,900 linear feet of 16-inch Steel Wrapped main from Marsh Rd to Baird Rd.

This project provides gas service to areas designated as disadvantaged communities (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029        | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # External Services    | \$ 5,594        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 5,594        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Internal, Labor      | \$ 364          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 364          | \$ -        |
| # Internal, Overheads  | \$ 10           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 10           | \$ -        |
| # Materials            | \$ 745          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 745          | \$ -        |
| # Overheads - External | \$ 699          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 699          | \$ -        |
| <b>Total</b>           | <b>\$ 7,413</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 7,413</b> | <b>\$ -</b> |

[illegible]

## LPP\_Monroe Ave Phase I

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006628         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of 3,800 linear feet of 6-inch Steel Wrapped and Steel Wrapped Protected main with 3,800 linear feet of 8-inch plastic main along Monroe Ave.

This project is not located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,625        | \$ -        | \$ 3,625        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 242          | \$ -        | \$ 242          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 6            | \$ -        | \$ 6            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 193          | \$ -        | \$ 193          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 687          | \$ -        | \$ 687          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 4,753</b> | <b>\$ -</b> | <b>\$ 4,753</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## LPP\_Winton Rd South

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006629         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 1,000 linear feet of 16-inch and 20-inch Steel Wrapped main with 1,000 linear feet of 16-inch Steel Wrapped Protected main along Winton Road South, from the outlet of Regulator Station RS462 to Brighton Henrietta Townline Road. This project provides gas service to areas designated as disadvantaged communities (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 2,118        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2,118        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 127          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 127          | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 2            | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2            | \$ -        | \$ -        |
| # Materials            | \$ 100          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 100          | \$ -        | \$ -        |
| # Overheads - External | \$ 260          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 260          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,607</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2,607</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



## LPP\_Buffalo Rd

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006631         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 8,267 linear feet of 8-inch, 14-inch and 20-inch Steel Protected main, Steel Wrapped main and Steel Wrapped Protected main with 8,046 linear feet of 8-inch, 16-inch and 20-inch high-density plastic main and Steel Wrapped Protected main along Buffalo Rd from 1802 Buffalo Rd to 885 Buffalo Rd.

This project is located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029             | 2030        | 2031        |
|------------------------|------------------|-------------|-------------|-------------|-------------|------------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        |
| # External Services    | \$ 17,157        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 17,157        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        |
| # Internal, Labor      | \$ 1,032         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,032         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 17            | \$ -        | \$ -        | \$ -        | \$ -        | \$ 17            | \$ -        | \$ -        |
| # Materials            | \$ 807           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 807           | \$ -        | \$ -        |
| # Overheads - External | \$ 2,104         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2,104         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 21,119</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 21,119</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## LPP Paul Road (Airport)

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006632         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2028              | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 5,355 linear feet of 12-inch Steel Wrapped Unprotected main with 12,105 linear feet of 4-inch and 12-inch high-density plastic main and Steel Wrapped Protected main along Paul Rd from Jet View Drive to Scottsville Rd. This project is partially located in an area designated as a disadvantaged community (DAC) and contributes to greenhouse gas emissions reductions.

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028             | 2029        | 2030        | 2031        |
|------------------------|------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 17,702        | \$ -        | \$ -        | \$ -        | \$ 17,702        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 863           | \$ -        | \$ -        | \$ -        | \$ 863           | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 18            | \$ -        | \$ -        | \$ -        | \$ 18            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 771           | \$ -        | \$ -        | \$ -        | \$ 771           | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 2,501         | \$ -        | \$ -        | \$ -        | \$ 2,501         | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 21,855</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 21,855</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## LPP\_East River Rd

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006633         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2029 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of 1,576 linear feet of Steel Wrapped main underneath the Genesee River with 1,576 linear feet. This project is partially located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

#### Basis for Project Estimates

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029             | 2030        | 2031        |
|------------------------|------------------|-------------|-------------|-------------|-------------|------------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        |
| # External Services    | \$ 8,024         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 8,024         | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        |
| # Internal, Labor      | \$ 505           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 505           | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 12            | \$ -        | \$ -        | \$ -        | \$ -        | \$ 12            | \$ -        | \$ -        |
| # Materials            | \$ 757           | \$ -        | \$ -        | \$ -        | \$ -        | \$ 757           | \$ -        | \$ -        |
| # Overheads - External | \$ 1,029         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,029         | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 10,326</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 10,326</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## LPP\_Maple St Phase II

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006746         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2028              | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 2,542 linear feet of 14-inch Steel Wrapped main and Steel Wrapped Protected main with 2,542 linear feet of 16-inch Steel Wrapped Protected main along Maple St from 1036 Maple St to 265 Ames St. This project is located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028            | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 4,161        | \$ -        | \$ -        | \$ -        | \$ 4,161        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 253          | \$ -        | \$ -        | \$ -        | \$ 253          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 6            | \$ -        | \$ -        | \$ -        | \$ 6            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 242          | \$ -        | \$ -        | \$ -        | \$ 242          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 608          | \$ -        | \$ -        | \$ -        | \$ 608          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 5,270</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 5,270</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



## LPP\_Ridgeway Ave Phase II

### PROJECT INFORMATION

|                                                       |                                          |                                                |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-003711         | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

These projects are being separated from the RG&E Leak Prone Pipe Program due to the complexity of construction and budgetary impacts of each individual project. The Leak Prone Pipe replacement program improves distribution safety and reliability by replacing gas mains in poor asset condition and/or at high risk for failure. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer, more reliable and decreases emissions.

#### Project Scope:

This project includes the replacement of approximately 3,956 linear feet of 16-inch steel wrapped main with 3,956 linear feet of 16-inch steel wrapped protected main along Ridgeway Ave from 1594 Ridgeway Ave to Mt. Read Blvd.  
This project is located in an area designated as a disadvantaged community (DAC).

#### Project Benefits:

Leak prone pipe replacement improves distribution safety and reliability by replacing gas mains in poor asset condition at high risk for failure and leakage. The gas mains are prioritized for replacement in accordance with Distribution Integrity Management Plan (DIMP) regulations and leak information. The gas main replacements result in a distribution system that is safer and more reliable. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future operation and maintenance expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of leak prone pipe is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

Leak prone pipe replacement is required by regulation. No action results in an increase in reliability and safety risks, and the potential for leaks that would result in greenhouse gas (methane) emissions.

#### Project Alternatives:

All leak prone pipe segments are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 6,114        | \$ -        | \$ -        | \$ 6,114        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 371          | \$ -        | \$ -        | \$ 371          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 267          | \$ -        | \$ -        | \$ 267          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 349          | \$ -        | \$ -        | \$ 349          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 676          | \$ -        | \$ -        | \$ 676          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,777</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 7,777</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## RG&E Leak Prone Srv Repl Program

### PROJECT INFORMATION

|                                                       |                                          |                                                |                                        |                                        |
|-------------------------------------------------------|------------------------------------------|------------------------------------------------|----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UI-R0031-RGE-GS    | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Clarcq, Dan | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program replaces services that are classified as leak prone in accordance with the Company's Leak Prone Pipe Criteria and Distribution Integrity Management Program (DIMP).

#### Project Scope:

The Leak Prone Service Criteria includes services to replace based upon conditions such as leaks, manufacturing and construction defects, type of materials (ex. bare steel, wrought iron, etc). This work includes, but is not limited to, replacing gas services in conflict with street reconstruction projects in accordance with terms and conditions to occupy public right-of-way, leak prone gas main replacements, tariff or code requirements and actively leaking services.

This program is applicable to all areas served by RG&E, inclusive of those designated as disadvantaged communities (DAC). This program contributes to greenhouse gas reductions.

#### Project Benefits:

Leak prone gas services are required to be replaced by various regulations to keep customers and their properties safe from potential gas leaks. The replacement of leak prone services is completed in accordance with the Company's Distribution Integrity Management Program. Replacement of facilities is a recognized practice to effectively mitigate risk and address threats to pipeline systems. Infrastructure replacement affords relocation of Company assets to locations that can minimize future O&M expenses and ensure safe, reliable service to customers in accordance with regulatory requirements. Replacement of vintage facilities is an industry recognized means to reduce methane emissions from leakage and serves to support Federal methane emission reduction initiatives and NY CLCPA requirements.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the mileage. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the required mileage each year.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Permitting delay risks could delay the start of projects. If these delays arise, the order the projects within the program are constructed would be adjusted as the delays are short term (1-4 weeks). Longer term delays (greater than 4 weeks) would either be worked into the schedule for the current year or would be deferred until the following year. This assumes the associated main work would also be delayed. If main work permitting delays do not exist, most likely the associated service work would not be delayed.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

#### Risk of No Action:

The Leak Prone Service Replacement Program is required by regulation.

#### Project Alternatives:

All leak prone services that are associated with pipeline projects are screened for the applicability of Non-Pipe Alternatives prior to replacement.

The Leak Prone Service Replacement program is highly aligned with the mileage of the LPP program mileage and the quantity of services per mile. In 2024, 1189 services were replaced that resulted in 42 services per mile and an average cost of \$4,170 per service (previous years were not included as 2024 was the first year of prevailing wage). The number of services per mile were held constant over the future years based on 24 miles of LPP replacement. The cost per service was adjusted each year to account for contractor increases, material increases and internal labor costs. The adjustment factors are included in the Program Cost Forecast papers included in this filing. The adjusted cost per service was multiplied by 42 services per mile and the total number of miles each year, i.e. 24 miles to arrive at the total program cost per year. The resulting costs are included in the Program Cost Forecast and below.

## FINANCIAL INFORMATION

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 262           | \$ 40           | \$ 58           | \$ 55           | \$ 55           | \$ 55           |  |  |
| # CIAC                 | \$ -8            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -8           |  |  |
| # External Services    | \$ 9,622         | \$ 1,073        | \$ 1,930        | \$ 2,027        | \$ 1,795        | \$ 2,798        |  |  |
| # Internal - Non-AC    | \$ 1             | \$ 0            | \$ 0            | \$ 0            | \$ 1            | \$ 0            |  |  |
| # Internal, Labor      | \$ 2,509         | \$ 457          | \$ 488          | \$ 605          | \$ 674          | \$ 285          |  |  |
| # Internal, Overheads  | \$ 774           | \$ 90           | \$ 145          | \$ 166          | \$ 195          | \$ 179          |  |  |
| # Materials            | \$ 2,478         | \$ 302          | \$ 599          | \$ 517          | \$ 525          | \$ 535          |  |  |
| # Overheads - External | \$ 2,735         | \$ 402          | \$ 596          | \$ 706          | \$ 623          | \$ 408          |  |  |
| <b>Total</b>           | <b>\$ 18,373</b> | <b>\$ 2,363</b> | <b>\$ 3,817</b> | <b>\$ 4,074</b> | <b>\$ 3,868</b> | <b>\$ 4,252</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 673           | \$ 117          | \$ 72           | \$ 74           | \$ 93           | \$ 96           | \$ 98           | \$ 123          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 30,049        | \$ 2,250        | \$ 3,602        | \$ 3,710        | \$ 4,638        | \$ 4,777        | \$ 4,920        | \$ 6,151        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 2,058         | \$ 100          | \$ 303          | \$ 312          | \$ 321          | \$ 331          | \$ 341          | \$ 351          |
| # Internal, Overheads  | \$ 82            | \$ 16           | \$ 13           | \$ 12           | \$ 11           | \$ 10           | \$ 10           | \$ 10           |
| # Materials            | \$ 4,730         | \$ 720          | \$ 590          | \$ 619          | \$ 650          | \$ 682          | \$ 717          | \$ 752          |
| # Overheads - External | \$ 4,986         | \$ 735          | \$ 767          | \$ 706          | \$ 736          | \$ 644          | \$ 625          | \$ 773          |
| <b>Total</b>           | <b>\$ 42,578</b> | <b>\$ 3,939</b> | <b>\$ 5,346</b> | <b>\$ 5,434</b> | <b>\$ 6,448</b> | <b>\$ 6,539</b> | <b>\$ 6,711</b> | <b>\$ 8,160</b> |

[illegible]

## MF60 SE Phase IV (Crowley Rd)

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-002979         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The MF60 Southeast System Improvement (Phase IV) is a part of a multi-phased system reinforcement project intended to increase pressures, capacity and reliability to ensure the safe delivery of natural gas to existing customers. The MF60 Southeast Phase 2 project was completed in 2020 due to a municipal-related project. The first phase of the County Rd 9 Leak Prone Pipe project is currently in construction, with all three phases planned for completion by the end of 2027. A Non-Pipes Alternative Request for Proposal solicitation was completed for the MF60 Southeast Phase 1 and 3 projects and did not result in a financially viable alternative.

#### Project Scope:

The Town of Farmington continues to be the lowest operating pressure location of the MF60 Southeast pressure system. Based on the hydraulic analysis utilizing 2022 RGE-Rochester Design Day System Model, including the proposed MF60SE System Improvements Phases 1-3 Projects, system endpoint pressures are approximately 30 psig (50% MAOP). Without the proposed MF60SE System Improvements Phases 1-3 projects, areas of Victor and the majority of Farmington will be at or below 30 psig on design day (the lowest point being 18 psig). This is primarily due to regionalized, steady organic load growth, particularly in the Village/Town of Victor and Town of Farmington.

Phase IV (Gillis Rd – Hook Rd)

Install approximately 14,600 linear feet of 8-inch PE main south on Crowley Rd from the existing 6-inch steel main to Hook Rd and continuing down Hook Rd to the existing 4-inch main just south of the railroad tracks. This project also includes crossing the NYS Thruway (I-90) and the Ontario County IDA railroad.

This project is not located in an area designated as a disadvantage community.

This project does not contribute to greenhouse gas reductions.

#### Project Benefits:

The MF60 Southeast System has been an area of active growth, particularly in the towns of Victor and Farmington. According to the US Census Bureau, from 1990 to 2010, the population of the Town of Victor and Farmington has increased 98.5% and 13.9%, respectively. Annualized over twenty years, these are 4.9% and 0.7% average annual growth, which far outpace the New York State annual average growth rate of 0.39% over the same time period. Growth has primarily been commercial and residential, with an emphasis on residential sub-divisions. This project increases system pressure and reliability to an area of the RG&E franchise that is actively growing, particularly residential housing developments. Significant large-scale subdivisions to have been constructed, or plan to be constructed, including: Auburn Meadows (300+ units), Hillshire Hills (140 units), Hickory Rise (63 units), Farmington Gardens (106 units), Hathaway Corners (239 units), and Pintail Crossings (168 units). This system improvement project will increase system pressures endpoints to approximately 46-psig (76% MAOP) at peak day conditions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

An alternative that was considered was replacing the pipe from south of district regulator station 415 (High Street) with larger diameter pipe to just north of the intersection of High St and Aldridge Rd. This would entail replacing 6-inch steel pipe with 8-inch HDPE. However, this alternative did not have as much beneficial impact to system pressures as the selected project.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028            | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 5,097        | \$ -        | \$ -        | \$ 4,172        | \$ 925          | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 290          | \$ -        | \$ -        | \$ 264          | \$ 26           | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 232          | \$ -        | \$ -        | \$ 192          | \$ 40           | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 614          | \$ -        | \$ -        | \$ 419          | \$ 195          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 574          | \$ -        | \$ -        | \$ 480          | \$ 94           | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,807</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 5,526</b> | <b>\$ 1,280</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## MF60 SE Phase III (Malone Rd)

### PROJECT INFORMATION

|                                                       |                                          |                                                |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UH-R0005567-RGE-GS | <b>Charge Code:</b><br>Gas                     | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The MF60 Southeast System Improvement (Phase 3) is a part of a multi-phased system reinforcement project intended to increase pressures, capacity and reliability to ensure the safe delivery of natural gas to existing customers. The Town of Farmington continues to be the lowest operating pressure location of the MF60 Southeast pressure system.

#### Project Scope:

This Project includes the installation of approximately 19,000 LF of 6-inch MDPE main along Dryer Road, Malone Road and Boughton Hill Road, from Willis Hill Road to NYS Rte. 441.

#### Project Benefits:

At Design Day conditions, the southeasterly portion of the MF60 Southeast System, an area that covers nearly 68 SQ miles across the town's of Victor and Farmington, is operating between 50-70% MAOP. Hydraulic modeling indicates that once all the known and planned development is fully built out, that 10-20% of Victor and 100% of Farmington will be at or below 50% MAOP on design day. The area has seen a consistent amount of residential development, including: Monarch Manor (158 units), Auburn Meadows (214 units), Redfield Grove (64 units), Pintail Crossing (168 units), Farmington Gardens (106 units), Hathaway Corners (396 units), Willow Rise Townhomes (45 units), Blumont Rise (35 units), Southgate Hills (25 units), Stone Brook Subdivision (85 units), Paddock Landing (186 units), and Woods at Valentown (288 units), totaling 1,770 residential units and some commercial units. In 2024, RG&E initiated a Non-Pipe Alternatives (NPA) request for proposals for projects/programs to delay or replace this traditional solution, however, the NPA proposals received were not technically or economically feasible. The project is part of the long-term plan to increase the MF60 Southeast 60-psig pressure system improve system reliability and avoid the need for future moratoria.

This project is not located in an area designated as a disadvantage community.

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material and/or labor costs could be substantially impacted by economic uncertainties. If this is the case, the increase in cost would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

#### Project Alternatives:

An NPA Request for Proposals was initiated in 2024 which resulted in no alternative solutions that were technically or economically viable alternatives to the pipeline project. An alternative that was not considered due to cost and complexity is the construction of another point of delivery station in the area to bring in additional gas supply.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020          | 2021         | 2022        | 2023        | 2024        |  |  |
|------------------------|---------------|---------------|--------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ 36         | \$ 3          | \$ 8         | \$ 8        | \$ 8        | \$ 9        |  |  |
| # CIAC                 | \$ -          | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ 91         | \$ 88         | \$ 3         | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -          | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ 3          | \$ 3          | \$ 0         | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -          | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ 10         | \$ 10         | \$ 0         | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 141</b> | <b>\$ 104</b> | <b>\$ 12</b> | <b>\$ 8</b> | <b>\$ 8</b> | <b>\$ 9</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025         | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|--------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 11           | \$ 11        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 4,138        | \$ -         | \$ 4,138        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -         | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 253          | \$ -         | \$ 253          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 219          | \$ -         | \$ 219          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 519          | \$ -         | \$ 519          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 542          | \$ -         | \$ 542          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 5,682</b> | <b>\$ 11</b> | <b>\$ 5,671</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]



## MF60 SE Phase I (Mendon Gate - Rte 64)

### PROJECT INFORMATION

|                                                       |                                          |                                               |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|-----------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>UH-R0005523-RGE-GS | <b>Charge Code:</b><br>Gas                    | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>H1 2027              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The MF60 Southeast System Improvement (Phase I) is a part of a multi-phased system reinforcement project intended to increase pressures, capacity and reliability to ensure the safe delivery of natural gas to existing customers. The Town of Farmington continues to be the lowest operating pressure location of the MF60 Southeast pressure system.

#### Project Scope:

This Project includes the installation of approximately 13,100 LF of 12-inch WRST main, from the outlet of Regulator Station 428 (at the Mendon Gate Station), along NYS Rte. 64 to the intersection of NYS Rte. 251. The project will include the rebuild of Regulator Station 428 to accommodate the additional capacity. The project will also include crossing NYS Thruway (I-90).

#### Project Benefits:

At Design Day conditions, the southeasterly portion of the MF60 Southeast System, an area that covers nearly 68 SQ miles across the town's of Victor and Farmington, is operating between 50-70% MAOP. Hydraulic modeling indicates that once all the known and planned development is fully built out, that 10-20% of Victor and 100% of Farmington will be at or below 50% MAOP on design day. The area has seen a consistent amount of residential development, including: Monarch Manor (158 units), Auburn Meadows (214 units), Redfield Grove (64 units), Pintail Crossing (168 units), Farmington Gardens (106 units), Hathaway Corners (396 units), Willow Rise Townhomes (45 units), Blumont Rise (35 units), Southgate Hills (25 units), Stone Brook Subdivision (85 units), Paddock Landing (186 units), and Woods at Valentown (288 units), totaling 1,770 residential units and some commercial units. In 2024, RG&E initiated a Non-Pipe Alternatives (NPA) request for proposals for projects/programs to delay or replace this traditional solution, however, the NPA proposals received were not technically or economically feasible. The project is part of the long-term plan to increase the MF60 Southeast 60-psig pressure system improve system reliability and avoid the need for future moratoria.

This project is not located in an area designated as a disadvantage community.

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

#### Project Alternatives:

An NPA Request for Proposals was initiated in 2024 which resulted in no alternative solutions that were technically or economically viable alternatives to the pipeline project. An alternative that was not considered due to cost and complexity is the construction of another point of delivery station in the area to bring in additional gas supply.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020         | 2021         | 2022        | 2023        | 2024        |  |  |
|------------------------|---------------|--------------|--------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ 31         | \$ 2         | \$ 6         | \$ 7        | \$ 8        | \$ 9        |  |  |
| # CIAC                 | \$ -          | \$ -         | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ 85         | \$ 47        | \$ 37        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -         | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -          | \$ -         | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ 4          | \$ 2         | \$ 2         | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -          | \$ -         | \$ -         | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ 11         | \$ 5         | \$ 5         | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 130</b> | <b>\$ 57</b> | <b>\$ 50</b> | <b>\$ 7</b> | <b>\$ 8</b> | <b>\$ 9</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025         | 2026        | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|--------------|-------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 10           | \$ 10        | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -         | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 5,417        | \$ -         | \$ -        | \$ 5,417        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -         | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 363          | \$ -         | \$ -        | \$ 363          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 268          | \$ -         | \$ -        | \$ 268          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 897          | \$ -         | \$ -        | \$ 897          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 661          | \$ -         | \$ -        | \$ 661          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,617</b> | <b>\$ 10</b> | <b>\$ -</b> | <b>\$ 7,607</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Pavilion System Semi-Perm Peaking Tap

### PROJECT INFORMATION

|                                                       |                                          |                                               |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|-----------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006166         | <b>Charge Code:</b><br>Gas                    | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Due to localized upstream pipeline gas supply constraints in the RG&E Pavilion territory, RG&E has limited gas supply reserve margin and ability to reliability serve existing gas customers during the coldest parts of the year while maintaining contractual gas supply obligations. This project proposes to build a semi-permanent liquified natural gas (LNG) injection tap that would function as a peaking facility to ensure reliable gas delivery to the existing customers during winter and at Design Day conditions. This alternative supply reduces the risk of exceeding contractual maximum daily demand obligation (MDDO) which could result in financial penalties and inability to provide service to firm customers during peak conditions.

#### Project Scope:

This project includes the land acquisition, permitting and construction of a semi-permanent LNG Supply injection tap into the RG&E Pavilion MF60 Southwest pressure system. This alternate supply will be utilized as a 'peak shaving' facility during the heating season and will be designed to inject up to 100 MCFH.

The project development site will consist of a Metering & Regulation (M&R) building; gas odorization equipment; overpressure protection equipment; a connection point to the LNG vaporizer outlet; a pad surface suitable to stage 2-3 tractor-trails and associated LNG equipment; security measures (fencing, lighting, SCADA) and a back-up generator. RG&E is currently completing site evaluations to determine suitability for this type of application.

Permitting of a semi-permanent LNG peaking facility falls under the jurisdiction of the New York State Department of Environmental Conservation and the requirements as defined in New York State Codes Rules and Regulations (CRR) Title 6 Chapter V Subchapter B Part 570.

#### Project Benefits:

The RG&E-Pavilion area is served by six (6) Point of Delivery (POD) stations, all of which are served by BH Eastern Gas Transmission & Storage (BHEGTS). The BHEGTS pipelines in the area are fully subscribed. The East Avon POD has exceeded the MDDO 14 times since 2019. During Design Day conditions, hydraulic modeling indicates flowrates at the East Avon POD of approximately 329 MCFH, which is 35% over the contractual hourly limit of 243 MCFH. Historical weather data indicates that the East Avon regularly exceeds the MDDO when the average daily temperature is below 10°F, or 55 Heating Degree Days.

The Companies identified this area as a Vulnerable Location in the July 17, 2020 'Supply and Demand Analysis Related to Service Areas with Known Supply Constraint Vulnerabilities' and the April 26, 2024, Long-Term Plan regulatory filings, due to no available upstream gas supply capacity.

This project is not located in an area designated as a disadvantaged community (DAC).

Greenhouse gas emissions related to this project are discussed in the project report.

#### Project Risks and Mitigation Plan:

Project risks include permitting delays, weather delays, material delays and contractor availability for construction. The permitting and weather delays would cause the in service date of the project to moved to a later date. Material delays would be handled by working with either other preferred vendors or vendors outside our preferred vendors. If industry wide material delays occur, the planned in-service date would be moved to a later date. Lack of contractor availability would be handled by using other qualified contractors that responded to the bid (i.e. next qualified lowest bid) or delaying the in service of project if there is a substantial increase in the cost of the project from the next qualified bidder.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

#### Risk of No Action:

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

Traditional solutions typically involve pipeline extensions, reinforcements and the construction of POD stations. The nearest pipeline with available capacity is over 10 miles (straight-line distance) from the Avon POD. RG&E has explored this option with the pipeline supplier, however, a pipeline of this magnitude would cost many tens of millions of dollars and is not feasible considering the relatively small additional flowrate needed.

The proposed project was selected due to the temporary nature of the installation and cost effectiveness when compared to traditional solutions. The proposed project would allow the Company to enter short term contracts for delivered LNG resources during peak demand periods. Should the area experience see an increase in electrification over time and a subsequent, measured reduction in gas demand, the Company would have the option to eliminate the LNG Supply contract and have relatively little stranded assets. In fact, the M&R building and appurtenance could remain as potential emergency injection tap.

## Basis for Project Estimates

This project is planned to be completed and added to rate base in Q3, 2026.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## MF60 NW System Improvement - Phase I

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006634         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2028              | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The MF Northwest (MF60NW) System Improvement Project is a multi-phased system capacity project intended to increase pressures, alleviate capacity concerns, resolve system vulnerabilities, meet customer demand, and continue the safe and reliable delivery of natural gas at all times of the year.

#### Project Scope:

The MF60NW provides most of the gas into the Town of Greece (Greece), Monroe County, which serves approximately 30,000 customers. Due to the existing small diameter gas mains, limited gas facilities or equipment to boost the pressure, and the natural constraint cause by the lake, the pressures in the northerly portion of the system, particularly north of Latta Road, operate at or near 50% MAOP (30 PSIG). The Companies identified this area as a Vulnerable Location in the July 17, 2020 'Supply and Demand Analysis Related to Service Areas with Known Supply Constraint Vulnerabilities' and the April 26, 2024, Long-Term Plan regulatory filings. Since the 2020 filing, this area has continued to see increased requests for residential development projects.

The MF60NW projects will significantly reduce the risks of pressure loss and component failure, therefore improving the safety and reliability of natural gas services to existing customers. The project includes the following scope of work:

##### Phase 1

Replace approximately 32,000 LF of 2-inch, 3-inch and 4-inch SW/SWP main with 32,000 LF of 8-inch PE on Manitou Rd. from West Ridge Rd. to Wilder Rd.

##### Phase 2

Replace approximately 29,875 LF of 2-inch and 4- inch SWP main with 29,875 LF of 8-Inch PE on Hamlin Townline Rd from Clarkson Hamlin Townline Rd. to Curtis Rd. and Curtis Rd.

#### Project Benefits:

At Design Day conditions, the north portion of the MF60 Northwest System, an area that covers nearly 60 SQ miles across the town of Greece, Hilton, and Parma, is operating between 50%-70% MAOP. Approximately 30,000 customers in this area are at or below 50% MAOP.

The MF60NW System has experienced significant growth of the residential development projects (URD) withing the past five (5) years, including: Pollock estates (17-units), Whispering Pines (15 units) 3500 Edge (228 units), Wilder Estate (15 units) and others. In 2024, 8 URD requests for residential development projects were submitted, totaling over 158 units. However, only 5 URD requests were approved.

This growth follows a trend in the twon of Greece, which has seen steady growth over the last decade. According to the US Census Bureau, the Town of Greece reported an 4.61% increase in housing units (6,500 to 6,800 units) between 2012 – 2022.

Pressure is restored to at least 50% MAOP in most of the areas of concern after installation of Phase 1 & II at Design Day conditions.

This project is not located in an area designated as a disadvantaged community (DAC).

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

Gas System Planning reviewed several areas for pipeline system improvement, but few options provide viable outcome of system improvement. One alternative is to build an additional regulator station in the area. However, the area does not have adequate high-pressure pipelines required to provide this benefit. This option was not further considered due to increased footages, cost, and time associate with Regulator Station Rebuild, the NYS Department of Transportation (NYSDOT) highway permitting process, and the constraints associated with construction in new Regulator Station.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028             | 2029        | 2030        | 2031        |
|------------------------|------------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 8,045         | \$ -        | \$ -        | \$ -        | \$ 8,045         | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 518           | \$ -        | \$ -        | \$ -        | \$ 518           | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 17            | \$ -        | \$ -        | \$ -        | \$ 17            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 963           | \$ -        | \$ -        | \$ -        | \$ 963           | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 1,245         | \$ -        | \$ -        | \$ -        | \$ 1,245         | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 10,788</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 10,788</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## MF60 NW System Improvement - Phase II

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006635         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2030              | <b>In-Service Date:</b><br>H2 2030 |

#### Project description:

The MF Northwest (MF60NW) System Improvement Project is a multi-phased system capacity project intended to increase pressures, alleviate capacity concerns, resolve system vulnerabilities, meet customer demand, and continue the safe and reliable delivery of natural gas at all times of the year.

#### Project Scope:

The MF60NW provides most of the gas into the Town of Greece (Greece), Monroe County, which serves approximately 30,000 customers. Due to the existing small diameter gas mains, limited gas facilities or equipment to boost the pressure, and the natural constraint cause by the lake, the pressures in the northerly portion of the system, particularly north of Latta Road, operate at or near 50% MAOP (30 PSIG). The Companies identified this area as a Vulnerable Location in the July 17, 2020 'Supply and Demand Analysis Related to Service Areas with Known Supply Constraint Vulnerabilities' and the April 26, 2024, Long-Term Plan regulatory filings. Since the 2020 filing, this area has continued to see increased requests for residential development projects.

The MF60NW projects will significantly reduce the risks of pressure loss and component failure, therefore improving the safety and reliability of natural gas services to existing customers. The project includes the following scope of work:

##### Phase 1

Replace approximately 32,000 LF of 2-inch, 3-inch and 4-inch SW/SWP main with 32,000 LF of 8-inch PE on Manitou Rd. from West Ridge Rd. to Wilder Rd.

##### Phase 2

Replace approximately 29,875 LF of 2-inch and 4- inch SWP main with 29,875 LF of 8-Inch PE on Hamlin Townline Rd from Clarkson Hamlin Townline Rd. to Curtis Rd. and Curtis Rd.

#### Project Benefits:

At Design Day conditions, the north portion of the MF60 Northwest System, an area that covers nearly 60 SQ miles across the town of Greece, Hilton, and Parma, is operating between 50%-70% MAOP. Approximately 30,000 customers in this area are at or below 50% MAOP.

The MF60NW System has experienced significant growth of the residential development projects (URD) withing the past five (5) years, including: Pollock estates (17-units), Whispering Pines (15 units) 3500 Edge (228 units), Wilder Estate (15 units) and others. In 2024, 8 URD requests for residential development projects were submitted, totaling over 158 units. However, only 5 URD requests were approved.

This growth follows a trend in the twon of Greece, which has seen steady growth over the last decade. According to the US Census Bureau, the Town of Greece reported an 4.61% increase in housing units (6,500 to 6,800 units) between 2012 – 2022.

Pressure is restored to at least 50% MAOP in most of the areas of concern after the installation of Phase I & II at Design Day Conditions.

This project is not located in an area designated as a disadvantaged community (DAC).

This project does not contribute to greenhouse gas reductions.

#### Project Risks and Mitigation Plan:

Project risks include unavailability of contract labor to complete the project. If preferred vendors are not available to perform the work, internal crews would be utilized to complete certain projects and/or additional qualified contractors will be sourced to aid in the completion of the project.

Material costs and contractor labor could be substantially impacted by price volatility that could increase the cost of the projects. If this is the case, the additional cost of the material would be offset by finding offsets in other lower priority projects or programs within the portfolio.

Subsurface conditions not as expected. If subsurface conditions are encountered that are different than anticipated, the additional cost of construction would be offset from lower priority projects within the portfolio.

Lack of adequate funding will require the deferment of project to a later time and the costs will continue to increase.

The inability to address an identified system vulnerability with this project or with an NPA in lieu of this project, could lead to reliability concerns or the need to pursue a moratorium.

Gas System Planning reviewed several areas for pipeline system improvement, but few options provide viable outcome of system improvement. One alternative is to build an additional regulator station in the area. However, the area does not have adequate high-pressure pipelines required to provide this benefit. This option was not further considered due to increased footages, cost, and time associate with Regulator Station Rebuild, the NYS Department of Transportation (NYSDOT) highway permitting process, and the constraints associated with construction in new Regulator Station.

The project estimated has been developed utilizing the Gas Program Database. This database houses the primary attributes of historic projects such as year of construction, diameter of pipe, length of project, pipe material and the actual cost of the project. The proposed project attributes are entered into the database and consist of planned year of construction, length of project, pipe diameter, pipe material, location of the work (in-road trench, off road trench or directional drill), the pressure classification (distribution or transmission), whether the project will be managed internally or externally and any known unique costs that need to be included. Filtering of the historic projects can be done against any of the input attribute values and list of potential projects is provided. The engineering or field planner developing the estimate can choose any or all the filtered projects to use as a foundation of the estimate. The chosen projects are then used as the basis of estimate by adjusting the costs per foot of the historic projects to future year pricing by considering inflation, contractor contract cost changes and timing and material contract cost changes and timing to the year the proposed project is to be constructed. The estimate sheets that follow this document show the historic projects, their attributes and historic cost information and well as the proposed project attributes. The estimated costs of the proposed projects are summarized by construction labor and equipment costs, material cost, internal company labor costs, overhead costs, the cost of external project management and any additional costs uniquely know to the project.

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028        | 2029        | 2030             | 2031        |
|------------------------|------------------|-------------|-------------|-------------|-------------|-------------|------------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        |
| # External Services    | \$ 13,112        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 13,112        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -             | \$ -        |
| # Internal, Labor      | \$ 811           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 811           | \$ -        |
| # Internal, Overheads  | \$ 16            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 16            | \$ -        |
| # Materials            | \$ 991           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 991           | \$ -        |
| # Overheads - External | \$ 1,554         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,554         | \$ -        |
| <b>Total</b>           | <b>\$ 16,484</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 16,484</b> | <b>\$ -</b> |

[illegible]



## CM-2 Article VII

### PROJECT INFORMATION

|                                                       |                                          |                                        |                                            |                                    |
|-------------------------------------------------------|------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                  | <b>Project ID:</b><br>PRJ-006638         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Herrmann, Chris | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Engineering and Delivery | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2029              | <b>In-Service Date:</b><br>H2 2034 |

#### Project description:

The objective of this project is to submit an Article VII application for the CM-2 Pipeline. This application process is the first step in addressing the asset condition of this critical gas transmission system infrastructure. An Article VII permit is required as the proposed pipeline will operate above 125 psig and the replacement section is greater than 1 mile.

#### Project Scope:

This project includes the records research, engineering, development and submission of an Article VII Permit Application Package to the New York State Public Service Commission for the replacement of Certified Main No. 2 (CM-2) at RG&E.

This Scope of Work only includes the measures necessary to complete and submit the Article VII application. Actual pipeline construction related activities are contingent upon obtaining the Article VII permit and receiving approved funding in a future rate proceeding.

#### Project Benefits:

The CM-2 pipeline is a 17.1 mile DOT Transmission pipeline and a 0.6 mile High Pressure Distribution pipeline constructed during 1954 and 1955. This pipeline, which originates at the Caledonia Gate Station and terminates at District Regulator Station 462 at Winton Road, is a critical piece of the RG&E Gas Transmission System, delivering approximately more than 30% of the total throughput of gas to customers in the RG&E system. Portions of the pipeline are 20-inch and 24-inch in diameter; similarly, portions of the pipeline operate at 250-psig and 350-psig.

The 24-inch diameter, 350-psig MAOP portion of the pipeline has a Specified Minimum Yield Strength (SMYS) percentage of 38.5%, the 24-inch diameter, 250-psig MAOP portion of the pipeline has a SMYS percentage of 27.5%, and the 20-inch diameter 250-psig MAOP portion of the pipeline has a SMYS percentage of 19%. 97% of the CM-2 pipeline length operates above 20% designating it as DOT transmission. The transmission portion of CM-2 is subject to integrity inspections in accordance with §192 Subpart O and NY State §255 under Transmission Pipeline Integrity Management. Currently, there are 4.46 miles of High Consequence Areas (HCA) requiring integrity assessments at a maximum of every seven years. Under new PHMSA transmission regulations (commonly referred to as the "Mega Rule") the Company estimates approximately 4.4 miles of Moderate Consequence Areas (MCA) within the extents of the CM-2 pipeline will be added to IMP for assessment on a maximum 10-year interval. In the past five years, the HCA integrity assessments and remediation activities on the CM-2 have accounted for just over \$4.3 million dollars of O&M expenses. The Company estimates that the introduction of MCA's will conceptually double the IMP Program expense of pipeline assessment and management of HCA's and MCAs over the remaining life of the asset. HCA's and MCAs are approximately 50% of the total pipeline mileage where the IMP manages detailed assessment and remediation activities. The remaining 50% of the CM-2 mileage is not mandated to be assessed and managed in same manner as an HCA or MCA and managed primarily through mandated O&M defined activities. As such, there is theoretically a different level of risk attributed to leakage and methane release between a mandated O&M process and an IMP process due to the comprehensive and prescriptive defined requirements established by PHMSA for IMP that exceed typical O&M requirements.

Due to the age, the vintage materials of construction and non-state of the art construction methods used on the CM-2 pipeline from the 1950s, it has reached the end of life. IMP assessments since 2005 have identified anomalies associated with external corrosion, pre-existing third-party damage and manufacturing and construction defects. Since 2007, there have been multiple leaks on all three pipeline sections, with an increase in the past 5 years. The Transmission Integrity Management Program (TIMP) and the IUSA's Gas System Planning Manual, the Company identifies several threats to the CM-2 pipeline, including external corrosion, third party damage, and outside/external forces.

The CM2 pipeline was installed with a coal tar coating that has demonstrated a degradation over time, which increases the likelihood of corrosion and a potential for leakage off methane to the environment.

To confirm the integrity of the pipeline and ensure public safety, a full robotic In-Line Inspection (ILI) would be recommended for the entirety of the pipeline. The construction of CM2, limits the ability to inspect via conventional internal inspection tools, requiring the use of more specialized robotic inline inspection tools.

During HCA External Corrosion Direct Assessments (ECDA), performed over the past five years, coating damage and areas of corrosion have been identified on CM2. A 2024 completed robotic inline inspection of a three-mile segment of CM-2 transmission pipeline identified over 200 anomalous indications. The subsequent excavation and external investigations confirmed that PHMSA defined one-year conditions, corrosion, dents, and other anomalies, along with damaged coating, are present on the CM-2 pipeline. Each assessment performed on CM-2 continues to address risk and provide remediation to ensure integrity as the CM-2 pipeline continues to age.

The 24-inch diameter, 350-psig MAOP portion of the pipeline has a Specified Minimum Yield Strength (SMYS) percentage of 38.5%, the 24-inch diameter, 250-psig MAOP portion of the pipeline has a SMYS percentage of 27.5%, and the 20-inch diameter 250-psig MAOP portion of the pipeline has a SMYS percentage of 19%. 97% of the CM-2 pipeline length operates above 20% designating it as DOT transmission. The transmission portion of CM-2 is subject to integrity inspections in accordance with §192 Subpart O and NY State §255 under Transmission Pipeline Integrity Management. Currently, there are 4.46 miles of High Consequence Areas (HCA) requiring integrity assessments at a maximum of every seven years. Under new PHMSA transmission regulations (commonly referred to as the Mega Rule) the Company estimates approximately 4.4 miles of Moderate Consequence Areas (MCA) within the extents of the CM-2 pipeline will be added to IMP for assessment on a maximum 10-year interval. In the past five years, the HCA integrity assessments and remediation activities on the CM-2 have accounted for just over 4.3 million dollars of O&M expenses. The Company estimates that the introduction of MCA's will conceptually double the IMP Program expense of pipeline assessment and management of HCA's and MCAs over the remaining life of the asset. HCA's and MCAs are approximately 50% of the total pipeline mileage where the IMP manages detailed assessment and remediation activities. The remaining 50% of the CM-2 mileage is not mandated to be assessed and managed in same manner as an HCA or MCA and managed primarily through mandated O&M defined activities. As such, there is theoretically a different level of risk attributed to leakage and methane release between a mandated O&M process and an IMP process due to the comprehensive and prescriptive defined requirements established by PHMSA for IMP that exceed typical O&M requirements.

Due to the age, the vintage materials of construction and non-state of the art construction methods used on the CM-2 pipeline from the 1950s, it has reached the end of life. IMP assessments since 2005 have identified anomalies associated with external corrosion, pre-existing third-party damage and manufacturing and construction defects. Since 2007, there have been multiple leaks on all three pipeline sections, with an increase in the past 5 years. The Transmission Integrity Management Program (TIMP) and the IUSA's Gas System Planning Manual, the Company identifies several threats to the CM-2 pipeline, including external corrosion, third party damage, and outside/external forces.

The intent of this project is to develop and submit the full Article VII application for a pipeline to replace CM-2. This involves the records research, pipeline routing, design activities, coordination with Department of Public Service and other involved agencies, site walkthrough, easement preparations and Project Management oversight. Replacement of this pipe not only eliminates the risk of operating a vintage pipeline but also removes it from the requirements of the Integrity Management Program due to the pipe having a thicker wall thickness and stronger grade steel pipe.

#### **Project Risks and Mitigation Plan:**

No construction is occurring on this project in the 2026-2031 period. The scope of work in the 2026-2031 period is limited to the preparation and submission of the Article VII documentation.

Risks are limited to engineering development and schedule and timeline for approval of the Article VII. If development of the project plans becomes an issue, the project can be reassigned to another engineering firm. If the schedule is delayed, the submission of the Article VII filing will be delayed. There is float in the schedule prior to planned construction that delays in the submission or approval of the Article VII can be absorbed.

#### **Risk of No Action:**

Regular O&M maintenance activities are performed to ensure the integrity of the infrastructure however given the age, vintage, function, and criticality to system reliability, the pipeline has an ongoing level of risk and is recommended for replacement to ensure public safety and reliability to customers. Continual operation of the CM-2 pipeline involving O&M and IMP activities to prolong the pipeline life will ensure operational safety however do not reduce the risk and potential for leakage, methane release to the environment and disruption of service to customers.

The CM-2 pipeline is a critical feed into the RG&E Rochester System, serving tens of thousands of customers, including many located in low to moderate income and areas designated as disadvantaged communities (DAC).

#### **Project Alternatives:**

Pipeline routing alternatives are part of the Article VII permit preparation process. The Company will solicit the marketplace with an NPA Request for Proposals. Given the current state of available NPA options, it is unlikely that there are commercially available NPA solutions that could reasonably reduce the load of tens of thousands of customers, including the industrial and hard-to-electrify customers that depend on service from this pipeline to power their business and drive the local economy.

#### **Basis for Project Estimates**

The basis for the cost for filing the Article VII is based on historical costs for preparing Article VII filing documentation for the CM-1 (CM-6) Transmission Gas Main Replacement projects at RG&E.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026 | 2027 | 2028 | 2029     | 2030   | 2031 |
|------------------------|-----------------|------|------|------|------|----------|--------|------|
| # AFUDC                | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # CIAC                 | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # External Services    | \$ 3,775        | \$ - | \$ - | \$ - | \$ - | \$ 2,975 | \$ 800 | \$ - |
| # Internal - Non-AC    | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # Internal, Labor      | \$ 125          | \$ - | \$ - | \$ - | \$ - | \$ 125   | \$ -   | \$ - |
| # Internal, Overheads  | \$ 1            | \$ - | \$ - | \$ - | \$ - | \$ 1     | \$ -   | \$ - |
| # Materials            | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # Overheads - External | \$ 417          | \$ - | \$ - | \$ - | \$ - | \$ 338   | \$ 79  | \$ - |
| <b>Total</b>           | <b>\$ 4,318</b> | \$ - | \$ - | \$ - | \$ - | \$ 3,439 | \$ 879 | \$ - |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE Cathodic Protection on LPP

### PROJECT INFORMATION

|                                         |                                          |                                        |                                             |                                    |
|-----------------------------------------|------------------------------------------|----------------------------------------|---------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                    | <b>Project ID:</b><br>PRJ-007518         | <b>Charge Code:</b><br>Gas             | <b>Project Sponsor:</b><br>Disbennett, Ross | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Gas Operations | <b>Rate Case Category</b><br>Reliability | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing               | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

This program is proposed to add cathodic protection to leak prone pipe (LPP) to extend its service life. The cathodic protection will be added to pipe segments deemed suitable by testing, inspection and/or evaluation using industry techniques and practices. Galvanic anodes are the most appropriate means to provide the cathodic protection based on ease of installation and economical cost. One rectifier bed is recommended based on cost at NYSEG.

#### Project Scope:

The estimated miles for cathodic protection installation are 5 miles at NYSEG and over 10 miles at RG&E.

#### Project Benefits:

Capital investment reduction by protecting rather than replacing LPP by increasing the LPP service life while providing an increase in safety reducing the probability of corrosion leaks.

#### Project Risks and Mitigation Plan:

Costs are mitigated by use of existing contracted materials and negotiated contractor construction rates. Risks are increases to materials and labor costs. 10% increase in labor cost is anticipated in the cost estimate.

#### Risk of No Action:

This program is proposed to add cathodic protection to leak prone pipe (LPP) to extend its service life. The cathodic protection will be added to pipe segments deemed suitable by testing, inspection and/or evaluation using industry techniques and practices. Galvanic anodes are the most appropriate means to provide the cathodic protection based on ease of installation and economical cost. One rectifier bed is recommended based on cost at NYSEG.

#### Project Alternatives:

Replacement of the LPP and associated services.

#### Basis for Project Estimates

Existing material contract costs, contracted construction prices through Master Service Agreements, and company labor costs.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029          | 2030          | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|---------------|---------------|-------------|
| # AFUDC                | \$ 56           | \$ -        | \$ -        | \$ 14         | \$ 17         | \$ 20         | \$ 6          | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # External Services    | \$ 1,865        | \$ -        | \$ -        | \$ 466        | \$ 560        | \$ 653        | \$ 187        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |
| # Internal, Labor      | \$ 145          | \$ -        | \$ -        | \$ 36         | \$ 43         | \$ 51         | \$ 14         | \$ -        |
| # Internal, Overheads  | \$ 4            | \$ -        | \$ -        | \$ 1          | \$ 1          | \$ 1          | \$ 0          | \$ -        |
| # Materials            | \$ 220          | \$ -        | \$ -        | \$ 55         | \$ 66         | \$ 77         | \$ 22         | \$ -        |
| # Overheads - External | \$ 284          | \$ -        | \$ -        | \$ 85         | \$ 88         | \$ 87         | \$ 23         | \$ -        |
| <b>Total</b>           | <b>\$ 2,573</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 657</b> | <b>\$ 775</b> | <b>\$ 889</b> | <b>\$ 252</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **NYSEG Common Buildings and Facilities**

## NYSEG Minor Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                                          |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>UW-GS505-NYSEG-CM               | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Branco, Sarah | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Companies' Minor Projects address various, core functions essential to its building portfolio needed to support all business functions. Minor Projects are relatively small dollar investments that include upgrades to facility systems due to end of life assets, or failures associated with mechanical, electrical, building structures, control systems etc., and the link. These projects are necessary in order to improve efficiency, reduce energy consumption, reduce greenhouse emissions, and address security and safety issues.

Minor projects are required on an annual basis, due to planned and unplanned replacement of assets at the end of their useful life, unplanned failures, emergency replacement, security concerns, employee changes, storm support, and a multitude of emergency needs that can occur. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

The Minor capital projects are improvements to upgrade systems in each facility due to: end of life, failures associated with mechanical, electrical, building structures, control systems etc., improve the efficiency, reducing energy consumption, reducing greenhouse emissions etc. or addressing security and safety issues. Annual amounts are calculated using historical spend combined with any identified projects.

The Project Scope for 2025 includes projects necessary office adjustments to support the incremental FTEs being requested throughout the Rate Case.

#### Project Benefits:

Benefits of this project include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include lengthy lead time for the procurement and installation of necessary equipment, as equipment availability is dependent on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accommodate employees.

#### Basis for Project Estimates

Historical costs

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 515           | \$ 38           | \$ 88           | \$ 83           | \$ 113          | \$ 194          |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 13,866        | \$ 1,864        | \$ 2,589        | \$ 2,645        | \$ 2,567        | \$ 4,201        |  |  |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 127           | \$ 70           | \$ 14           | \$ -            | \$ -            | \$ 43           |  |  |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 997           | \$ 212          | \$ -2           | \$ 121          | \$ 379          | \$ 287          |  |  |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 15,505</b> | <b>\$ 2,184</b> | <b>\$ 2,688</b> | <b>\$ 2,849</b> | <b>\$ 3,059</b> | <b>\$ 4,724</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026             | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 36,575        | \$ 3,163        | \$ 10,975        | \$ 5,933        | \$ 4,265        | \$ 4,080        | \$ 4,080        | \$ 4,080        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 36,575</b> | <b>\$ 3,163</b> | <b>\$ 10,975</b> | <b>\$ 5,933</b> | <b>\$ 4,265</b> | <b>\$ 4,080</b> | <b>\$ 4,080</b> | <b>\$ 4,080</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## NYSEG EV Chargers

### PROJECT INFORMATION

|                                           |                                                       |                                     |                                |                                    |
|-------------------------------------------|-------------------------------------------------------|-------------------------------------|--------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001453                      | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b>        | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Dec-2020 | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

The NYSEG EV Projects are projects related to energy efficiency improvements, such as the installation of Electric Vehicle Charge Stations and electric vehicle supply equipment at NYSEG facilities. A charging station, also known as a charge point, chargepoint, or electric vehicle supply equipment (EVSE), is a power supply device that supplies electrical power for recharging plug-in electric vehicles (including battery electric vehicles, electric trucks, electric buses, neighborhood electric vehicles, and plug-in hybrid vehicles). These projects will allow employee and company electric vehicles to be charged onsite, promoting their use both personally and operationally, in an effort to align with New York's Climate Leadership and Community Protection Act (CLCPA) and the Companies' Sustainability goals.

#### Project Scope:

Specific Electric Vehicle (EV) projects consist of the procurement and installation of electrical vehicle chargers in various in NYSEG Facilities. This includes: L2 charger will have a 100A 480V 3Ph feed and the L3 charger will have two 40A 208V 1Ph feeds. Also included in the installation will be trenching, backfilling, patching, pacing and concrete base for the chargers.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of this project include:

- (1) make energy efficiency improvements
- (2) alignment with the Avangrid ESG goals to reduce emissions and use green energy
- (3) Green Power for employees & Fleet vehicles
- (4) Positive impact to reduce the CO2 footprint of the company

#### Project Risks and Mitigation Plan:

Project risks include lengthy lead time for the permitting, procurement and installation of necessary equipment, as equipment availability is dependent on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of increased operational costs for utility consumption, and no reduction of the Company's carbon footprint which does not provide the ability to align with Company and State emission goals.

#### Project Alternatives:

Alternatives are limited to looking for additional renewable energy sources, such as installation of biodiesel tanks to allow the company to still meet renewable energy goals through vehicles with biodiesel engines to utilize green fuel.

#### Basis for Project Estimates

Bid Process

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020          | 2021          | 2022          | 2023          | 2024        |  |  |
|------------------------|---------------|---------------|---------------|---------------|---------------|-------------|--|--|
| # AFUDC                | \$ 1          | \$ -          | \$ -          | \$ -          | \$ 0          | \$ 1        |  |  |
| # CIAC                 | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |  |  |
| # External Services    | \$ 538        | \$ -          | \$ 119        | \$ 257        | \$ 156        | \$ 6        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |  |  |
| # Internal, Labor      | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |  |  |
| # Internal, Overheads  | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |  |  |
| # Materials            | \$ 303        | \$ 154        | \$ -0         | \$ 149        | \$ -          | \$ -        |  |  |
| # Overheads - External | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 842</b> | <b>\$ 154</b> | <b>\$ 119</b> | <b>\$ 406</b> | <b>\$ 156</b> | <b>\$ 7</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025          | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,200        | \$ 200        | \$ 1,000        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,200</b> | <b>\$ 200</b> | <b>\$ 1,000</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG Auburn Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                               |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|-----------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001372                      | <b>Charge Code:</b><br>Common                 | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Auburn Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Auburn Service Center consist of the procurement and installation of new HVAC above the fleet garage, new exterior storage for fleet vehicles and equipment, new interior lighting, new roof replacement, and interior renovations of the second floor, which is necessary to accommodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) New Roof Installation: Select durable, weather-resistant materials for the new roof and hire experienced contractors to ensure proper installation, enhancing insulation and protection against environmental elements.
- (4) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (5) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings unnecessarily.

## Bid Process

[illegible]

## NYSEG Geneva Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001384                      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Geneva Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the East Side of the Geneva Service Center consist of a complete overhaul of the east side of the building, including a new design, removal and disposal of old out-dated equipment and furniture, space consolidation, and the procurement and installation of new HVAC, electrical, controls, civil, structural, doors, windows, and facades. This redesign is necessary to accomodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be acheived by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the development, procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timly and accurety.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings uncessarily.

#### Basis for Project Estimates

Bid Process/Historical Costs

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023         | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|--------------|---------------|--|--|
| # AFUDC                | \$ 14         | \$ -        | \$ -        | \$ -        | \$ 0         | \$ 14         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # External Services    | \$ 839        | \$ -        | \$ -        | \$ -        | \$ 53        | \$ 786        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 853</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 53</b> | <b>\$ 800</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026        | 2027        | 2028        | 2029          | 2030            | 2031        |
|------------------------|-----------------|---------------|-------------|-------------|-------------|---------------|-----------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| # External Services    | \$ 3,920        | \$ 800        | \$ -        | \$ -        | \$ -        | \$ 250        | \$ 2,870        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -            | \$ -        |
| <b>Total</b>           | <b>\$ 3,920</b> | <b>\$ 800</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 250</b> | <b>\$ 2,870</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Brewster Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001374                      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the Brewster Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Brewster Service Center consist of the procurement and installation of new HVAC chillers, a new 650kVA generator, exterior upgrades such as parking, and interior renovations necessary to accomodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be acheived by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficienct HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Exterior Parking Upgrades: Resurface and reconfigure parking areas to improve accessability and safety. Install adequate lighting and clear signage to enhance visibility, safety, and security.
- (5) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure during an outage event due to lack of generator functionality, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timly and accurectly.

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings unnecessarily.

## Bid Process

[illegible]



## NYSEG Mechanicville Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001397                      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Mechanicville Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Mechanicville Service Center consist of the procurement and installation of new HVAC and electrical upgrades including: new exterior lighting, new interior lighting, new backup generator, recircuiting, new communication cabling, wireless communication devices, new roof top unit, new heat pump units. This project also supports interior renovations necessary to accomodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be acheived by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

The NYSEG Mechanicville building is a critical infrastructure building supporting the electric and gas operations groups and a large customer base.

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure during an outage event due to lack of backup generator functionality, and inadadaquate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timly and accuretly.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings uncessarily.

#### Basis for Project Estimates

Historical costs and Bids

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023          | 2024          |  |  |
|------------------------|-----------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ 53           | \$ -        | \$ -        | \$ -        | \$ 5          | \$ 47         |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ 1,412        | \$ -        | \$ -        | \$ -        | \$ 716        | \$ 696        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 1,465</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 721</b> | <b>\$ 744</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027        | 2028            | 2029        | 2030          | 2031        |
|------------------------|-----------------|---------------|---------------|-------------|-----------------|-------------|---------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| # External Services    | \$ 3,150        | \$ 600        | \$ 300        | \$ -        | \$ 1,600        | \$ -        | \$ 650        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -        | \$ -            | \$ -        | \$ -          | \$ -        |
| <b>Total</b>           | <b>\$ 3,150</b> | <b>\$ 600</b> | <b>\$ 300</b> | <b>\$ -</b> | <b>\$ 1,600</b> | <b>\$ -</b> | <b>\$ 650</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Hamburg Operations Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                        |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|----------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001386                      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Hamburg Operations Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Hamburg Operations Center consist of a complete overhaul of the west side of the building, including a new design, removal and disposal of old out-dated equipment and furniture, space consolidation, and the procurement and installation of new HVAC, electrical, controls, civil, structural, elevators, doors, windows, and facades. This redesign is necessary to accomodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be acheived by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timly and accuretly.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings uncessarily.

#### Basis for Project Estimates

Historical costs

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| Total                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025          | 2026        | 2027          | 2028            | 2029         | 2030         | 2031        |
|------------------------|-----------------|---------------|-------------|---------------|-----------------|--------------|--------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| # External Services    | \$ 1,905        | \$ 750        | \$ -        | \$ 100        | \$ 1,000        | \$ 40        | \$ 15        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -        | \$ -          | \$ -            | \$ -         | \$ -         | \$ -        |
| <b>Total</b>           | <b>\$ 1,905</b> | <b>\$ 750</b> | <b>\$ -</b> | <b>\$ 100</b> | <b>\$ 1,000</b> | <b>\$ 40</b> | <b>\$ 15</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG ECC Projects

### PROJECT INFORMATION

|                                           |                                                       |                                        |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|----------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001380                      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Strategic and Efficiency | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Emergency Control Center (ECC) are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the ECC consist of the procurement and installation of new HVAC, and critical Electrical upgrades including new exterior lighting, new interior lighting, new backup generator, new UPS system, recircuiting, new communication cabling, wireless communication devices, new roof top unit, and new VAVs (variable air units). This project also supports interior renovations necessary to accommodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

This Emergency Command Center building serves a critical operational need to ensure the reliability of our service to customers.

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process. Additionally, ECC buildings require complex design and execution due to their critical 24/7 operations.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure during an outage event due to lack of backup generator functionality, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately. Potential of these risk in an operations building is elevated and considered critical due to the operations needed to provide reliability to customers.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accommodate employees and equipment.

#### Basis for Project Estimates

Bid Process

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023            | 2024          |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-----------------|---------------|--|--|
| # AFUDC                | \$ 23           | \$ -        | \$ -        | \$ -        | \$ 1            | \$ 22         |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -          |  |  |
| # External Services    | \$ 823          | \$ -        | \$ -        | \$ -        | \$ 437          | \$ 385        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -          |  |  |
| # Materials            | \$ 759          | \$ -        | \$ -        | \$ -        | \$ 755          | \$ 5          |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 1,605</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,193</b> | <b>\$ 412</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026        | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,325        | \$ 525        | \$ -        | \$ 800        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,325</b> | <b>\$ 525</b> | <b>\$ -</b> | <b>\$ 800</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG KGO Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001389                      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Kirkwood General Office (KGO) are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Kirkwood General Office consist of the procurement and installation of new HVAC, and electrical upgrades including: new exterior lighting, new interior lighting, new backup generator, new UPS system, recirculating, new communication cabling, wireless communication devices, new roof top unit, and new heat pump units. This project also supports interior renovations necessary to accommodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure during an outage event due to lack of backup generator functionality, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accommodate employees, wasting space that could be utilized in existing buildings unnecessarily.

#### Basis for Project Estimates

Bid Process

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ 41         | \$ -        | \$ -        | \$ -        | \$ 0          | \$ 41         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ 934        | \$ -        | \$ -        | \$ -        | \$ 197        | \$ 737        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 975</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 197</b> | <b>\$ 778</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026         | 2027        | 2028        | 2029        | 2030          | 2031        |
|------------------------|-----------------|---------------|--------------|-------------|-------------|-------------|---------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| # External Services    | \$ 1,725        | \$ 900        | \$ 50        | \$ -        | \$ -        | \$ -        | \$ 775        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -         | \$ -        | \$ -        | \$ -        | \$ -          | \$ -        |
| <b>Total</b>           | <b>\$ 1,725</b> | <b>\$ 900</b> | <b>\$ 50</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 775</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## NYSEG Elmira Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001381                      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Elmira Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Elmira Service Center consist of the procurement and installation of new HVAC, Electrical upgrades, Exterior upgrades such as a new roof and parking lot, and interior upgrades such as lighting and renovations necessary to accomodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be acheived by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficienct HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) New Roof Installation: Select durable, weather-resistant materials for the new roof and hire experienced contractors to ensure proper installation, enhancing insulation and protection against environmental elements.
- (4) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (5) Exterior Parking Upgrades: Resurface and reconfigure parking areas to improve accessibility and safety. Install adequate lighting and clear signage to enhance visibility, safety, and security.
- (6) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timly and accurately.

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings unnecessarily.

## Bid Process

[illegible]

## NYSEG Long Lake Building Expansion

### PROJECT INFORMATION

|                                           |                                                       |                                        |                                |                                    |
|-------------------------------------------|-------------------------------------------------------|----------------------------------------|--------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-002910                      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b>        | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Oct-2024 | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Projects occurring at the NYSEG Long Lake Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

NYSEG Long Lake facility is too small based on the number of employees working at this site and the size/quantities of vehicles. It currently poses operational and safety concerns to the employees and customers. Specific projects at the Long Lake Service Center consist of an increase in the square footage of the facility based on an increase of employees and the size/quantities of vehicles are longer by 2-3' based on current vehicle purchases supporting Line Operations. This would include an extension on the line bays, an addition bay, new overhead doors, new man doors, lighting, HVAC, and all civil structural requirements.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of this project include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include lengthy lead time for the permitting, procurement and installation of necessary equipment, as equipment availability is dependent on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings unnecessarily.

#### Basis for Project Estimates

Historical Costs

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 165        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 165        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 166</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 166</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,600        | \$ 350        | \$ 1,250        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,600</b> | <b>\$ 350</b> | <b>\$ 1,250</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Lockport Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001395                      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Lockport Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Lockport Service Center consist of the procurement and installation of new a Storm and Sanitary System throughout the facility, including a new Oil Water Separator system and lateral tie ins to municipal systems. This includes new design, removal of old broken equipment and furniture, and upgrading the existing system with associated new underground mains, catch basins, interior laterals, Building Maintenance System tie-ins for alarms, and all necessary permitting. These upgrades are needed as the current system is non-compliant with state and local environmental requirements. Storm systems cannot be tied into the same systems as sewer system if two separate municipal systems exist in the township. Also, oil water separator systems need to be functional, inspected annually, and tied into the approved municipal system.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space
- (8) bringing the building system up to compliance with state and local environmental requirements
- (9) the ability to connect the storm systems into the sewer and municipal systems

#### Project Risks and Mitigation Plan:

Project risks include weather conditions at the time of upgrade, and lengthy lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

There are no alternatives for this project. These critical upgrades are necessary to ensure the building is operating safely and in compliance with environmental requirements.

#### Basis for Project Estimates

Bid Process

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 866        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 866        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 868</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 868</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026        | 2027            | 2028        | 2029        | 2030          | 2031          |
|------------------------|-----------------|---------------|-------------|-----------------|-------------|-------------|---------------|---------------|
| # AFUDC                | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| # CIAC                 | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| # External Services    | \$ 2,410        | \$ 350        | \$ -        | \$ 1,695        | \$ -        | \$ -        | \$ 215        | \$ 150        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| # Internal, Labor      | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| # Materials            | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| # Overheads - External | \$ -            | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 2,410</b> | <b>\$ 350</b> | <b>\$ -</b> | <b>\$ 1,695</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 215</b> | <b>\$ 150</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Hornell Service Center Projects

### PROJECT INFORMATION

|                                           |                                                       |                                     |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|-------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001387                      | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Hornell Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Hornell Service Center consist of the procurement and installation of a new boiler and associated circulation pumps, the design, removal, and upgrading of the backup generator with associated distribution panels, a new Automatic Transfer Switch, and upgraded electric recirculating due to end of life of the current HVAC system.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) Appropriately sized HVAC system to meet the capacity needs of the building

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure during an outage event due to lack of backup generator functionality, and inadequate working conditions for employees to perform work safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent a backup generator.

#### Basis for Project Estimates

Bid Process

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 3          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 3          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 893        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 893        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 895</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 895</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025          | 2026        | 2027        | 2028        | 2029        | 2030            | 2031            |
|------------------------|-----------------|---------------|-------------|-------------|-------------|-------------|-----------------|-----------------|
| # AFUDC                | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| # External Services    | \$ 4,120        | \$ 600        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,750        | \$ 1,770        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| # Internal, Labor      | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| # Materials            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| # Overheads - External | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 4,120</b> | <b>\$ 600</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,750</b> | <b>\$ 1,770</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## NYSEG Geneva Service Center West Projects

### PROJECT INFORMATION

|                                           |                                                       |                                        |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|----------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001385                      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Geneva Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the West Side of the Geneva Service Center consist of a complete overhaul of the west side of the building, including a new design, removal and disposal of old out-dated equipment and furniture, space consolidation, and the procurement and installation of new HVAC, electrical, controls, civil, structural, doors, windows, and facades. This redesign is necessary to accomodate space for additional employee growth, allowing for the further consolidation of office locations due to increased building occupancy availability.

The project objectives will be acheived by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Interior Lighting and Renovations: Upgrade to LED lighting for better energy efficiency and improved illumination, Redesign interior space to enhance functionality and aesthetics, focusing on modern, ergonomic designs that promote productivity and comfort.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the development, procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accuretly.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accomodate employees, wasting space that could be utilized in existing buildings unnecessarily.

#### Basis for Project Estimates

Historical costs

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026 | 2027 | 2028 | 2029     | 2030   | 2031 |
|------------------------|-----------------|------|------|------|------|----------|--------|------|
| # AFUDC                | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # CIAC                 | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # External Services    | \$ 4,105        | \$ - | \$ - | \$ - | \$ - | \$ 3,905 | \$ 200 | \$ - |
| # Internal - Non-AC    | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # Internal, Labor      | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # Internal, Overheads  | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # Materials            | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| # Overheads - External | \$ -            | \$ - | \$ - | \$ - | \$ - | \$ -     | \$ -   | \$ - |
| <b>Total</b>           | <b>\$ 4,105</b> | \$ - | \$ - | \$ - | \$ - | \$ 3,905 | \$ 200 | \$ - |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG Lancaster Service Center Garage Projects

### PROJECT INFORMATION

|                                           |                                                       |                                        |                               |                                        |
|-------------------------------------------|-------------------------------------------------------|----------------------------------------|-------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001391                      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b>       | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Projects occurring at the NYSEG Lancaster Service Center Garage are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Lancaster Service Center Garage consist of approximately 19,206sf of updates such as the procurement and installation of a replacement Exterior Finish Insulation System (EFIS), roof replacement, and replacement of two Air Handling Units (AHU), necessary due to end of life and increased repairs. AHUs are 30 years old, causing end of life and increased repairs have occurred over the last several years. Roof exterior shell needs a substantial number of repairs and replacement is needed to insure a tight building envelope with no leaks.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) HVAC & Electrical Upgrades: Engage certified professionals to design and install energy efficient HVAC systems and modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) New Roof Installation: Select durable, weather-resistant materials for the new roof and hire experienced contractors to ensure proper installation, enhancing insulation and protection against environmental elements.
- (4) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of these renovations include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees

#### Project Risks and Mitigation Plan:

Project risks include length lead time for the procurement and installation of necessary equipment, as equipment availability is dependant on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment and building material.

#### Basis for Project Estimates

Historical Costs

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026         | 2027          | 2028            | 2029        | 2030          | 2031        |
|------------------------|-----------------|---------------|--------------|---------------|-----------------|-------------|---------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| # External Services    | \$ 2,390        | \$ 250        | \$ 75        | \$ 100        | \$ 1,765        | \$ -        | \$ 200        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -         | \$ -          | \$ -            | \$ -        | \$ -          | \$ -        |
| <b>Total</b>           | <b>\$ 2,390</b> | <b>\$ 250</b> | <b>\$ 75</b> | <b>\$ 100</b> | <b>\$ 1,765</b> | <b>\$ -</b> | <b>\$ 200</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **RG&E Common Buildings and Facilities**

## RGE Minor Projects

### PROJECT INFORMATION

|                                           |                                                       |                                                |                                          |                                        |
|-------------------------------------------|-------------------------------------------------------|------------------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>UW-GS502-RGE-CM                 | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Branco, Sarah | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The Companies' Minor Projects address various, core functions essential to its building portfolio needed to support all business functions. Minor Projects are relatively small dollar investments that include upgrades to facility systems due to end of life assets, or failures associated with mechanical, electrical, building structures, control systems etc., and the link. These projects are necessary in order to improve efficiency, reduce energy consumption, reduce greenhouse emissions, and address security and safety issues.

Minor projects are required on an annual basis, due to planned and unplanned replacement of assets at the end of their useful life, unplanned failures, emergency replacement, security concerns, employee changes, storm support, and a multitude of emergency needs that can occur. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

The Minor capital projects are improvements to upgrade systems in each facility due to: end of life, failures associated with mechanical, electrical, building structures, control systems etc., improve the efficiency, reducing energy consumption, reducing greenhouse emissions etc. or addressing security and safety issues. Annual amounts are calculated using historical spend combined with any identified projects.

The Project Scope for 2025 includes projects necessary office adjustments to support the incremental FTEs being requested throughout the Rate Case.

#### Project Benefits:

Benefits of this project include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements through upgraded HVAC and LED
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees
- (6) providing space to accommodate additional employee growth
- (7) allow further building consolidation efforts by optimizing available space

#### Project Risks and Mitigation Plan:

Project risks include lengthy lead time for the procurement and installation of necessary equipment, as equipment availability is dependent on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, potential for system failure, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately.

#### Project Alternatives:

Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment, and increased operational Costs (Opex) in order to rent or lease the office and storage space needed to accommodate employees.

#### Basis for Project Estimates

Historical Costs

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020          | 2021            | 2022          | 2023            | 2024            |  |  |
|------------------------|-----------------|---------------|-----------------|---------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 335          | \$ 31         | \$ 78           | \$ 34         | \$ 57           | \$ 136          |  |  |
| # CIAC                 | \$ -1           | \$ -          | \$ -            | \$ -          | \$ -            | \$ -1           |  |  |
| # External Services    | \$ 5,068        | \$ 704        | \$ 925          | \$ 476        | \$ 1,498        | \$ 1,464        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -          | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 401          | \$ 167        | \$ 74           | \$ 55         | \$ 93           | \$ 12           |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -          | \$ -            | \$ -            |  |  |
| # Materials            | \$ 203          | \$ 35         | \$ 7            | \$ 41         | \$ 68           | \$ 52           |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -          | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 6,007</b> | <b>\$ 936</b> | <b>\$ 1,085</b> | <b>\$ 606</b> | <b>\$ 1,716</b> | <b>\$ 1,663</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 17,890        | \$ 1,740        | \$ 7,802        | \$ 2,980        | \$ 1,468        | \$ 1,300        | \$ 1,300        | \$ 1,300        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 17,890</b> | <b>\$ 1,740</b> | <b>\$ 7,802</b> | <b>\$ 2,980</b> | <b>\$ 1,468</b> | <b>\$ 1,300</b> | <b>\$ 1,300</b> | <b>\$ 1,300</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## RGE BMS System

### PROJECT INFORMATION

|                                           |                                                       |                                     |                                          |                                      |
|-------------------------------------------|-------------------------------------------------------|-------------------------------------|------------------------------------------|--------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric  | <b>Project ID:</b><br>PRJ-002733                      | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Lalonde, Ryan | <b>Project Type:</b><br>Project      |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>12/31/2026         | <b>In-Service Date:</b><br>3/31/2026 |

**Project description:**

RGE Building Management System

The BMS system will provide local / remote access to control and monitor all building systems including, but not limited to: Heating equipment, Cooling Equipment, Temperature Balancing, Electrical switchgear, Electrical Loads, UPS, Generators, Lighting, OH Doors, Elevators, Sumps, OWS, Fuel Levels, Fire Panel Monitoring, and Utility Monitoring. The system will allow for automatic alarm monitoring and alerting to maintenance technicians. The system will be based on the newest technology available and on an open protocol interface allowing for non-proprietary maintenance and support.. Similar systems have been installed at Iberdrola SA and Scottish Power..

This project will align / enhance COVID and ESG strategies by creating the ability to monitor: air quality, building system performance, real time alarming, integration to FACIL, energy management, and building condition metrics.

**Project Scope:**

To design and install a new BMS (Building Management System) system throughout a majority of High Priority / High Occupancy Facilities across AVANGRID occupied BAM Assets. The BMS systems is the starting point for Smart Building Technology. Scope includes hardware and software installation. Various end of life applications are being replaced.

**Project Benefits:**

Current systems are at end of life and not supported by IT. Systems are only throughout a small portion of current facilities. Existing systems are proprietary and require sole source contracts. Consolidating 5 systems into one makes the environment more reliable and efficient for everyone. Allows for monitoring of air quality, air flow, and utility management. Reductions in OPEX - Maintenance contracts and Service contracts. Installation of new system allow for data collection and real time monitoring that can be used for benchmarking and KPI's. New system/technology is expandable allowing for installation at future sites as Avangrid portfolio increases. New BMS system is flexible and can interface with other system such as security, fire protection and future IT systems creating efficiencies.

**Project Risks and Mitigation Plan:**

Old As-built drawings that create several change orders



|                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------|
| <b>Risk of No Action:</b><br>Several failures in the buildings associated with work time lost and increased operation costs. |
| <b>Project Alternatives:</b><br>Continue to patch and repair as much as possible before considering replacement.             |
| <b>Basis for Project Estimates</b><br>Historical Costs and Proposals from vendor                                             |

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2021          | 2022          | 2023          | 2024         | 2025          |  |  |
|------------------------|---------------|---------------|---------------|---------------|--------------|---------------|--|--|
| # AFUDC                | \$ 145        | \$ 0          | \$ 14         | \$ 37         | \$ 43        | \$ 51         |  |  |
| # CIAC                 | \$ -          | \$ -          | \$ -          | \$ -          | \$ -         | \$ -          |  |  |
| # External Services    | \$ 844        | \$ 194        | \$ 221        | \$ 337        | \$ 34        | \$ 58         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -          | \$ -          | \$ -         | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -          | \$ -          | \$ -          | \$ -         | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -          | \$ -          | \$ -          | \$ -         | \$ -          |  |  |
| # Materials            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -         | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -          | \$ -          | \$ -          | \$ -         | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 989</b> | <b>\$ 195</b> | <b>\$ 234</b> | <b>\$ 374</b> | <b>\$ 77</b> | <b>\$ 109</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

[illegible]

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

## RGE Mushroom Blvd Projects

### PROJECT INFORMATION

|                                           |                                                       |                                        |                                           |                                        |
|-------------------------------------------|-------------------------------------------------------|----------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric  | <b>Project ID:</b><br>PRJ-001430                      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Garcia, Miguel | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Buildings and Facilities | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>1/1/2026            | <b>In-Service Date:</b><br>12/31/2026  |

#### Project description:

Projects occurring at the RGE Mushroom Blvd Service Center are prioritized based on impacts to the business, level of criticality, end-of-life assets, failures, employee changes, storm response, emergency needs and health, and safety related requirements. Priorities change on an annual basis and throughout any given budget year. These projects create savings in operational maintenance expenses with the installation of new and more efficient equipment. They enhance reliability and mitigate risks to provide safer working conditions, extends the life cycles of assets, avoid disruption to Electric Operations, and support green and sustainable initiatives, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Mushroom Blvd Service Center consist of the procurement and installation of new mechanical and electrical systems due to end of life of the current system assets.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) Electrical Upgrades: Engage certified professionals to design and install modern electrical components. Implement smart technologies to optimize performance and reduce energy consumption.
- (3) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of this project include:

- (1) increasing the reliability of the building and systems life
- (2) make energy efficiency improvements
- (3) reduce maintenance needs and expenses
- (4) reduce utility consumption through increased energy efficiency
- (5) increased safety for employees

#### Project Risks and Mitigation Plan:

Project risks include lengthy lead time for the procurement and installation of necessary equipment, as equipment availability is dependent on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

|                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Risk of No Action:</b><br>Risk of no action includes lack of building reliability, increased operational costs, potential for system failure, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately. |
| <b>Project Alternatives:</b><br>Alternatives are limited to increasing maintenance expenses through repair of broken or outdated equipment.                                                                                                                                                                                                  |
| <b>Basis for Project Estimates</b><br>Historical costs                                                                                                                                                                                                                                                                                       |





# **NYSEG Common Customer Service**

## NYSEG - Regulatory Driven Efforts / Rate Case

### PROJECT INFORMATION

|                                           |                                               |                                                |                                           |                                        |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-001516              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program covers SAP and other software system upgrades and enhancements that are required by New York regulatory mandates and rate case initiatives that will be funded by the business.

On an annual basis, there are anticipated regulatory requests which require business, internal IT, and external SWF resources to develop and implement the system changes necessary.

#### Project Scope:

Scope for 2025 includes regulatory & rate case initiatives in the areas of Retail Access, FICA (Finance and Contract Accounting), and Billing based on current and expected mandates.

Specific Retail Access including: RDE RA 01 Price to Compare on the Invoice; RDE RA02 Guarantee Savings for Mass Market Customers; RDE RA 03 Systems Functions not working properly for Regulatory required. RDE RA 04 DER (Distributed Energy Resource) Block Added to CRMB – add functionality.

Specific FICA including: RDE FICA 01 Host Community Benefit Program Renewable Energy Facility Host Community Benefit Program Manual Solution (Dev Pos Docs).

Specific Billing including: RDE BILL 01-1 Potential future enhancements to the Standby Rates that are currently on a 2024 delivery schedule; RDE BILL 02-1 Optional Demand Rates enhancements; RDE BILL 03-1 VDER price keys for NYSEG MHP (potential impact w/CDG); RDE BILL 04-1 Customer Benefit Contribution Automation (CBC); RDE BILL 05-1 Commercial Electric Vehicle (EV) Charging Station - New Rate & Surcharge; RDE BILL 06-1 Agile solution for New Surcharges; RDE BILL 07-1 EV programs - Installation operand identifiers; RDE BILL 11-1 RGE 100 Generic Operands (Lighting); RDE BILL 12-1 Billing Natural Gas Service to Electric Generators (PSC 88 SC15).

The forecasted estimates are based on the expected development required along with historical hours/costs of similar complexity for system changes. Assumptions are \$77 per hour for internal labor costs, \$38 per hour for IT external labor costs, and \$165 per hour for business contractor costs.

#### Project Benefits:

Regulatory and Rate Case compliance requirement.

Specific Orders that apply to 2025 scope:

98-M-1343  
14-M-0224  
15-M-0180  
17-G-0011  
19-M-0463  
20-E-0249  
20-E-0376  
22-M-0429

Avoid administrative and financial penalties.

Avoid negative public and legislative perception of NYSEG not meeting requirements.

#### Project Risks and Mitigation Plan:

Potential Staffing Resource Concerns: Several initiatives, such as Community Distributed Generation Phase II, Statewide Solar For All, REACH (Renewable Energy Access and Community Help), EV Rate for Commercial Charging Stations, share resources across multiple business areas as well as the same customer service systems. External staffing to offset resource constraints may mitigate some risk.

As the Regulatory Driven Efforts program covers multiple regulatory items, new orders may be issued which impact the feasibility of some items or the prioritization of planned work. Program will monitor with Rates and Regulatory, Business, and PSC as new orders are issued which may impact the program scope.

Risks of no action includes impacts to customer service metrics related to customer satisfaction, billing accuracy, and employee productivity if delay in implementation results in manual effort. For some items, risk may include noncompliance with regulatory orders.

For risks associated with inability to deliver automated solution, program and business will consider feasibility for manual solution in interim where applicable.

The cost estimates include internal labor and external resources such as SWF (Software Factory). These estimates are derived from multiple sources, including historical man-hour data, as well as cost estimates from similar projects within NYSEG and RG&E. Estimates are reviewed and updated as needed.

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023         | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|--------------|---------------|--|--|
| # AFUDC                | \$ 23         | \$ -        | \$ -        | \$ -        | \$ 2         | \$ 22         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # External Services    | \$ 815        | \$ -        | \$ -        | \$ -        | \$ 78        | \$ 737        |  |  |
| # Internal - Non-AC    | \$ 46         | \$ -        | \$ -        | \$ -        | \$ -         | \$ 46         |  |  |
| # Internal, Labor      | \$ 25         | \$ -        | \$ -        | \$ -        | \$ 1         | \$ 25         |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -         | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 909</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 80</b> | <b>\$ 829</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 519           | \$ 220          | \$ 63           | \$ 63           | \$ 42           | \$ 43           | \$ 44           | \$ 46           |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 6,975         | \$ 3,383        | \$ 750          | \$ 750          | \$ 500          | \$ 515          | \$ 530          | \$ 546          |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 6,049         | \$ 2,458        | \$ 750          | \$ 750          | \$ 500          | \$ 515          | \$ 530          | \$ 546          |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 13,544</b> | <b>\$ 6,060</b> | <b>\$ 1,563</b> | <b>\$ 1,563</b> | <b>\$ 1,042</b> | <b>\$ 1,073</b> | <b>\$ 1,105</b> | <b>\$ 1,138</b> |

[illegible]



## IDP MFA Solution Implementation

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                    |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005001              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Dec-2024             | <b>In-Service Date:</b><br>H1 2026 |

#### Project description:

Implement new IDP (Identity Provider) solution for the customer Web and Mobile App login authentication process which would be highly scalable and reliable to support peak customer demand during storm events. MFA (Multifactor Authentication) is an advanced authentication technique that requires two or more methods of authentication, allowing customers to login more securely. MFA adds extra layers of security to customer accounts. The numerous security measures make sure that only authorized users/customers can access their information and ensure that regulatory compliance requirements are met.

Explore Customer Identity and Access Management (CIAM) solution for the AVANGRID customer Digital Platforms. The CIAM solution is used to authenticate and manage customers authentication process which support Multi-Factor Authentication and the mandatory business requirements. Exploration will occur in 2024 with implementation planned shortly after. The primary goals being:

Fantastic Security Reputation

Protects the Customer Experience

Protects customers data from attacks

Does Not Drive Additional Calls to Customer Support Call Centers

#### Project Scope:

Implement IDP (Identity Provider) and MFA (Multi Factor Authentication) for the login authentication process to customer websites and mobile apps. The CIAM (Customer Identity and Access Management) solution is used to authenticate and manage customers authentication process which support Multi-Factor Authentication and the mandatory business requirements:

Multi-Platform Support (Web, iOS, and Android)

OpenID Connect (OIDC)

SAML 2.0

Multi-Factor Authentication (MFA)

Excellent Security Reputation

Excellent Customer Experience

Passwordless (Biometrics)

#### Project Benefits:

The current Liferay IDP is not a large scale Customer Identity and Access Management (CIAM) product and doesn't support Multi-Factor Authentication (MFA) which is mandatory requirement from Corporate Security. Improved customer experience, protects customer data and identity, and protects Avangrid's brand reputation. Risks if not implemented are a potential compromise of customer data and identity which may lead to regulatory/legal penalties and damage Avangrid brand reputation.

#### Project Risks and Mitigation Plan:

Before fully rolling out an Identity and Access Management (IAM) implementation, a pilot phase can be crucial. It allows for testing the IAM solution in a controlled environment, identifying any potential issues, and addressing them before a wider deployment. This phase can help ensure that the IAM system aligns with NYSEG business needs and security requirements. Best practices during this phase include establishing clear policies and processes, creating a centralized system for better visibility and management. The mitigation plan is to start with a clear strategy and adapt as we learn from the pilot phase. The project risks include integration with third party Vendors such as Uplight.

Compromise of customer data and identity may lead to regulatory/legal penalties and damage Avangrid brand reputation.

Offering Multi Factor Authentication(MFA) to our customers would be possible only through new enterprise Identity Access Management implementation, there is no alternative and not possible to implement MFA with current Identity provider.

Costs are based on estimated number of contracted and internal labor hours multiplied by assumed hourly rates. The hours are based on vendor estimates and on past efforts of similar scope and complexity where applicable. The costs of capitalized software licenses have been included as well.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## New IVR and Voice Solution

### PROJECT INFORMATION

|                                           |                                               |                                     |                                           |                                    |
|-------------------------------------------|-----------------------------------------------|-------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005012              | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Jul-2024            | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Implement new CCaaS (Contact Center as a Service) for all Avangrid OpCos to replace current Genesys IVR platform.

#### Project Scope:

Implement new CCaaS (Contact Center as a Service) platform, transitioning from the current Genesys platform to new Talkdesk platform. We will implement the solution in different phases, aligned to the substitution of the current CCaaS solutions (Proposed CCaaS solution – Talkdesk) in a roadmap to determine how they can map the existing features:

- Propose a unified design (IE: self-service options and prompts).
- Interactive Voice Response (IVR) capabilities including Avangrid standardized interactive voice response capabilities DTMF (Dual-Tone Multi-Frequency) and Direct Dialog Speech.
- Contact routing of multiple channels including voice and email and Outbound dialer.
- Support management, with administrative capabilities such as workforce management, call recording, quality monitoring, reporting, and dashboards.
- Computer Telephony Integration (CTI) with Utah, the current version release of Service Now.
- Computer Telephony integration with SAP (CRM7.0 and ECC 6.0 suite on HANA) and able to support future SAP S/4 HANA and CRM products such as SAP service cloud platform.
- Integrate the following processes: IVR, SAP, CRM, IVA, Mosaicx Virtual Hold.
- Project scope includes rolling out new functionality for Omni Channel, Chat channel, SMS, Virtual Assistant.
- Integration with Business Process Outsourcing (BPO).
- Middleware work (insert based on vendor).
- Provide features in a Roadmap of what is offered as requirements.
- All historical data would be retained from current platform in a readily searchable format.
- Migrate Avangrid phone numbers to the cloud provider that contains engineering, designs and cost related to:
  - Full Port
  - BYOC (Bring your own carrier)
  - Hybrid
- Procure required CCaaS licenses (DEV & PRD environments) including Text-to-speech (TTS) and Automatic Speech Recognition (ASR)
- Integrate VHT (Virtual Hold) cloud to new CCaaS platform
- Implement datalake for historical recording playback (Genesys, NICE)

#### Project Benefits:

Current Genesys IVR platform is reaching end of life by July 2025. Future IVR platforms are SaaS-based platforms.

Unified call flow, better customer experience and cost-effectiveness through improved self-service, right channeling contacts and enhancing agent efficiency. Improved Reliability and stability.

Consequences if we don't do it - Current platform won't be supported beyond 2025. This puts contact centers at risk to take customer calls which directly impacts customer experience, service levels and risk of incurring penalties.

#### Project Risks and Mitigation Plan:

Delays in the procurement process is the biggest risk. To mitigate we are collaborating closely with Procurement and working diligently to complete procurement requirements and on-board the vendor.

Major risk to the IVR system to serve NYSEG customers as the current Genesys Platform end of life is July 2025.

There are no alternatives as the current IVR/Telephony platform is reaching end of support by Q2 2025.

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates to implement the new platform as well as the cost of software licenses.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |

## S/4 HANA Implementation

### PROJECT INFORMATION

|                                           |                                               |                                        |                                           |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005137              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Avangrid's SAP HANA standard maintenance is reaching end of life at the end of 2027. Consolidate all operating companies into a single SAP S/4 HANA system with harmonized business processes to increase operational efficiency. Standardize its customer service processes across the Networks operating companies and modernize its local SAP footprint.

#### Objectives:

1. Transition the current SAP Customer Service modules to the S/4 HANA environment without disrupting ongoing customer service operations.
2. Implement new functionalities available in S/4 HANA to optimize customer service processes.
3. Enhance user experience and interface for customer service representatives.
4. Ensure data integrity and seamless migration of existing customer service data to the new platform.
5. Provide comprehensive training to the customer service team on the new system functionalities and features.

#### Project Scope:

1. Assessment and Planning:
  - Conduct a detailed assessment of the current SAP CS landscape to identify customizations, integrations, and data structures.
  - Develop a migration strategy that minimizes downtime and ensures data integrity.
2. System Upgrade and Configuration:
  - Upgrade the SAP environment to S/4 HANA, focusing on the CS modules such as Service Orders, Service Contracts, Complaints and Returns Management, and Installed Base Management.
  - Configure the new functionalities and enhancements specific to S/4 HANA, aligning with best practices for customer service.
3. Data Migration:
  - Migrate all relevant data from the existing system to the S/4 HANA platform, ensuring data accuracy and completeness.
  - Perform data cleansing and deduplication to improve data quality in the new system.
4. Integration:
  - Ensure seamless integration of the S/4 HANA CS modules with other modules (e.g., Sales and Distribution, Material Management) and external systems (e.g., CRM platforms, billing systems).
  - Configure and test APIs and middleware for real-time data exchange.
5. User Experience Enhancement:
  - Implement SAP Fiori apps for customer service functions to provide an intuitive and responsive user interface.
  - Customize Fiori apps as per business requirements to improve efficiency and user satisfaction.
6. Testing:
  - Conduct comprehensive testing, including unit testing, integration testing, and user acceptance testing (UAT), to ensure the system's functionality and performance meet the business requirements.
7. Training and Change Management:
  - Develop and execute a training program for customer service representatives and managers on the new S/4 HANA functionalities.
  - Implement change management strategies to facilitate a smooth transition to the new system.
8. Post-Implementation Support:
  - Provide post-implementation support to address any issues and ensure system stability.

**Project Benefits:**

Avangrid's SAP standard maintenance is reaching end of life in 2027 and the software version will be unsupported by SAP. So, it is essential to assess customer billing instances and standardize customer service processes across the networks operating companies by modernizing the business solutions.

Business benefits : OPEX Cost Savings: OPEX efficiencies can be achieved by a streamlined and harmonized process by moving from three versions to one version across OpCos. Business Process Optimization: Streamlined and harmonized process for moves, address validation, AMI for meter reading process, and dunning across operating companies will help reduce customization and code debt through elimination of obsolete and redundant codebase.

- Process unification across Avangrid OpCos
- 15-50% reduction in AHT (Average call Handle Time)
- 10-20% Improvement in call center productivity
- Improved Customer Experience
- 20-50% Improvement in self-service adoption
- Faster implementation of new programs/rates

**Project Risks and Mitigation Plan:**

Resource constraints is the biggest risk. We will mitigate by prioritizing work and leveraging internal/external resources appropriately.

**Risk of No Action:**

SAP announced End of Life (EOL) of current platform at the end of 2027. That means SAP will not provide new enhancements or fixes to the standard core product beyond 2027. This introduces serious risk to our business operations.

**Project Alternatives:**

None. SAP announced the end of support of the current platform by 2027 with a possible extension until 2030. The current system needs to be upgraded to S4 HANA.

**Basis for Project Estimates**

Project estimates were calculated from expected number of contracted and internal labor hours multiplied by an assumed hourly rate. Costs also include software licensing and cloud infrastructure.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ 0        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ 2        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 2</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

[illegible]

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2025            | 2026             | 2027             | 2028             | 2029             | 2030        | 2031        |
|------------------------|-------------------|-----------------|------------------|------------------|------------------|------------------|-------------|-------------|
| # AFUDC                | \$ 12,797         | \$ 105          | \$ 1,053         | \$ 2,540         | \$ 4,003         | \$ 5,096         | \$ -        | \$ -        |
| # CIAC                 | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # External Services    | \$ 90,250         | \$ 4,439        | \$ 20,985        | \$ 24,049        | \$ 22,747        | \$ 18,030        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # Internal, Labor      | \$ 16,861         | \$ 1,701        | \$ 3,821         | \$ 3,780         | \$ 3,780         | \$ 3,780         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # Materials            | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # Overheads - External | \$ -              | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 119,909</b> | <b>\$ 6,244</b> | <b>\$ 25,859</b> | <b>\$ 30,369</b> | <b>\$ 30,531</b> | <b>\$ 26,906</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## CRM Front Office Improvements - NY

### PROJECT INFORMATION

|                                           |                                               |                                                |                                                 |                                    |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005613              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Sep-2024                  | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Address upgrades to customer services processes and SAP/CRM which will improve the customer service representative experience navigating and using the CRM system and lead to decreased call handling time, decreased NY PSC complaints, and increase customer satisfaction. Implement billing system functionality to create and manage Non-ACE (Accelerated Exceptions) Billing improvements and additional BPEM (Business Process Exception Management) cases as well as automation of tasks with the goal of improving the overall BPEM capabilities to support the business.

#### Project Scope:

Scope includes various SAP/CRM improvements including:

- CRM Latency Issues - Stuck Loading Screen
- Link Op-Co Identified at start of forwarding a contact to the referral at the end
- Change Verbiage to Opt-Out Indicator on Installation Line
- Added functionality - Account Overview - show active or inactive accounts.
- Refresh capability
- Billing Correction Workbench - Mass Billing Corrections
- Clean up of SSN/TIN on BP Org
- Auto confirm premise even if the BP has moved out and not linked to any other active account
- CRM Dashboard
- Installment Plan Creation - Installment Plan Exists message when previous plans stuck in "Cleared"
- BP # disappearing from Display Contact w/ text after backing out of selected Contact
- Automate business calculator tools in CRM
- NY CRM Dashboard

Scope also includes various Non-Ace & BPEM improvements including:

- Custom Outsourt Check Group
- Refinement of invoice outsourt criteria
- Dedicated blocks by process
- Tool for Un-Billed and Un-Invoiced Accounts
- Meter Read Implausibles - Automation of case resolution
- Leveraging ISU (Industry Solution Utilities) Assess Workflow
- Open MR (Meter Reading) Order – Open MR Orders for registers missing rate type
- Open MR Orders for non-relevant for billing registers
- Create Collective Billing Dashboard
- PWB (Print Work Bench) Enhancement
- Data File Format Validation (User Training)
- Meter Installation (User Training)
- Collective Invoice reversal
- Prevent I025 creation for CDG (Community Distributed Generation)/Value Stack Accounts
- Auto Closure to automate resolution of Z201 Exception
- EV (Electric Vehicle) Programs - Installation Operand Identifiers
- Agile solution for new surcharges
- Customer Benefit Contribution (CBC) Automation
- Combine NYSEG Gas Delivery Prices
- NYSEG Gas SC 16 delivery price keys Tier 1, 2, 3
- Settlement Changes (Not Applicable until next Rate Case)
- Auto Closure
- New BPEM Cases - Billing Exceptions
- New BPEM Cases - Retail Exceptions
- Clean up Sweeper case categories
- Enhance EMMACLS (Prior Exception Management)
- Additional secondary objects
- Convert FICA (Financial Accounts & Recievables) outlook inboxes requests to be managed via BPEM cases
- BPEM Operational ReportVarious SAP/CRM improvements listed below. Refer to Requirements tab and see embedded Work Document for additional information.



These are known issues and possible opportunities for improvement that can directly impact representative interactions with customers and applicants, including average handle time and call quality. Improvements impacting the customer experience can potentially reduce Negative Revenue Adjustments (NRA's) such as:

Failure to implement this functionality will continue to increase the backlog for back office billing exceptions leading to delays in sending out bills to the customers. Failure to implement BPEM to other areas will result in retail and FICA back office billing teams to continue to work on exceptions from different sources overall resulting in longer resolution time of exception.

Risk with staffing, as multiple shared resources are assigned to additional initiatives. Additional risk with system landscape, such as system downtime. Will coordinate with IT and applicable business areas to plan accordingly.

Continued inefficiencies in various customer service processes, which can impact average handle time, call quality, as well as back office billing processes which can contribute to customer service NRA's (Negative Revenue Adjustments) and negative customer experience.

These enhancements are intended to gain efficiencies in current customer service processes. If project cannot be delivered, alternative is continued reliance on manual efforts.

The cost estimates include internal labor and external resources such as SWF (Software Factory). These estimates are derived from multiple sources, including historical man-hour data, as well as cost estimates from similar projects within NYSEG and RG&E. Estimates are reviewed and updated as needed.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## High Bill High Usage Customer Experience Redesign

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                    |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-006147              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>H1 2025              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Reimagining and redesigning the customer billing and usage experience to help customers avoid, understand and manage high bills.

#### Project Scope:

We will be conducting multiple phases of research, including qualitative interviews with customers and SMEs, and a survey across all OpCos. From this we will be identifying service design opportunities across all touchpoints of the journey and aligning with OpCos for which to further test and bring into productions. These touchpoints include: proactive management, early detection and exploration, support and guidance, resolution and empowerment, and continuous improvement and trust building. We will then implement the redesigned journey by implementing new software solution(s) and/or significantly enhancing existing software with new functionality.

#### Project Benefits:

The goals of this work are to fundamentally reduce the number of customer calls regarding high bills, improve overall CSAT (customer satisfaction), reduce debt profile through improved payment methods and increase program outreach. Additionally, through this work we are actively working to address key JD Power metrics.

#### Project Risks and Mitigation Plan:

Energy consumption and bill understanding can be a complex subject for customers of all demographics to understand. There is a risk that any information or advice provided will hinder understanding or be delivered at the wrong time to be useful or actionable.

We are conducting significant qualitative and quantitative customer research to ensure that the new journeys and tools built by this project will answer the needs of all our customer demographics. We will also be conducting extensive testing and managing roll-outs closely to react to customer responses and make changes accordingly.

#### Risk of No Action:

Making no changes to the customer billing and consumption experience leaves customers at risk of not understanding their own usage habits and unable to effectively manage their energy bills.

#### Project Alternatives:

Make no changes to the existing billing and usage tools available to our customers.

#### Basis for Project Estimates

Previous customer experience redesign projects, utilizing a similar research and implementation methodology.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,281        | \$ 1,258        | \$ 1,023        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,281</b> | <b>\$ 1,258</b> | <b>\$ 1,023</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Customer Journey Improvements

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                        |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005145              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The high level objectives of this program are to provide our customers with an improved customer experience and to increase contact satisfaction. We will also increase digital engagement which typically has a higher CSAT (Customer Satisfaction) than traditional contact methods; this will also have an impact on cost to serve by reducing the need for customers to use more expensive contact methods. These improvements will include several digital and operational improvements as well as focusing on operational efficiencies including automation of non-value add tasks. There will also be several ongoing new initiatives to support our employees and customers.

The Customer Experience Enhancements Program is rooted in an iterative process called Design Thinking. Design Thinking is used by some of the world's largest brands, including Bank of America, TMobile, Airbnb, and Apple. Through this process, each OpCo will go through five phases per experience to understand the end user and identify solutions that will result in new end-to-end experience maps and customer-tested prototypes for IT production and implementation.

#### Project Scope:

The program features to be delivered in 2025 (Wave 2) will further progress how customers interact with the company's most critical touchpoints by continuing to leverage residential satisfaction studies and the Voice of the Customer (VOC) programs.

Those feature enhancements will include:

1. Customer Interaction Enhancements (ex: customer requests, alerts/digital communications, and regulatory-based web requests, etc).
2. Service Management Enhancements (ex: outage, move-in/move-out/transfer of service, new connections etc.).
3. Billing and Payments Enhancements (ex: payments experience, debt collection, end-to-end meter-to-billing journey redesign. etc.)
4. Digital Platform Enhancements (ex: digital enablement for MyAccount and eBill. etc.)

#### Project Benefits:

Increase Contact satisfaction - Customers engaged in digital platforms have a higher customer satisfaction rate. Our ability to drive customers to our digital platforms will help reduce call volumes, allowing representatives to focus on more complex calls.

#### Project Risks and Mitigation Plan:

Projects were committed to in previous rate cases, so delays could result in fines, penalties and reputation damage. Mitigation plans are to ensure collaborative portfolio management

#### Risk of No Action:

Companies must continually enhance their customer journeys, and reduce their cost to serve, to meet with evolving customer expectations. With technological advancements and the proliferation of digital platforms, customers are used to seamless, personalized experiences across all touchpoints, and if NYSEG does not provide that customer satisfaction will fall.

#### Project Alternatives:

Alternatives to enhancements would be the status quo of each of these journeys, leading to outcomes in the "risk of no action" area

#### Basis for Project Estimates

Costs are based on estimated number of contracted and internal labor hours multiplied by assumed hourly rates. The hours are based on vendor estimates and on past efforts of similar scope and complexity where applicable.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 118           | \$ -            | \$ 118          |                 | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 19,473        | \$ 4,493        | \$ 3,050        | \$ 2,116        | \$ 2,243        | \$ 2,378        | \$ 2,521        | \$ 2,672        |
| # Internal - Non-AC    | \$ 2,059         | \$ 484          | \$ 250          | \$ 235          | \$ 249          | \$ 264          | \$ 280          | \$ 297          |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 21,650</b> | <b>\$ 4,977</b> | <b>\$ 3,418</b> | <b>\$ 2,351</b> | <b>\$ 2,492</b> | <b>\$ 2,642</b> | <b>\$ 2,801</b> | <b>\$ 2,969</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG CapEx Software Subscriptions

### PROJECT INFORMATION

|                                           |                                               |                                                |                                           |                                        |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005312              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

NYSEG is allowed to capitalize the cost of software cloud-based subscriptions when the following thresholds and conditions for capitalization are met:

- The total subscription cost (shared with RGE) is at least \$500,000.
- NYSEG/Avangrid has the contractual right to take possession of the software at any time during the hosting period without significant penalty.
- It is feasible for NYSEG/Avangrid to either run the software on its own hardware or contract with another party unrelated to the vendor to host the software.

This program is required to collect budget and costs associated with Customer Service area software cloud subscriptions; they are managed in the SAP-RE (real estate) module.

#### Project Scope:

In 2025 the following software cloud subscriptions will be paid:

- Uplight/Energy Manager \$610,685 (allows customers to track and understand their energy usage)
- Precisely \$81,600 (provides address validation platform to validate customer addresses with SAP)

#### Project Benefits:

Capitalizing eligible software cloud subscriptions results in a reduction to OpEx/operating costs. If software cloud subscriptions are not capitalized when they could be, then these costs would need to hit OpEx.

#### Project Risks and Mitigation Plan:

If IFRS Accounting guidelines change again that could impact which of our cloud-based SaaS subscriptions may or may not be capitalized. Also if the actual costs differ from what is expected that could put certain subscriptions above or below the dollar threshold for capitalization. Furthermore, if actual contract terms differ from what is expected in regards to whether NYSEG/Avangrid has the contractual right to take possession of the software at any time during the hosting period without significant penalty and whether it is feasible for NYSEG/Avangrid to either run the software on its own hardware or contract with another party unrelated to the vendor to host the software that could also affect which subscriptions may or may not be capitalized. This will be mitigated by working closely with vendors and with our Accounting team to ensure that capitalization rules are followed.

#### Risk of No Action:

Not subscribing to these SaaS platforms would cause significant risk to customer service processes. Not subscribing to Uplight Energy Manager would not allow us to provide the Energy Manager service to customers which we have committed to regulators.

#### Project Alternatives:

The alternative would be to charge these subscriptions to OpEx which would require additional OpEx funding and not take advantage of an opportunity to capitalize eligible costs.

Software cost estimates are based on the latest contract negotiations we have with Uplight and Precisely.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Customer Service Generative AI

### PROJECT INFORMATION

|                                           |                                               |                                        |                                            |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005505              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The **Customer AI Assistant** will be a customer-facing chatbot powered by generative AI. This chatbot will provide customers with personalized answers to their questions, including both general inquiries and account-specific information. The generative AI will enable the chatbot to handle more complex questions, such as "Why is my bill so high?" by integrating with other data sources, analyzing the information, and providing specific responses to customers. Both tools will improve general information delivery by providing documents and guides that, using generative AI, can respond to customer queries if there is no specific flow for that topic. This assistant aims to improve the customer experience, reduce the workload for human agents, and increase customer engagement and satisfaction.

The **Agent AI Assistant** will be a chat interface designed to provide both general information and customer-specific details by integrating with SAP data. This real-time chat will automatically summarize relevant account information, such as interaction history, payments, and billing details, during each customer call. The AI will check previous interactions to provide context to the Customer Service Representatives (CSRs). Additionally, it will offer general information related to the programs offered, how to enroll online, and other relevant details. This solution aims to enhance efficiency and accuracy in handling customer queries, improve customer satisfaction through personalized service, and reduce training time for new CSRs.

#### Project Scope:

Implement new generative AI software creating agent assistants that will streamline common customer service interactions. Utilizing the power of Generative AI to better assist both customers and contact center representatives creates efficiency, accuracy, and increases contact satisfaction. The customer-facing chatbot, known as the Customer AI Assistant, will provide customers with answers to general inquiries and account-specific questions, reducing the need for customers to call. This chatbot will integrate with various data sources, analyze information, and provide specific responses to customers, even for complex questions. Similarly, the Agent AI Assistant will offer real-time summaries of relevant account information and general details about programs and enrollment, enhancing the efficiency and accuracy of Customer Service Representatives (CSRs).

Annual software upgrades and enhancements will keep the AI agents up to date and maximize effectiveness for customers and customer service representatives. This continuous improvement ensures that both the Customer AI Assistant and the Agent AI Assistant remain effective tools for improving customer experience and operational efficiency.

#### Project Benefits:

Increase CSAT (customer satisfaction)  
Decrease calls  
Decrease call handle times

#### Project Risks and Mitigation Plan:

One key risk is the challenge of integrating the AI assistants with existing SAP systems, which could cause delays and increased costs. To mitigate this, we will conduct compatibility assessments and involve integration specialists from the start, using a phased approach for testing. Data privacy and security are also major concerns, as breaches could lead to legal issues and loss of trust. We will implement strong encryption, regular security audits, and comply with data protection regulations. A rapid response team will be ready to address any breaches. The accuracy of AI models is another risk, as inaccurate responses could lead to customer dissatisfaction. We will regularly update and monitor the AI models, and use a human-in-the-loop system for complex queries. User adoption may be a challenge, with potential resistance from CSRs and customers. To address this, we will provide comprehensive training and user-friendly interfaces, and engage users early for feedback.



**Risk of No Action:**

If the project is not undertaken, several significant consequences could arise. Firstly, the efficiency and accuracy of handling customer inquiries will remain suboptimal, leading to prolonged resolution times and increased customer dissatisfaction. This could result in higher call volumes and operational costs, as more human agents will be needed to manage the workload.

Financially, the organization may face increased costs due to inefficiencies and the need for additional staffing. Moreover, the lack of AI-driven insights could lead to missed opportunities for cost savings and revenue generation. Delays in adopting AI technology could also result in falling behind competitors who leverage AI to enhance their customer service.

Stakeholders, including customers, shareholders, and local communities, would be negatively impacted. Customers may experience frustration due to slower and less accurate service, leading to a decline in customer loyalty and satisfaction. Shareholders might see reduced returns on investment due to increased operational costs and missed growth opportunities. Local communities could be affected by the organization's reduced competitiveness and potential downsizing.

**Project Alternatives:**

1. Traditional Chatbots: One alternative was to implement traditional rule-based chatbots. These chatbots are less complex and cheaper to develop. However, they lack the ability to handle complex queries and provide personalized responses, which limits their effectiveness in enhancing customer satisfaction and operational efficiency.

2. Manual Process Enhancements: Another option was to enhance the existing manual processes by providing additional training to Customer Service Representatives (CSRs) and improving the current CRM tools. While this could improve efficiency to some extent, it would not leverage the full potential of AI to provide real-time insights and personalized service.

3. Outsourcing Customer Service: Outsourcing customer service to a third-party provider was also considered. This option could potentially reduce costs in the short term. However, it could lead to a loss of control over the quality of customer interactions and may not align with the company's long-term strategic goals.

Preferred Solution: The preferred solution is to implement the Customer AI Assistant and Agent AI Assistant powered by generative AI. This approach was selected because it offers the most comprehensive benefits. It provides personalized, accurate, and efficient responses to customer inquiries, reduces the workload for human agents, and enhances overall customer satisfaction. Additionally, it ensures the organization remains competitive by leveraging advanced AI technology to improve operational efficiency and customer experience.

**Basis for Project Estimates**

Costs estimates would be based on the number of hours needed to develop each of the features, integrate with SAP, build any new service if needed, etc.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,393        | \$ 686        | \$ 707        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 343          | \$ 169        | \$ 174        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,736</b> | <b>\$ 855</b> | <b>\$ 881</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## eQuality Management System (QMS)

### PROJECT INFORMATION

|                                           |                                               |                                        |                                           |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005540              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Implementation of powerful technology to model in a collaborative environment and easily validates the work with process owners.  
Map processes graphically in the easily understood Business Process Modeling Notation (BPMN).  
Assign Responsibility, accountability and ownership at all levels (RACI).  
Comprehensively document end to end processes, capturing critical hand-offs between business.  
Easily manage the entire lifecycle of a process from documentation, review and approval to communication of change and ongoing feedback.  
View process related documents, resources and assets and all process touch points.  
Maintain transparency for compliance and governance within a complex regulatory environment.

#### Project Scope:

Select an eQMS platform that aligns with organization's quality objectives, regulatory requirements, and existing IT infrastructure.

- Configure and customize the eQMS to fit specific process requirements and workflows.
- Ensure seamless integration with existing systems and data migration.
- To develop a comprehensive electronic outline for each process, identifying opportunities for optimization and automation.
- Digitalize processes to streamline operations, increase productivity and continuously improve.
- Support of complex improvement, compliance and transformation initiatives.

#### Project Benefits:

Increase the quality and availability of Customer Service processes in order to mitigate risk related with penalties. Increase customer satisfaction to improve the reputation for the company.

Fees in NY are rising and a system to determine the fees is required to be transparent. Correcting the fee issues for NY will help in implementing the other OpCos to implement the process to provide quality management of all processes and systems integrated.  
Need validations in place for incorrect meter readings or incorrect bills from reaching the customers.

Risks if not implemented: higher fines and regulatory fees.

#### Project Risks and Mitigation Plan:

Exclusion from future implementations: If the OpCo does not implement a quality system, it could be excluded from future implementations in other OpCos. This can result in:

Competitive disadvantage: Other OpCos that implement the quality system may offer better service, and leaving the OpCo behind.

Loss of synergies: Not participating in the implementation can lead to a lack of alignment and collaboration with other OpCos, missing opportunities to share best practices and resources.

Operational isolation: The OpCo could become isolated in terms of processes and standards, making global integration and operational efficiency more difficult

Financial impact: Exclusion from future implementations can have a significant financial impact, as the OpCo might lose investments and financial support aimed at quality improvements.

This mitigation plan should help address the potential risks associated with not having a formal quality system in place for customer service processes. Implementing these strategies can minimize the impact of these risks. The estimated cost is aprox. 30% of the overall project.

- Provide customer service employees with training on best practices and consistency in communication to reduce errors.
- Develop a communication strategy to manage customer expectations and communicate how the company is addressing service issues.
- Prepare a crisis management plan to handle potential PR issues swiftly and effectively.
- Actively monitor social media channels for negative feedback and address concerns publicly to show commitment to quality.
- Document existing processes and identify key areas where errors frequently occur, focusing on reducing inefficiencies.
- Conduct regular cost analysis to identify the financial impact of errors and rework, allowing for targeted improvements.
- Consider implementing automation tools in high-error areas to reduce manual mistakes and increase efficiency.
- Develop and distribute clear, easy-to-follow guidelines and procedures for customer service tasks to reduce confusion.
- Involve employees in process improvement discussions to gain their insights and increase their sense of ownership.
- Offer continuous training and development opportunities to keep employees informed and skilled in handling tasks efficiently.
- Test small-scale quality initiatives to gather data on customer response before rolling out larger implementations.
- Conduct regular internal audits of customer service processes to identify areas of non-compliance and take corrective action.

### Risks of not implementing a quality system in customer service processes:

- Customer dissatisfaction: Without a quality system, inconsistencies and errors can occur, leading to unhappy customers.
- Loss of reputation: Poor service quality can damage company reputation.
- Increased costs: Mistakes and inefficiencies can lead to higher operational costs due to the need for rework and handling complaints.
- Employee frustration: Lack of clear processes and standards can result in confusion and frustration among employees, affecting their performance and morale.
- Missed opportunities: Without a quality system, we may miss out on valuable feedback and insights that could help improve our services and customer satisfaction.
- Regulatory non-compliance: Failing to meet quality standards can result in legal issues and fines.

None - the alternative would be to not implement the quality system and to maintain the status quo.

Project estimates were calculated from expected external and internal labor hours multiplied by an assumed hourly rate. Costs also include software licensing.

Materials - The estimation cost for software is not based only in the number of licenses but in the amount of data to be used for data mining. Moreover, there are different type of licenses according to the role of the user. The range of the cost by user and type of license is \$500-\$7500 for a total of 250 users in NY.(average of \$1,431 per license).

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 60           | \$ 45         | \$ 15         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 728          | \$ 546        | \$ 182        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 11           | \$ 8          | \$ 3          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 474          | \$ 237        | \$ 237        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,273</b> | <b>\$ 836</b> | <b>\$ 437</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Mobile App Redesign

### PROJECT INFORMATION

|                                           |                                               |                                        |                                            |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-006154              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025              | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

The mobile application redesign initiative aims to enhance the user experience for customers of our large electric utility. This project will be executed by our digital customer experience team, leveraging design thinking methodologies to ensure a customer-centric approach. The redesign will focus on improving usability, accessibility, and overall satisfaction, aligning with our commitment to delivering exceptional digital services.

#### Project Scope:

The scope of the project includes a comprehensive overhaul of the mobile application's user interface (UI) and user experience (UX). Key activities will involve user research, prototyping, usability testing, and iterative design improvements. The project will also integrate new features such as real-time outage notifications, personalized energy usage insights, and seamless bill payment options, ensuring the app meets the evolving needs of our customers. To execute this, we will implement new software solution(s) and/or significantly enhance existing software with these new functionalities.

#### Project Benefits:

The redesigned mobile application will provide significant benefits, including increased customer engagement and satisfaction through a more intuitive and user-friendly interface. Enhanced features will empower customers with better control and understanding of their energy usage, leading to potential customer cost savings. Additionally, the improved app will streamline customer interactions, reducing the need for support calls and increasing operational efficiency for the utility.

#### Project Risks and Mitigation Plan:

Risk - The development of enhancements require complex development, leading to potential delays.

Mitigation - We will conduct phased development with early testing and prototyping.

Risk - Unexpected development costs, third-party service fees, or UI/UX iterations could increase expenses.

Mitigation - We will implement cost controls .

Risk - Customers can find the new interface / features confusing, resulting in declined engagement.

Mitigation - We will conduct user testing and gather feedback before full deployment.

#### Risk of No Action:

Without a modern UI/UX and featureset, users may be left without an optimal digital experience. This will lead to increased customer support calls due to unclear billing and lack of self-service options. Delays in outage notifications could impact public safety. We will fail to improve customer satisfaction and still be bottom of the JD Power ranking for utility companies.

#### Project Alternatives:

Remaining with our current App's featureset & UI/UX provides our customers with an outdated experience. Doing minimal updates to the existing app would not address the major pain points and would have limited impact on engagement.

#### Basis for Project Estimates

Costs are based on estimated number of contracted and internal labor hours multiplied by assumed hourly rates. The hours are based on vendor estimates and on past efforts of similar scope and complexity where applicable.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,110        | \$ -        | \$ 1,110        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,110</b> | <b>\$ -</b> | <b>\$ 1,110</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## IVR System Upgrades and Enhancements Program

### PROJECT INFORMATION

|                                           |                                               |                                        |                                           |                                        |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-006451              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program covers annual upgrades and enhancements necessary for the IVR (Interactive Voice Response) CCaaS (Contact Center as a Service) platform that is used to serve customers who call the contact center. It will also cover the cost to purchase capitalized cloud software licenses that are necessary for internal customer service agents and outsourced agents to utilize the platform.

#### Project Scope:

This program will cover annual software upgrades and implementation of new functionality related to the company's IVR system that is used to serve customers. It will also provide the budget for the purchase of capitalized cloud software licenses for agents and vendors to utilize the platform.

#### Project Benefits:

Unified call flow, better customer experience and cost-effectiveness through improved self-service, right channeling contacts and enhancing agent efficiency. Improved reliability and stability.

#### Project Risks and Mitigation Plan:

Delays in the procurement process is the biggest risk. To mitigate we will collaborate closely with Procurement and work diligently to complete procurement requirements.

#### Risk of No Action:

Direct impact to contact center agents, resulting in KPIs and NRAs. Not capitalizing the software licenses would result in needing to use the operating expense budget to pay for the licenses which would be less favorable than capitalizing.

#### Project Alternatives:

No alternatives to system upgrades. The alternative to capitalizing the cost of the software licenses would be to expense them to the operating budget.

#### Basis for Project Estimates

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates based on similar historical efforts as well as the expected cost of software licenses.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|-----------------|-------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 6,722        | \$ -        | \$ -        | \$ 1,074        | \$ 1,568        | \$ 1,127        | \$ 1,160        | \$ 1,792        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 6,722</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,074</b> | <b>\$ 1,568</b> | <b>\$ 1,127</b> | <b>\$ 1,160</b> | <b>\$ 1,792</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Customer Service Analytics

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                        |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-005020              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This customer analytics program presents business insights that help Customer Service make data driven decisions to improve customer service levels and to improve operational efficiency. This program includes implementation of Customer 48 Hour Contact Rate, Energy Manager roll out containing usage data, Ebill, Energy Manager, MIMO (Move-In Move-Out) and New Connections reporting, customer count and digital metrics such as MyAccount, etc. Supporting the data needs for the customer journeys such as high bill high usage, meter to bill, etc. to reduce customer complaints, and increase customer engagement with digital channels. This program also helps to remove manual reporting tasks. The scope includes building data pipelines from various data sources like Web, Mobile App, AMI, and SAP into the backend Digital platform to support the development and adoption of new digital tools.

#### Project Scope:

2025 Scope:

- Build Power BI reports and address reporting needs for business users and product owners seeking help building semantic layer and data model for ad hoc reporting. This helps in understanding customers: Data 360 or Customer 360 is a single, shared one stop view of a customer's data and behavior.
- Support Call Reduction objective by providing data insights to reduce customer calls. B3Help support initiatives to provide personalized experiences: Using Customer 360 data to support Digital CX team to tailor marketing messages and product recommendations to individual customers that can enhance engagement with the digital tools such that they do not feel the need to call the contact center.
- Build and automate the data flow solution required to send the relevant data to Uplight to implement Energy Manager software for NYSEG.
- Essential data-feeds and performance reporting for all Customer Experience enhancements in 2025 including Moving Home, New Connections, Outage Management, and High Bill High Usage and Meter to Bill. Help support Customer Journeys: Provide insights for High Bill High Usage, Meter to Bill etc. by performing data analysis supporting the market research data that helps CX Digital team to identify opportunities and potential issues enabling proactive strategies based on evidence.
- Automate existing weekly KPI and operational reports. Improve Operational efficiency: Continue providing reports that present data to measure the performance of the digital tools and the customer journey.
- Develop an operational dashboard to show transactional volumes and error rates in one real time dashboard.

#### Project Benefits:

Understanding metrics such as the 48 Hour Contact Rate metric will help business understand if the digital channels deployed are effective or not to devise improvement measures to be taken to improve the rate. It will help identify customer pain points and make informed decisions on how to reduce Cost to Serve by increasing digital adoption. This in turn will also reduce operational costs by lowering repeat calls.

Enable customers with actionable insights from tracking their energy usage to optimize consumption and help customer service support to provide consistent communication on energy savings opportunities.

Automated reporting for the key customer journeys will remove the need for a large amount of manual work that is completed on a weekly basis, savings internal labor hours. Provide insight on where to put investments that will bring ROI.

Providing data insights for High Bill High Usage, Meter to Bill etc. by performing data analysis support the market research data that helps CX Digital team to identify opportunities and potential issues enabling proactive strategies based on evidence.

#### Project Risks and Mitigation Plan:

Data accuracy and integrity risk when many data sources are involved. To mitigate this risk, we implement data cleansing, profiling, validation rules, data analysis and use quality data to ensure data accuracy.

The impact of this program not being implemented presents a risk of lack of solutions for enhanced productivity, cost savings and employee value. Without analytics work the business audience will not be able to make focused strategic decisions.

Manual data reporting is costly and repetitive, making automation a more efficient option. Instead of in-house development, we considered ready-to-buy analytics products with maintenance and support, but the disadvantage is to put extra efforts to align the product to meet our company data needs which is a time-consuming task. Recommended to build in-house solution.

Costs are based on estimated number of contracted and internal labor hours multiplied by assumed hourly rates. The hours are based on vendor estimates and on past efforts of similar scope and complexity where applicable.

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ 0        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ 1        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 1</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ 108          | \$ 27         | \$ 27         | \$ 27         | \$ 27         | \$ -          | \$ -          | \$ -          |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 4,120        | \$ 468        | \$ 515        | \$ 566        | \$ 623        | \$ 630        | \$ 649        | \$ 669        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ 880          | \$ 220        | \$ 220        | \$ 220        | \$ 220        | \$ -          | \$ -          | \$ -          |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 5,108</b> | <b>\$ 715</b> | <b>\$ 762</b> | <b>\$ 813</b> | <b>\$ 870</b> | <b>\$ 630</b> | <b>\$ 649</b> | <b>\$ 669</b> |

[illegible]

## Customer Communications Platform RFP

### PROJECT INFORMATION

|                                                           |                                               |                                        |                                            |                                       |
|-----------------------------------------------------------|-----------------------------------------------|----------------------------------------|--------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>PRJ-005402              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Customer Service                 | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>12/30/2027           | <b>In-Service Date:</b><br>12/30/2027 |

**Project description:**

This project would cover the costs to replace our customer communications platform in the event that the RFP is awarded to a new vendor (currently Message Broadcast).

**Project Scope:**

Implement software platform for new customer communications (alerts) vendor.

Alerts include the following:

- Outage Alerts
- Meter Read Reminders
- Adhoc Alerts Platform

**Project Benefits:**

Exact benefits TBD - but if RFP is awarded to a new vendor it would be due to expected cost savings and/or service improvements.

**Project Risks and Mitigation Plan:**

Project Risks with Transition to New Vendor:

- Large amount of internal resources
- Loss of alert types
- Loss of customer communication settings (phone numbers, Opt outs, etc.)
- Loss of Short Codes that customers may recognize

Mitigation for Transition:

- Utilize the same processes and infrastructure as current vendor
- Ensure Communication preferences and Opt Out files are transitioned to new vendor
- Ensure New Short Code Customer Communications are included in transition
- Ensure all new alerts are vetted by legal for Telephone Consumer Protection Act requirements

**Risk of No Action:**

Risk of not going to RFP would result in working to extend our current contract with Message Broadcast. The current vendor may not offer newer innovations and potential cost savings.

**Project Alternatives:**

Build an alerts platform internally rather than use a vendor. This would result in high start-up costs and would require a large number of resources or look to extend the current contract with Message Broadcast.

**Basis for Project Estimates**

Estimated cost is based off the last Communications Platform RFP completed in 2023.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2026        | 2027            | 2028        | 2029        | 2030        |             |             |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| # External Services    | \$ 1,064        | \$ -        | \$ 1,064        | \$ -        | \$ -        | \$ -        |             |             |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |             |             |
| <b>Total</b>           | <b>\$ 1,064</b> | <b>\$ -</b> | <b>\$ 1,064</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |



# **RG&E Common Customer Service**

## RGE - Regulatory Driven Efforts / Rate Case

### PROJECT INFORMATION

|                                           |                                               |                                                |                                           |                                        |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-001515              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program covers SAP and other software system upgrades and enhancements that are required by New York regulatory mandates and rate case initiatives that will be funded by the business.

On an annual basis, there are anticipated regulatory requests which require business, internal IT, and external SWF resources to develop and implement the system changes necessary.

#### Project Scope:

Scope for 2025 includes regulatory & rate case initiatives in the areas of Retail Access, FICA (Finance and Contract Accounting), and Billing based on current and expected mandates.

Specific Retail Access including: RDE RA 01 Price to Compare on the Invoice; RDE RA02 Guarantee Savings for Mass Market Customers; RDE RA 03 Systems Functions not working properly for Regulatory required. RDE RA 04 DER (Distributed Energy Resource) Block Added to CRMB – add functionality.

Specific FICA including: RDE FICA 01 Host Community Benefit Program Renewable Energy Facility Host Community Benefit Program Manual Solution (Dev Pos Docs).

Specific Billing including: RDE BILL 01-1 Potential future enhancements to the Standby Rates that are currently on a 2024 delivery schedule; RDE BILL 02-1 Optional Demand Rates enhancements; RDE BILL 03-1 VDER price keys for NYSEG MHP (potential impact w/CDG); RDE BILL 04-1 Customer Benefit Contribution Automation (CBC); RDE BILL 05-1 Commercial Electric Vehicle (EV) Charging Station - New Rate & Surcharge; RDE BILL 06-1 Agile solution for New Surcharges; RDE BILL 07-1 EV programs - Installation operand identifiers; RDE BILL 11-1 RGE 100 Generic Operands (Lighting); RDE BILL 12-1 Billing Natural Gas Service to Electric Generators (PSC 88 SC15).

The forecasted estimates are based on the expected development required along with historical hours/costs of similar complexity for system changes. Assumptions are \$77 per hour for internal labor costs, \$38 per hour for IT external labor costs, and \$165 per hour for business contractor costs.

#### Project Benefits:

Regulatory and Rate Case compliance requirement.

Specific Orders that apply to 2025 scope:

98-M-1343  
14-M-0224  
15-M-0180  
17-G-0011  
19-M-0463  
20-E-0249  
20-E-0376  
22-M-0429

Avoid administrative and financial penalties.

Avoid negative public and legislative perception of RGE not meeting requirements.

#### Project Risks and Mitigation Plan:

Potential Staffing Resource Concerns: Several initiatives, such as Community Distributed Generation Phase II, Statewide Solar For All, REACH (Renewable Energy Access and Community Help), EV Rate for Commercial Charging Stations, share resources across multiple business areas as well as the same customer service systems. External staffing to offset resource constraints may mitigate some risk.

As the Regulatory Driven Efforts program covers multiple regulatory items, new orders may be issued which impact the feasibility of some items or the prioritization of planned work. Program will monitor with Rates and Regulatory, Business, and PSC as new orders are issued which may impact the program scope.

#### Risk of No Action:

Risks of no action includes impacts to customer service metrics related to customer satisfaction, billing accuracy, and employee productivity if delay in implementation results in manual effort. For some items, risk may include noncompliance with regulatory orders.

For risks associated with inability to deliver automated solution, program and business will consider feasibility for manual solution in interim where applicable.

The cost estimates include internal labor and external resources such as SWF (Software Factory). These estimates are derived from multiple sources, including historical man-hour data, as well as cost estimates from similar projects within NYSEG and RG&E. Estimates are reviewed and updated as needed.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## S/4 HANA Implementation

### PROJECT INFORMATION

|                                           |                                               |                                        |                                           |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005138              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

Avangrid's SAP HANA standard maintenance is reaching end of life at the end of 2027. Consolidate all operating companies into a single SAP S/4 HANA system with harmonized business processes to increase operational efficiency. Standardize its customer service processes across the Networks operating companies and modernize its local SAP footprint.

#### Objectives:

1. Transition the current SAP CS modules to the S/4 HANA environment without disrupting ongoing customer service operations.
2. Implement new functionalities available in S/4 HANA to optimize customer service processes.
3. Enhance user experience and interface for customer service representatives.
4. Ensure data integrity and seamless migration of existing customer service data to the new platform.
5. Provide comprehensive training to the customer service team on the new system functionalities and features.

#### Project Scope:

1. Assessment and Planning:
  - Conduct a detailed assessment of the current SAP CS landscape to identify customizations, integrations, and data structures.
  - Develop a migration strategy that minimizes downtime and ensures data integrity.
2. System Upgrade and Configuration:
  - Upgrade the SAP environment to S/4 HANA, focusing on the CS modules such as Service Orders, Service Contracts, Complaints and Returns Management, and Installed Base Management.
  - Configure the new functionalities and enhancements specific to S/4 HANA, aligning with best practices for customer service.
3. Data Migration:
  - Migrate all relevant data from the existing system to the S/4 HANA platform, ensuring data accuracy and completeness.
  - Perform data cleansing and deduplication to improve data quality in the new system.
4. Integration:
  - Ensure seamless integration of the S/4 HANA CS modules with other modules (e.g., Sales and Distribution, Material Management) and external systems (e.g., CRM platforms, billing systems).
  - Configure and test APIs and middleware for real-time data exchange.
5. User Experience Enhancement:
  - Implement SAP Fiori apps for customer service functions to provide an intuitive and responsive user interface.
  - Customize Fiori apps as per business requirements to improve efficiency and user satisfaction.
6. Testing:
  - Conduct comprehensive testing, including unit testing, integration testing, and user acceptance testing (UAT), to ensure the system's functionality and performance meet the business requirements.
7. Training and Change Management:
  - Develop and execute a training program for customer service representatives and managers on the new S/4 HANA functionalities.
  - Implement change management strategies to facilitate a smooth transition to the new system.
8. Post-Implementation Support:
  - Provide post-implementation support to address any issues and ensure system stability.

**Project Benefits:**

Avangrid's SAP standard maintenance is reaching end of life in 2027 and the software version will be unsupported by SAP. So, it is essential to assess customer billing instances and standardize customer service processes across the networks operating companies by modernizing the business solutions.

Business benefits : OPEX Cost Savings: OPEX efficiencies can be achieved by a streamlined and harmonized process by moving from three versions to one version across OpCos. Business Process Optimization: Streamlined and harmonized process for moves, address validation, AMI for meter reading process, and dunning across operating companies will help reduce customization and code debt through elimination of obsolete and redundant codebase.

- Process unification across Avangrid OpCos
- 15-50% reduction in AHT (Average call Handle Time)
- 10-20% Improvement in call center productivity
- Improved Customer Experience
- 20-50% Improvement in self-service adoption
- Faster implementation of new programs/rates

**Project Risks and Mitigation Plan:**

Resource constraints is the biggest risk. We will mitigate by prioritizing work and leveraging internal/external resources appropriately.

**Risk of No Action:**

SAP announced End of Life (EOL) of current platform at the end of 2027. That means SAP will not provide new enhancements or fixes to the standard core product beyond 2027. This introduces serious risk to our business operations.

**Project Alternatives:**

None. SAP announced the end of support of the current platform by 2027 with a possible extension until 2030. The current system needs to be upgraded to S4 HANA.

**Basis for Project Estimates**

Project estimates were calculated from expected number of contracted and internal labor hours multiplied by an assumed hourly rate. Costs also include software licensing and cloud infrastructure.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

[illegible]

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026             | 2027             | 2028             | 2029             | 2030        | 2031        |
|------------------------|------------------|-----------------|------------------|------------------|------------------|------------------|-------------|-------------|
| # AFUDC                | \$ 6,763         | \$ 49           | \$ 559           | \$ 1,341         | \$ 2,115         | \$ 2,698         | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # External Services    | \$ 40,561        | \$ 2,032        | \$ 9,422         | \$ 10,798        | \$ 10,213        | \$ 8,095         | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # Internal, Labor      | \$ 7,593         | \$ 786          | \$ 1,716         | \$ 1,697         | \$ 1,697         | \$ 1,697         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # Materials            | \$ -             | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| # Overheads - External | \$ -             | \$ -            | \$ -             | \$ -             | \$ -             | \$ -             | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 54,917</b> | <b>\$ 2,867</b> | <b>\$ 11,697</b> | <b>\$ 13,836</b> | <b>\$ 14,025</b> | <b>\$ 12,491</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## CRM Front Office Improvements - NY

### PROJECT INFORMATION

|                                           |                                               |                                                |                                                 |                                    |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005614              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Alexander, Christine | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Sep-2024                  | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Address upgrades to customer services processes and SAP/CRM which will improve the customer service representative experience navigating and using the CRM system and lead to decreased call handling time, decreased NY PSC complaints, and increase customer satisfaction. Implement billing system functionality to create and manage Non-ACE (Accelerated Exceptions) Billing improvements and additional BPEM (Business Process Exception Management) cases as well as automation of tasks with the goal of improving the overall BPEM capabilities to support the business.

#### Project Scope:

Scope includes various SAP/CRM improvements including:

- CRM Latency Issues - Stuck Loading Screen
- Link Op-Co Identified at start of forwarding a contact to the referral at the end
- Change Verbiage to Opt-Out Indicator on Installation Line
- Added functionality - Account Overview - show active or inactive accounts.
- Refresh capability
- Billing Correction Workbench - Mass Billing Corrections
- Clean up of SSN/TIN on BP Org
- Auto confirm premise even if the BP has moved out and not linked to any other active account
- CRM Dashboard
- Installment Plan Creation - Installment Plan Exists message when previous plans stuck in "Cleared"
- BP # disappearing from Display Contact w/ text after backing out of selected Contact
- Automate business calculator tools in CRM
- NY CRM Dashboard

Scope also includes various Non-Ace & BPEM improvements including:

- Custom Outsourt Check Group
- Refinement of invoice outsourt criteria
- Dedicated blocks by process
- Tool for Un-Billed and Un-Invoiced Accounts
- Meter Read Implausibles - Automation of case resolution
- Leveraging ISU (Industry Solution Utilities) Assess Workflow
- Open MR (Meter Reading) Order – Open MR Orders for registers missing rate type
- Open MR Orders for non-relevant for billing registers
- Create Collective Billing Dashboard
- PWB (Print Work Bench) Enhancement
- Data File Format Validation (User Training)
- Meter Installation (User Training)
- Collective Invoice reversal
- Prevent I025 creation for CDG (Community Distributed Generation)/Value Stack Accounts
- Auto Closure to automate resolution of Z201 Exception
- EV (Electric Vehicle) Programs - Installation Operand Identifiers
- Agile solution for new surcharges
- Customer Benefit Contribution (CBC) Automation
- Combine NYSEG Gas Delivery Prices
- NYSEG Gas SC 16 delivery price keys Tier 1, 2, 3
- Settlement Changes (Not Applicable until next Rate Case)
- Auto Closure
- New BPEM Cases - Billing Exceptions
- New BPEM Cases - Retail Exceptions
- Clean up Sweeper case categories
- Enhance EMMACLS (Prior Exception Management)
- Additional secondary objects
- Convert FICA (Financial Accounts & Recievables) outlook inboxes requests to be managed via BPEM cases
- BPEM Operational ReportVarious SAP/CRM improvements listed below. Refer to Requirements tab and see embedded Work Document for additional information.

These are known issues and possible opportunities for improvement that can directly impact representative interactions with customers and applicants, including average handle time and call quality. Improvements impacting the customer experience can potentially reduce Negative Revenue Adjustments (NRA's) such as:

PSC Complaints, % of Calls Answered in Less than 30 seconds, and Customer Satisfaction, which carry a weight of up to \$49,020,000 total exposure for NYSEG and RG&E.

### Project Risks and Mitigation Plan:

### Risk of No Action:

### Project Alternatives:

## Basis for Project Estimates

The cost estimates include internal labor and external resources such as SWF (Software Factory). These estimates are derived from multiple sources, including historical man-hour data, as well as cost estimates from similar projects within NYSEG and RG&E. Estimates are reviewed and updated as needed.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 2          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 2          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 195        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 195        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 197</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 197</b> |  |  |

| Outside Services | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------------|-------|------|------|------|------|------|
| <b>Total</b>     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

| Capital Details:       | Total           | 2025            | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 97           | \$ 44           | \$ 53         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,437        | \$ 1,100        | \$ 337        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 282          | \$ 212          | \$ 71         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,816</b> | <b>\$ 1,356</b> | <b>\$ 460</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## Customer Journey Improvements

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                        |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005146              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing              | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The high level objectives of this program are to provide our customers with an improved customer experience and to increase contact satisfaction. We will also increase digital engagement which typically has a higher CSAT (Customer Satisfaction) than traditional contact methods; this will also have an impact on cost to serve by reducing the need for customers to use more expensive contact methods. These improvements will include several digital and operational improvements as well as focusing on operational efficiencies including automation of non-value add tasks. There will also be several ongoing new initiatives to support our employees and customers.

The Customer Experience Enhancements Program is rooted in an iterative process called Design Thinking. Design Thinking is used by some of the world's largest brands, including Bank of America, TMobile, Airbnb, and Apple. Through this process, each OpCo will go through five phases per experience to understand the end user and identify solutions that will result in new end-to-end experience maps and customer-tested prototypes for IT production and implementation.

#### Project Scope:

The program features to be delivered in 2025 (Wave 2) will further progress how customers interact with the company's most critical touchpoints by continuing to leverage residential satisfaction studies and the Voice of the Customer (VOC) programs.

Those feature enhancements will include:

1. Customer Interaction Enhancements (ex: customer requests, alerts/digital communications, and regulatory-based web requests, etc).
2. Service Management Enhancements (ex: outage, move-in/move-out/transfer of service, new connections etc.).
3. Billing and Payments Enhancements (ex: payments experience, debt collection, end-to-end meter-to-billing journey redesign. etc.)
4. Digital Platform Enhancements (ex: digital enablement for MyAccount and eBill. etc.)

#### Project Benefits:

Increase Contact satisfaction - Customers engaged in digital platforms have a higher customer satisfaction rate. Our ability to drive customers to our digital platforms will help reduce call volumes, allowing representatives to focus on more complex calls.

#### Project Risks and Mitigation Plan:

Projects were committed to in previous rate cases, so delays could result in fines, penalties and reputation damage. Mitigation plans are to ensure collaborative portfolio management

#### Risk of No Action:

Companies must continually enhance their customer journeys, and reduce their cost to serve, to meet with evolving customer expectations. With technological advancements and the proliferation of digital platforms, customers are used to seamless, personalized experiences across all touchpoints, and if RG&E does not provide that customer satisfaction will fall.

#### Project Alternatives:

Alternatives to enhancements would be the status quo of each of these journeys, leading to outcomes in the "risk of no action" area.

#### Basis for Project Estimates

Costs are based on estimated number of contracted and internal labor hours multiplied by assumed hourly rates. The hours are based on vendor estimates and on past efforts of similar scope and complexity where applicable.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 61           | \$ -            | \$ 61           | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 8,724        | \$ 2,012        | \$ 1,370        | \$ 948          | \$ 1,005        | \$ 1,065        | \$ 1,129        | \$ 1,196        |
| # Internal - Non-AC    | \$ 909          | \$ 216          | \$ 100          | \$ 105          | \$ 112          | \$ 118          | \$ 125          | \$ 133          |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 9,695</b> | <b>\$ 2,228</b> | <b>\$ 1,531</b> | <b>\$ 1,053</b> | <b>\$ 1,117</b> | <b>\$ 1,183</b> | <b>\$ 1,254</b> | <b>\$ 1,329</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Customer Service Generative AI

### PROJECT INFORMATION

|                                           |                                               |                                        |                                            |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005506              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

The **Customer AI Assistant** will be a customer-facing chatbot powered by generative AI. This chatbot will provide customers with personalized answers to their questions, including both general inquiries and account-specific information. The generative AI will enable the chatbot to handle more complex questions, such as "Why is my bill so high?" by integrating with other data sources, analyzing the information, and providing specific responses to customers. Both tools will improve general information delivery by providing documents and guides that, using generative AI, can respond to customer queries if there is no specific flow for that topic. This assistant aims to improve the customer experience, reduce the workload for human agents, and increase customer engagement and satisfaction.

The **Agent AI Assistant** will be a chat interface designed to provide both general information and customer-specific details by integrating with SAP data. This real-time chat will automatically summarize relevant account information, such as interaction history, payments, and billing details, during each customer call. The AI will check previous interactions to provide context to the Customer Service Representatives (CSRs). Additionally, it will offer general information related to the programs offered, how to enroll online, and other relevant details. This solution aims to enhance efficiency and accuracy in handling customer queries, improve customer satisfaction through personalized service, and reduce training time for new CSRs.

#### Project Scope:

Implement new generative AI software creating agent assistants that will streamline common customer service interactions. Utilizing the power of Generative AI to better assist both customers and contact center representatives creates efficiency, accuracy, and increases contact satisfaction. The customer-facing chatbot, known as the Customer AI Assistant, will provide customers with answers to general inquiries and account-specific questions, reducing the need for customers to call. This chatbot will integrate with various data sources, analyze information, and provide specific responses to customers, even for complex questions. Similarly, the Agent AI Assistant will offer real-time summaries of relevant account information and general details about programs and enrollment, enhancing the efficiency and accuracy of Customer Service Representatives (CSRs).

Annual software upgrades and enhancements will keep the AI agents up to date and maximize effectiveness for customers and customer service representatives. This continuous improvement ensures that both the Customer AI Assistant and the Agent AI Assistant remain effective tools for improving customer experience and operational efficiency.

#### Project Benefits:

Increase CSAT (customer satisfaction)  
Decrease calls  
Decrease call handle times

#### Project Risks and Mitigation Plan:

One key risk is the challenge of integrating the AI assistants with existing SAP systems, which could cause delays and increased costs. To mitigate this, we will conduct compatibility assessments and involve integration specialists from the start, using a phased approach for testing. Data privacy and security are also major concerns, as breaches could lead to legal issues and loss of trust. We will implement strong encryption, regular security audits, and comply with data protection regulations. A rapid response team will be ready to address any breaches. The accuracy of AI models is another risk, as inaccurate responses could lead to customer dissatisfaction. We will regularly update and monitor the AI models, and use a human-in-the-loop system for complex queries. User adoption may be a challenge, with potential resistance from CSRs and customers. To address this, we will provide comprehensive training and user-friendly interfaces, and engage users early for feedback.



**Risk of No Action:**

If the project is not undertaken, several significant consequences could arise. Firstly, the efficiency and accuracy of handling customer inquiries will remain suboptimal, leading to prolonged resolution times and increased customer dissatisfaction. This could result in higher call volumes and operational costs, as more human agents will be needed to manage the workload.

Financially, the organization may face increased costs due to inefficiencies and the need for additional staffing. Moreover, the lack of AI-driven insights could lead to missed opportunities for cost savings and revenue generation. Delays in adopting AI technology could also result in falling behind competitors who leverage AI to enhance their customer service.

Stakeholders, including customers, shareholders, and local communities, would be negatively impacted. Customers may experience frustration due to slower and less accurate service, leading to a decline in customer loyalty and satisfaction. Shareholders might see reduced returns on investment due to increased operational costs and missed growth opportunities. Local communities could be affected by the organization's reduced competitiveness and potential downsizing.

**Project Alternatives:**

1. Traditional Chatbots: One alternative was to implement traditional rule-based chatbots. These chatbots are less complex and cheaper to develop. However, they lack the ability to handle complex queries and provide personalized responses, which limits their effectiveness in enhancing customer satisfaction and operational efficiency.

2. Manual Process Enhancements: Another option was to enhance the existing manual processes by providing additional training to Customer Service Representatives (CSRs) and improving the current CRM tools. While this could improve efficiency to some extent, it would not leverage the full potential of AI to provide real-time insights and personalized service.

3. Outsourcing Customer Service: Outsourcing customer service to a third-party provider was also considered. This option could potentially reduce costs in the short term. However, it could lead to a loss of control over the quality of customer interactions and may not align with the company's long-term strategic goals.

Preferred Solution: The preferred solution is to implement the Customer AI Assistant and Agent AI Assistant powered by generative AI. This approach was selected because it offers the most comprehensive benefits. It provides personalized, accurate, and efficient responses to customer inquiries, reduces the workload for human agents, and enhances overall customer satisfaction. Additionally, it ensures the organization remains competitive by leveraging advanced AI technology to improve operational efficiency and customer experience.

**Basis for Project Estimates**

Costs estimates would be based on the number of hours needed to develop each of the features, integrate with SAP, build any new service if needed, etc.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2025          | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|---------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 624        | \$ 307        | \$ 317        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 154        | \$ 76         | \$ 78         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 778</b> | <b>\$ 383</b> | <b>\$ 395</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## eQuality Management System (QMS)

### PROJECT INFORMATION

|                                           |                                               |                                        |                                           |                                    |
|-------------------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005545              | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2025             | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Implementation of powerful technology to model in a collaborative environment and easily validates the work with process owners.  
Map processes graphically in the easily understood Business Process Modeling Notation (BPMN).  
Assign Responsibility, accountability and ownership at all levels (RACI).  
Comprehensively document end to end processes, capturing critical hand-offs between business.  
Easily manage the entire lifecycle of a process from documentation, review and approval to communication of change and ongoing feedback.  
View process related documents, resources and assets and all process touch points.  
Maintain transparency for compliance and governance within a complex regulatory.

#### Project Scope:

Select an eQMS platform that aligns with organization's quality objectives, regulatory requirements, and existing IT infrastructure.

- Configure and customize the eQMS to fit specific process requirements and workflows.
- Ensure seamless integration with existing systems and data migration.
- To develop a comprehensive electronic outline for each process, identifying opportunities for optimization and automation.
- Digitalize processes to streamline operations, increase productivity and continuously improve.
- Support of complex improvement, compliance and transformation initiatives.

#### Project Benefits:

Increase the quality and availability of Customer Service processes in order to mitigate risk related with penalties. Increase customer satisfaction to improve the reputation for the company.

Fees in NY are rising and a system to determine the fees is required to be transparent. Correcting the fee issues for NY will help in implementing the other OpCos to implement the process to provide quality management of all processes and systems integrated.

Need validations in place for incorrect meter readings or incorrect bills from reaching the customers.

Risks if not implemented: higher fines and regulatory fees.

#### Project Risks and Mitigation Plan:

Exclusion from future implementations: If the OpCo does not implement a quality system, it could be excluded from future implementations in other OpCos. This can result in:

Competitive disadvantage: Other OpCos that implement the quality system may offer better service, and leaving the OpCo behind.

Loss of synergies: Not participating in the implementation can lead to a lack of alignment and collaboration with other OpCos, missing opportunities to share best practices and resources.

Operational isolation: The OpCo could become isolated in terms of processes and standards, making global integration and operational efficiency more difficult

Financial impact: Exclusion from future implementations can have a significant financial impact, as the OpCo might lose investments and financial support aimed at quality improvements.

This mitigation plan should help address the potential risks associated with not having a formal quality system in place for customer service processes. Implementing these strategies can minimize the impact of these risks. The estimated cost is aprox. 30% of the overall project.

- Provide customer service employees with training on best practices and consistency in communication to reduce errors.
- Develop a communication strategy to manage customer expectations and communicate how the company is addressing service issues.
- Prepare a crisis management plan to handle potential PR issues swiftly and effectively.
- Actively monitor social media channels for negative feedback and address concerns publicly to show commitment to quality.
- Document existing processes and identify key areas where errors frequently occur, focusing on reducing inefficiencies.
- Conduct regular cost analysis to identify the financial impact of errors and rework, allowing for targeted improvements.
- Consider implementing automation tools in high-error areas to reduce manual mistakes and increase efficiency.
- Develop and distribute clear, easy-to-follow guidelines and procedures for customer service tasks to reduce confusion.
- Involve employees in process improvement discussions to gain their insights and increase their sense of ownership.
- Offer continuous training and development opportunities to keep employees informed and skilled in handling tasks efficiently.
- Test small-scale quality initiatives to gather data on customer response before rolling out larger implementations.
- Conduct regular internal audits of customer service processes to identify areas of non-compliance and take corrective action.

### Risks of not implementing a quality system in customer service processes:

- Customer dissatisfaction: Without a quality system, inconsistencies and errors can occur, leading to unhappy customers.
- Loss of reputation: Poor service quality can damage company reputation.
- Increased costs: Mistakes and inefficiencies can lead to higher operational costs due to the need for rework and handling complaints.
- Employee frustration: Lack of clear processes and standards can result in confusion and frustration among employees, affecting their performance and morale.
- Missed opportunities: Without a quality system, we may miss out on valuable feedback and insights that could help improve our services and customer satisfaction.
- Regulatory non-compliance: Failing to meet quality standards can result in legal issues and fines.

None - the alternative would be to not implement the quality system and to maintain the status quo.

Project estimates were calculated from expected external and internal labor hours multiplied by an assumed hourly rate. Costs also include software licensing.

Materials - The estimation cost for software is not based only in the number of licenses but in the amount of data to be used for data mining. Moreover, there are different type of licenses according to the role of the user. The range of the cost by user and type of license is \$500-\$7500 for a total of 250 users in NY.(average of \$1,431 per license).

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total         | 2025          | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|---------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 37         | \$ 28         | \$ 9          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 501        | \$ 376        | \$ 125        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 6          | \$ 4          | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 241        | \$ 121        | \$ 121        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 785</b> | <b>\$ 529</b> | <b>\$ 256</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## New IVR and Voice Solution

### PROJECT INFORMATION

|                                           |                                               |                                     |                                           |                                    |
|-------------------------------------------|-----------------------------------------------|-------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>PRJ-005010              | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Bartczak, Mike | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Jul-2024            | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

Implement new CCaaS (Contact Center as a Service) for all Avangrid OpCos to replace current Genesys IVR platform.

#### Project Scope:

Implement new CCaaS (Contact Center as a Service) platform, transitioning from the current Genesys platform to new Talkdesk platform. We will implement the solution in different phases, aligned to the substitution of the current CCaaS solutions (Proposed CCaaS solution – Talkdesk) in a roadmap to determine how they can map the existing features:

- Propose a unified design (IE: self-service options and prompts).
- Interactive Voice Response (IVR) capabilities including Avangrid standardized interactive voice response capabilities DTMF (Dual-Tone Multi-Frequency) and Direct Dialog Speech.
- Contact routing of multiple channels including voice and email and Outbound dialer.
- Support management, with administrative capabilities such as workforce management, call recording, quality monitoring, reporting, and dashboards.
- Computer Telephony Integration (CTI) with Utah, the current version release of Service Now.
- Computer Telephony integration with SAP (CRM7.0 and ECC 6.0 suite on HANA) and able to support future SAP S/4 HANA and CRM products such as SAP service cloud platform.
- Integrate the following processes: IVR, SAP, CRM, IVA, Mosaicx Virtual Hold.
- Project scope includes rolling out new functionality for Omni Channel, Chat channel, SMS, Virtual Assistant.
- Integration with Business Process Outsourcing (BPO).
- Middleware work (insert based on vendor).
- Provide features in a Roadmap of what is offered as requirements.
- All historical data would be retained from current platform in a readily searchable format.
- Migrate Avangrid phone numbers to the cloud provider that contains engineering, designs and cost related to:
  - Full Port
  - BYOC (Bring your own carrier)
  - Hybrid
- Procure required CCaaS licenses (DEV & PRD environments) including Text-to-speech (TTS) and Automatic Speech Recognition (ASR)
- Integrate VHT (Virtual Hold) cloud to new CCaaS platform
- Implement datalake for historical recording playback (Genesys, NICE)

#### Project Benefits:

Current Genesys IVR platform is reaching end of life by July 2025. Future IVR platforms are SaaS-based platforms.

Unified call flow, better customer experience and cost-effectiveness through improved self-service, right channeling contacts and enhancing agent efficiency. Improved Reliability and stability.

Consequences if we don't do it - Current platform won't be supported beyond 2025. This puts contact centers at risk to take customer calls which directly impacts customer experience, service levels and risk of incurring penalties.

#### Project Risks and Mitigation Plan:

Delays in the procurement process is the biggest risk. To mitigate we are collaborating closely with Procurement and working diligently to complete procurement requirements and on-board the vendor.

Major risk to the IVR system to serve RGE customers as the current Genesys Platform end of life is July 2025.

There are no alternatives as the current IVR/Telephony platform is reaching end of support by Q2 2025.

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates to implement the new platform as well as the cost of software licenses.

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023        | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 231        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 231        |  |  |
| # Internal - Non-AC    | \$ 24         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 24         |  |  |
| # Internal, Labor      | \$ 6          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 6          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 263</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 263</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 35           | \$ 35         | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,671        | \$ 749        | \$ 922        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 46           | \$ 46         | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,752</b> | <b>\$ 831</b> | <b>\$ 922</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |

## High Bill High Usage Customer Experience Redesign

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                       |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric  | <b>Project ID:</b><br>PRJ-006148              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>12/31/2026           | <b>In-Service Date:</b><br>12/31/2026 |

**Project description:**

Reimagining and redesigning the customer billing and usage experience to help customers avoid, understand and manage high bills.

**Project Scope:**

We will be conducting multiple phases of research, including qualitative interviews with customers and SMEs, and a survey across all OpCos. From this we will be identifying service design opportunities across all touchpoints of the journey and aligning with OpCos for which to further test and bring into productions. These touchpoints include: proactive management, early detection and exploration, support and guidance, resolution and empowerment, and continuous improvement and trust building. We will then implement the redesigned journey by implementing new software solution(s) and/or significantly enhancing existing software with new functionality.

**Project Benefits:**

The goals of this work are to fundamentally reduce the number of customer calls regarding high bills, improve overall CSAT (customer satisfaction), reduce debt profile through improved payment methods and increase program outreach. Additionally, through this work we are actively working to address key JD Power metrics.

**Project Risks and Mitigation Plan:**

Energy consumption and bill understanding can be a complex subject for customers of all demographics to understand. There is a risk that any information or advice provided will hinder understanding or be delivered at the wrong time to be useful or actionable.

We are conducting significant qualitative and quantitative customer reseach to ensure that the new journeys and tools built by this project will answer the needs of all our customer demographics. We will also be conducting extensive testing and managing roll-outs closely to react to customer responses and make changes accordingly.

**Risk of No Action:**

Making no changes to the customer billing and consumption experience leaves customers at risk of not understanding their own usage habits and unable to effectively manage their energy bills.

**Project Alternatives:**

Make no changes to the existing billing and usage tools available to our customers.

**Basis for Project Estimates**

Previous customer experience redesign projects, utilizing a similar research and implementation methodology.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2021        | 2022        | 2023        | 2024        | 2025          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 10         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 396        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 396        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ 0          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 407</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 407</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$'000's)

| Capital Details:       | Total           | 2026          | 2027          | 2028        | 2029        | 2030        |             |             |
|------------------------|-----------------|---------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| # External Services    | \$ 1,022        | \$ 563        | \$ 458        | \$ -        | \$ -        | \$ -        |             |             |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |             |             |
| <b>Total</b>           | <b>\$ 1,022</b> | <b>\$ 563</b> | <b>\$ 458</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|-------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

## Mobile App Redesign

### PROJECT INFORMATION

|                                           |                                               |                                                |                                            |                                       |
|-------------------------------------------|-----------------------------------------------|------------------------------------------------|--------------------------------------------|---------------------------------------|
| <b>OpCo:</b><br>Rochester Gas & Electric  | <b>Project ID:</b><br>PRJ-006155              | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Paterson, Craig | <b>Project Type:</b><br>Project       |
| <b>Business Area:</b><br>Customer Service | <b>Rate Case Category</b><br>Customer Service | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>12/31/2026           | <b>In-Service Date:</b><br>12/31/2026 |

#### Project description:

The mobile application redesign initiative aims to enhance the user experience for customers of our large utility. This project will be executed by our digital customer experience team, leveraging Design Thinking methodologies to ensure a customer-centric approach. The redesign will focus on improving usability, accessibility, and overall satisfaction, aligning with our commitment to delivering exceptional digital services.

#### Project Scope:

The scope of the project includes a comprehensive overhaul of the mobile application's user interface and user experience. Key activities will involve user research, prototyping, usability testing, and iterative design improvements. The project will also integrate new features such as real-time outage notifications, personalized energy usage insights, and seamless bill payment options, ensuring the app meets the evolving needs of our customers. To execute this, we will implement new software solution(s) and/or significantly enhance existing software with these new functionalities.

#### Project Benefits:

The redesigned mobile application will provide significant benefits, including increased customer engagement and satisfaction through a more intuitive and user-friendly interface. Enhanced features will empower customers with better control and understanding of their energy usage, leading to potential customer cost savings. Additionally, the improved app will streamline customer interactions, reducing the need for support calls and increasing operational efficiency for the utility.

#### Project Risks and Mitigation Plan:

Risk - The development of enhancements require complex development, leading to potential delays.  
Mitigation - We will conduct phased development with early testing and prototyping.

Risk - Unexpected development costs, third-party service fees, or UI/UX iterations could increase expenses.  
Mitigation - We will implement cost controls .

Risk - Customers can find the new interface / features confusing, resulting in declined engagement.  
Mitigation - We will conduct user testing and gather feedback before full deployment.

**Risk of No Action:**

Without a modern UI/UX and featureset, users may be left without an optimal digital experience. This will lead to increased customer support calls due to unclear billing and lack of self-service options. Delays in outage notifications could impact public safety. We will fail to improve customer satisfaction and still be bottom of the JD Power ranking for utility companies.

**Project Alternatives:**

Remaining with our current App's featureset & UI/UX provides our customers with an outdated experience. Doing minimal updates to the existing app would not address the major pain points and would have limited impact on engagement.

**Basis for Project Estimates**

Costs are based on estimated number of contracted and internal labor hours multiplied by assumed hourly rates. The hours are based on vendor estimates and on past efforts of similar scope and complexity where applicable.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

|              |               |             |             |             |             |               |
|--------------|---------------|-------------|-------------|-------------|-------------|---------------|
| <b>Total</b> | <b>\$ 412</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 412</b> |
|--------------|---------------|-------------|-------------|-------------|-------------|---------------|

Actual O&M, all amounts shown below in thousands (\$000's)

[illegible]

Forecasted Capital, all amounts shown below in thousands (\$'000's)

[illegible]

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **NSYEG Common Fleet**

## NYSEG Fleet Replacement Program

### PROJECT INFORMATION

|                                           |                                         |                                     |                                          |                                        |
|-------------------------------------------|-----------------------------------------|-------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>UW-GS201-NYSEG-CM | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Catalano, Amy | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Fleet      | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The capital expenditures for Fleet Services are for the replacement of vehicles and equipment and are based on established lifecycle criteria. The Fleet Replacement Programs' overall objective is to provide a safe, reliable, regulatory compliant and cost-effective fleet of vehicles and equipment for the Companies. The capital expenditures ("CapEx") for Fleet are for the replacement of light-, medium- and heavy-duty vehicles and equipment, and are based on established life cycle criteria (years, mileage, and/or hours). Increased funding will aid in the acquisition, maintenance and disposal of fleet vehicles and equipment.

#### Project Scope:

Capital purchase of vehicles and equipment to support growth in operations and need for new vehicles and replacements at all OpCos. To support Operations growth and need for additional vehicles to allow the business partners to be cost effective and productive. The proposal also supports replacements of the existing Fleet based on replacement life cycles established by vehicles type.

2025 - 9 ATVs, 7 Bucket Trucks, 3 Cars, 3 Digger/Derricks, 9 Dump Trucks, 4 Forktrucks, 4 Loaders, 27 Pickup Trucks, 3 Semi-Tractors, 34 Stake/Service Trucks, 46 SUVs, 1 Tracked Vehicle, 178 Trailers, 48 Vans, 8 pieces of Equipment

2026 - 1 Backhoe, 4 Bucket Trucks, 1 Digger/Derrick, 1 Forktruck, 4 Aerial Trucks, 19 Pickup Trucks, 18 Stake/Service Trucks, 2 Trailers, 10 Vans

2027 - 46 Bucket Trucks, 1 Digger/Derrick, 30 Stake/Service Trucks, 3 Trailers, 1 Van, 1 pices of Equipment

2028 - 10 ATVs, 28 Bucket Trucks, 16 Digger/Derricks, 1 Forktruck, 15 Pickup Trucks, 29 Stake/Service Trucks, 49 SUVs, 2 Tracked Vehicles, 1 Trailer, 1 Van

2029 - 8 ATVs, 5 Backhoes, 16 Bucket Trucks, 10 Cars, 10 Pickup Trucks, 11 Digger/Derricks, 2 Dump Trucks, 8 Stake/Service Trucks, 20 SUVs, 11 Trailers, 2 Vans

2030 - 18 Backhoes, 22 Bucket Trucks, 61 Pickup Trucks, 15 Digger/Derricks, 4 Dump Trucks, 2 Forktrucks, 4 Loaders, 4 Stake Trucks, 21 SUVs, 26 Trailers, 3 Vans

2031 - 7 ATVs, 101 Bucket Trucks, 3 Digger/Derricks, 1 Forktruck, 4 Tracked Vehicles, 4 Trailers, 3 Vans

Additional scope includes necessary Fleet increases to support the incremental FTEs being requested throughout the Rate Case.

#### Project Benefits:

Fleet Services strives to achieve economies of scale that result in cost reduction opportunities by utilizing national contracts, standardized or "Off the Shelf" specifications and, wherever feasible, to take advantage of preferential purchasing terms in accordance with procurement guidelines. The annual Fleet Replacement Program is based on unit age and/or usage (Miles/Hours). Understanding that units achieving the replacement criteria based on age and/or mileage are proposed for replacement and the results checked and collated to form the Fleet Replacement Matrix. This criterion ensures that the optimum combination of age and mileage is attained, while also taking into consideration the total cost of ownership. Model year advancements by the vehicle and equipment manufacturers are factored into the acquisition process to ensure that the latest technical and safety features are included when applicable. Changes in operational requirements are also considered, based on feedback from the end-users of the fleet.

#### Project Risks and Mitigation Plan:

The risk of reducing the fleet replacement program would be major compenent failures in vehicles and equipment beyound the useful life, reliability and safety of vehicles for employees and the customers, increase to O&M for maintenance and repairs, inability to support operations/business growth, and need to rental additional vehicles. Mitigation would be increase rentals and increase O&M to fund additional repairs.

If the Companies are unable to replace aging fleet vehicles, there would be impacts to reliability and operations, which would negatively affect customers. Examples of these impacts include: (1) Slower Response Times – Older vehicles have reduced reliability and performance capabilities resulting in slower response times to emergencies, such as gas leaks. This delay can put customers at risk and exacerbate the impact of the situation. Additionally, aging fleet vehicles are more prone to breakdowns and mechanical failures, leading to increased downtime for repairs and maintenance, which strains the Companies' workforce and reduces the ability to meet customer demands promptly. (2) Reduced Efficiency – Aging fleet vehicles tend to be less fuel-efficient and have higher maintenance costs, leading to higher operating expenses for the companies. As older vehicles may have higher emissions and contribute to air pollution, delaying fleet replacements can hinder the Companies' efforts to reduce its carbon footprint and meet environmental sustainability goals. (3) Safety Risks – Older vehicles may lack modern safety features and technologies, putting employees and customers at increased risk of accidents and injuries during field operations. (4) Increased O&M Spend – without increased Capital funding to purchase vehicles, the Companies' will be forced to lease or rent vehicles, increasing operational costs that are passed onto the customer.

Increase to O&M for rental vehicles and additional repairs as the fleet continues to age.

The project is based on the age of vehicles by class (7 years light duty, 10 years heavy duty, 7-20 years for equipment) along with vehicle reliability and downtime. The replacement criteria is applied to the current fleet to develop those vehicles beyond their useful life and a replacement value is target for each unit, this amount is increased by any additional growth or company requirements to add to fleet.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total             | 2020             | 2021             | 2022             | 2023             | 2024             |  |  |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|--|--|
| # AFUDC                | \$ 25             | \$ 4             | \$ 5             | \$ 5             | \$ 5             | \$ 6             |  |  |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| # External Services    | \$ 9,446          | \$ 220           | \$ 594           | \$ 1,736         | \$ 3,190         | \$ 3,706         |  |  |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| # Internal, Labor      | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| # Internal, Overheads  | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| # Materials            | \$ 151,853        | \$ 28,986        | \$ 39,039        | \$ 22,371        | \$ 35,542        | \$ 25,915        |  |  |
| # Overheads - External | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |  |  |
| <b>Total</b>           | <b>\$ 161,324</b> | <b>\$ 29,210</b> | <b>\$ 39,638</b> | <b>\$ 24,112</b> | <b>\$ 38,737</b> | <b>\$ 29,628</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
|------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| # AFUDC                | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # CIAC                 | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # External Services    | \$ 158,372        | \$ 18,875        | \$ 36,758        | \$ 22,009        | \$ 20,904        | \$ 19,362        | \$ 20,326        | \$ 20,137        |
| # Internal - Non-AC    | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Labor      | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Internal, Overheads  | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Materials            | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| # Overheads - External | \$ -              | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             | \$ -             |
| <b>Total</b>           | <b>\$ 158,372</b> | <b>\$ 18,875</b> | <b>\$ 36,758</b> | <b>\$ 22,009</b> | <b>\$ 20,904</b> | <b>\$ 19,362</b> | <b>\$ 20,326</b> | <b>\$ 20,137</b> |

[illegible]

## NYSEG Global Telematics Solution

### PROJECT INFORMATION

|                                           |                                    |                                     |                                           |                                        |
|-------------------------------------------|------------------------------------|-------------------------------------|-------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-002539   | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Perry, Theresa | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Fleet | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

Implement an updated telematics solution that will replace our existing solution which is set to expire in June 2026. This will allow us to leverage the advancements in telematics technology that our current solution does not offer.

Telematics is a system where devices are installed in the vehicles, the devices collect and transmit data related to the vehicle's operation, location, and the behavior of its driver. This data is utilized for improving operational efficiency, enhancing driver safety, reducing fuel consumption, and optimizing fleet management.

#### Project Scope:

As of January 2025, approximately 1,297 vehicles within the AVANGRID NYSEG fleet are equipped with telematics; approximately 215 devices need to be installed. The objective of this project is to standardize our telematics solution across all AVANGRID vehicles, encompassing light, medium, and heavy-duty fleet vehicles. Each vehicle in the fleet will be outfitted with a telematics device, installed by either a qualified company mechanic or an external provider. The scope of this project includes the purchase of the necessary hardware and the costs associated with the installation process. Installations will be performed by our qualified company mechanics and/or external services provider.

#### Project Benefits:

- 1) Increase health and safety for our drivers
- 2) Reduce fuel consumption and CO2 emissions
- 3) Maximize vehicle utilization and productivity to efficiently serve customer needs
- 4) Improve vehicle maintenance monitoring
- 5) Determine feasibility of alternate fuel vehicles such as electric vehicles

#### Project Risks and Mitigation Plan:

Project risk: Budget is insufficient for project.

Mitigation plan: Telematics will be put through the competitive bid process. The request for proposal (RFP) will include numerous vendors who will be evaluated on technical requirements and commercial terms. The RFP will also include all Avangrid operating companies with the expectation that there will be economy of scale advantages.

#### Risk of No Action:

- 1) Delayed or non-execution of the project will result in the continued use of outdated technology, which may not be as efficient or effective as newer solutions and the opportunity to leverage advanced technology solutions will be missed.
- 2) The maintenance costs for existing devices could increase over time due to wear and tear.
- 3) The older technology will become obsolete resulting in limited insight into vehicle location, driver behavior and missed opportunities to reduce fuel consumption and CO2 emissions.

#### Project Alternatives:

There are 2 alternatives:

(1) Continuation with Existing Provider: Continue utilizing the existing provider and their outdated technology. This option is dependent on the procurement process and may not offer the benefits of newer, more advanced telematics solutions.

(2) Termination of the Telematics Program: End the telematics program altogether. This would mean losing out on the benefits of telematics, such as:

- 1) Increase health and safety for our drivers
- 2) Reduce fuel consumption and CO2 emissions
- 3) Maximize vehicle utilization and productivity
- 4) Improve vehicle maintenance monitoring
- 5) Determine feasibility of alternate fuel vehicles such as electric vehicles



The projected estimated costs have been calculated based on our historical expenditure and the pricing provided by our current vendor. These costs encompass both the devices and the installation.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |



# **RG&E Common Fleet**

## RGE Fleet Replacement Program

### PROJECT INFORMATION

|                                           |                                       |                                     |                                          |                                        |
|-------------------------------------------|---------------------------------------|-------------------------------------|------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                      | <b>Project ID:</b><br>UW-GS202-RGE-CM | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Catalano, Amy | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Fleet    | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The capital expenditures for Fleet Services are for the replacement of vehicles and equipment and are based on established lifecycle criteria. The Fleet Replacement Programs' overall objective is to provide a safe, reliable, regulatory compliant and cost-effective fleet of vehicles and equipment for the Companies. The capital expenditures ("CapEx") for Fleet are for the replacement of light-, medium- and heavy-duty vehicles and equipment, and are based on established life cycle criteria (years, mileage, and/or hours). Increased funding will aid in the acquisition, maintenance and disposal of fleet vehicles and equipment.

#### Project Scope:

Capital purchase of vehicles and equipment to support growth in operations and need for new vehicles and replacements at all OpCos. To support Operations growth and need for additional vehicles to allow the business partners to be cost effective and productive. The proposal also supports replacements of the existing Fleet based on replacement life cycles established by vehicles type.

2025 - 2 ATVs, 2 Cars, 3 Digger/Derricks, 1 Dump Truck, 2 Forktrucks, 33 Pickup Trucks, 25 Stake/Service Trucks, 14 SUVs, 1 Tanker, 45 Trailers, 50 Vans, 4 pieces of Equipment

2026 - 4 Backhoes, 1 Bucket Truck, 26 Pickup Trucks, 2 Dump Trucks, 25 Pickup Trucks, 2 Service Trucks, 4 SUVs, 2 Trailers, 11 Vans

2027 - 3 Bucket Trucks, 1 Digger/Derrick, 9 Stake/Service Trucks, 1 Tracked Vehicle, 4 Trailers, 3 Vans

2028 - 2 ATVs, 8 Bucket Trucks, 1 Tracked Vehicle

2029 - 2 ATVs, 3 Bucket Trucks, 10 Cars, 2 Digger/Derricks, 1 Forktruck, 1 Pickup Truck, 11 SUVs, 2 Trailers, 1 Van

2030 - 1 Backhoe, 12 Bucket Trucks, 3 Digger/Derricks, 2 Dump Trucks, 5 Pickup Trucks, 1 Stake Truck, 1 SUV, 7 Trailers, 9 Vans

2031 - 4 ATVS, 9 Bucket Trucks, 3 Digger/Derricks, 7 Forktrucks, 1 Loader, 1 Trailer

Additional scope includes necessary Fleet increases to support the incremental FTEs being requested throughout the Rate Case.

#### Project Benefits:

Fleet Services strives to achieve economies of scale that result in cost reduction opportunities by utilizing national contracts, standardized or "Off the Shelf" specifications and, wherever feasible, to take advantage of preferential purchasing terms in accordance with procurement guidelines. The annual Fleet Replacement Program is based on unit age and/or usage (Miles/Hours). Understanding that units achieving the replacement criteria based on age and/or mileage are proposed for replacement and the results checked and collated to form the Fleet Replacement Matrix. This criterion ensures that the optimum combination of age and mileage is attained, while also taking into consideration the total cost of ownership. Model year advancements by the vehicle and equipment manufacturers are factored into the acquisition process to ensure that the latest technical and safety features are included when applicable. Changes in operational requirements are also considered, based on feedback from the end-users of the fleet.

#### Project Risks and Mitigation Plan:

The risk of reducing the fleet replacement program would be major compenent failures in vehicles and equipment beyond the useful life, reliability and safety of vehicles for employees and the customers, increase to O&M for maintenance and repairs, inability to support operations/business growth, and need to rental additional vehicles. Mitigation would be increase rentals and increase O&M to fund additional repairs.

#### Risk of No Action:

If the Companies are unable to replace aging fleet vehicles, there would be impacts to reliability and operations, which would negatively affect customers. Examples of these impacts include: (1) Slower Response Times – Older vehicles have reduced reliability and performance capabilities, resulting in slower response times to emergencies, such as gas leaks. This delay can put customers at risk and exacerbate the impact of the situation. Additionally, aging fleet vehicles are more prone to breakdowns and mechanical failures, leading to increased downtime for repairs and maintenance, which strains the Companies' workforce and reduces the ability to meet customer demands promptly. (2) Reduced Efficiency – Aging fleet vehicles tend to be less fuel-efficient and have higher maintenance costs, leading to higher operating expenses for the companies. As older vehicles may have higher emissions and contribute to air pollution, delaying fleet replacements can hinder the Companies' efforts to reduce its carbon footprint and meet environmental sustainability goals. (3) Safety Risks – Older vehicles may lack modern safety features and technologies, putting employees and customers at increased risk of accidents and injuries during field operations. (4) Increased O&M Spend – without increased Capital funding to purchase vehicles, the Companies' will be forced to lease or rent vehicles, increasing operational costs that are passed onto the customer.

Increase to O&M for rental vehicles and additional repairs as the fleet continues to age.

The project is based on the age of vehicles by class (7 years light duty, 10 years heavy duty, 7-20 years for equipment) along with vehicle reliability and downtime. The replacement criteria is applied to the current fleet to develop those vehicles beyond their useful life and a replacement value is target for each unit, this amount is increased by any additional growth or company requirements to add to fleet.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **NYSEG Common Information Technology**

## Client Project Requests and Integration Projects - NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                               |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|-----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>9301-3192-1480-NY-CM          | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Santacoloma, Asier | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                 | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The program is for business initiatives identified by the Network's business areas for future projects. NYSEG has a process of identifying the technology needs of the business, gathering information, vetting the project list and prioritizing based on need, business value and resource availability. The Project Demand Planning cycle runs annually and involves collating the requirements across all business areas for projects requiring IT expenditure. Projects are prioritized by the Vice Presidents in each business area before completing the estimation and capacity planning process.

#### Project Scope:

The scope of this project is business initiatives to be identified by the Network,s business areas for future efficiency projects. Annually, as the business areas define the projects requiring IT expenditure, the annual budgets for those identified projects are built from this project's budget.

#### Project Benefits:

The various Avangrid Networks business areas identify initiatives annually which require IT support. This identification happens during each area's planning cycle. This project allows the flexibility to allocate the annual budget to the area(s) of greatest need and priority which is not known until after each area completes their estimation processes.

#### Project Risks and Mitigation Plan:

The exact projects which will be identified each year as requiring IT expenditures is unknown. Therefore, it is not possible to assign a risk or mitigation plan.

#### Risk of No Action:

No new IT application projects will be developed within this PPM project. As the business area projects are identified, new PPM projects will be created and the annual budget transferred from this project to those new projects.

#### Project Alternatives:

Since no new IT application projects will be developed within this PPM project, there are no project alternatives to consider.

#### Basis for Project Estimates

The estimation is based on historical expenditure in IT applications.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025          | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 15,742        | \$ 945        | \$ 1,103        | \$ 1,103        | \$ 2,836        | \$ 3,034        | \$ 3,247        | \$ 3,474        |
| # Internal - Non-AC    | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 15,742</b> | <b>\$ 945</b> | <b>\$ 1,103</b> | <b>\$ 1,103</b> | <b>\$ 2,836</b> | <b>\$ 3,034</b> | <b>\$ 3,247</b> | <b>\$ 3,474</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR-NET-23-SG-01-Esri UN Deployment-NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                           |                                    |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>PRJ-002848                    | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Garbin, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Oct-2023            | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This project will replace the Company's current GIS system with the Utility Network Model (UNM). The existing data model is to be retired by the vendor in 2026. This will change the data model used by the Gas line of business and move to a more modern, utility specific model.

#### Project Scope:

The scope of the project will be to install the new version of GIS and to convert the data to the new Utility Network Model.

#### Project Benefits:

Migration of the current GIS geometric data models to the Utility Network model will prevent obsolescence as the old data model is being retired and replaced by the vendor in 2026. Upgrading will address the end of life and provide NYSEG with a fully supported solution.

Additional benefits of moving to the UNM include; a rule based engine that supports and enforces higher quality data entry, reduced data latency between enterprise systems due to native service oriented architecture, new branch versioning structure reduces performance impacts of long-running designs and this addresses current GIS software's end-of-life timeline. For Asset Management, a higher fidelity data model enables more granular tracking of real-world assets, such as substation internals, SCADA, and AMI equipment and controllers as well as Gas devices and network assets. Enhanced capabilities for modeling network data with greater detail and real-world representation of connectivity via use of associations. ArcGIS Pro is the new generation professional desktop application from Esri used to manage the GIS gas network with Utility Network Model. This application provides exponential performance improvements in startup, saving, edits and redrawing compared to traditional ArcMap. Enhanced Operations and Field Work through platform-integrated mobile applications supporting common GIS workflows. Inherent information security, with single user identity authorizes platform access across desktop, web, and mobile use cases. The solution has an improved data exchange, with flexible schema and standard export functions by feeder/pressure zone are designed to better support OMS, ADMS and planning solutions. The Utility Network model allows for a programmatically created schematic view of the network.

#### Project Risks and Mitigation Plan:

As Esri is a vital application and the master repository for all RGE assets, it is crucial to address any potential cybersecurity threats and avoid disruptions to our core processes. Therefore, upgrading to the new version is essential.

Maintaining an obsolete system can jeopardize the integrity and reliability of our operations, making it imperative to stay current with the latest Esri version.

#### Risk of No Action:

An obsolete system can jeopardize the integrity and reliability of our operations, potential cybersecurity threats and disruptions to our core processes.

#### Project Alternatives:

Esri as a core application has few, if any, viable alternatives. System will age, become unsupportable and eventually break down, so an upgrade strategy must exist.

#### Basis for Project Estimates

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates to implement the requirements capture under Esri UN Deployment project



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ 9          | \$ -        | \$ -        | \$ -        | \$ 1          | \$ 8         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ 126        | \$ -        | \$ -        | \$ -        | \$ 122        | \$ 3         |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 134</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 123</b> | <b>\$ 11</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025         | 2026            | 2027            | 2028            | 2029        | 2030        | 2031        |
|------------------------|------------------|--------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 12,111        | \$ 48        | \$ 1,063        | \$ 5,500        | \$ 5,500        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -             | \$ -         | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 12,111</b> | <b>\$ 48</b> | <b>\$ 1,063</b> | <b>\$ 5,500</b> | <b>\$ 5,500</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AWS SW Cloud Subscription - NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                        |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|----------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>PRJ-005661                    | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions.

#### Project Scope:

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions. These are now able to be capitalized are managed in the SAP RE Module. Costs associated with the renewal of the contracts are capitalized in the first year of the contract.

#### Project Benefits:

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. These are now able to be capitalized are managed in the SAP RE Module. These costs were historically OPEX so there is a reduction to operating costs.

#### Project Risks and Mitigation Plan:

The main risks of this project are related to the applications migration to the Cloud and new deployments:

Cost Overruns: Unexpected costs can arise during the migration process, leading to budget overruns.

Data Transfer and Compatibility Issues: Ensuring that existing infrastructure and applications are compatible with the target cloud environment can be a significant challenge.

Global Cloud model: The current global cloud model lacks of the required flexibility to migrate and deploy applications in AWS Cloud agile, adding more complexities to the migration and increasing time and effort to complete these deployments.

Compliance and Regulatory Challenges: Ensuring that the migration process complies with relevant regulations and standards is essential, especially to ensure our data protection and compliance requirements.

Incompatibility of Existing Architecture: Legacy systems may not be compatible with cloud environments, requiring significant modifications, re-architecting applications or re-factoring the entire application.

Performance Issues: Ensuring that applications perform optimally in the cloud environment can be challenging, especially if there are latency or other performance-related issues.

Mitigation strategies for these risks include thorough planning, selecting the right cloud migration strategy, ensuring compliance with data governance regulations, and having a clear understanding of non-functional requirements before the migration. Working with the Architecture team to ensure the proposed design is within the Cloud homologated services and solutions will make the deployment more agile and avoid the hurdles of homologating a solution during the migration. Applying our FinOps framework to these new deployments will maximize the business value of the cloud, enable timely data-driven decision-making regarding costs, and create financial accountability through collaboration between Cloud and Application teams.

#### Risk of No Action:

The risk of no action includes several factors that could significantly impact our organization's technological and strategy:

Loss of Cloud Technologies Capabilities: By not migrating to the cloud, we miss out on the advanced capabilities and innovations that cloud technologies offer. This includes scalability, flexibility, and access to cutting-edge tools and services that can drive business growth and innovation.

Lack of Modernization of Infrastructure: Staying with on-premises infrastructure means we are not modernizing our IT environment. This can result in slower performance, higher operational costs, and an inability to quickly adapt to changing business requirements. Modernizing our infrastructure through cloud migration can enhance our agility and responsiveness.

Misalignment with Company Strategy for Cloud Adoption: Our company's strategy emphasizes cloud adoption as a key component for future growth and competitiveness. Failing to align with this strategy can lead to a disconnect between our IT capabilities and the overall business objectives. This misalignment can hinder our ability to achieve strategic goals and maintain a competitive edge in the market.

Inefficiencies in Resource Utilization: Cloud environments allow for more efficient use of resources through features like auto-scaling and pay-as-you-go models. Without migrating to the cloud, we may face inefficiencies in resource utilization, leading to higher costs and lower productivity.

Inability to Leverage Data Analytics and AI: Cloud platforms provide powerful tools for data analytics and artificial intelligence (AI) that can drive insights and innovation. By not migrating, we may miss out on opportunities to leverage these technologies to improve decision-making and create new business value.

#### Project Alternatives:

Cloud as subscriptions has few, if any, viable alternatives. The only alternative will be to maintain applications on prem, but this will require to increase our Hardware purchases to maintain the performance of our systems based on the resource capacity.

The estimates were based on the current contract and the expected growth in cloud consumption. These contract prices are part of the global agreement with AWS, which provides us with lower prices than the standard AWS market rates.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025        | 2026        | 2027        | 2028            | 2029        | 2030             | 2031        |
|------------------------|------------------|-------------|-------------|-------------|-----------------|-------------|------------------|-------------|
| # AFUDC                | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| # External Services    | \$ 13,916        | \$ -        | \$ -        | \$ -        | \$ 2,713        | \$ -        | \$ 11,203        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| # Internal, Labor      | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| # Internal, Overheads  | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| # Materials            | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| # Overheads - External | \$ -             | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -             | \$ -        |
| <b>Total</b>           | <b>\$ 13,916</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 2,713</b> | <b>\$ -</b> | <b>\$ 11,203</b> | <b>\$ -</b> |

[illegible]

## GIS Environment SW Cloud Subscriptions - NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                        |                                           |                                    |
|-------------------------------------------------|-----------------------------------------------------|----------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>PRJ-007150                    | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Garbin, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing |

**Project description:**

This project will collect the cost of NYSEG's portion of the intangible asset for the subscription of software ESRI and ARCFM that is used to support the asset inventory as Geographical Information System's.

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with the ESRI and ARCFM Subscription renewals. These are now able to be capitalized and are managed in the SAP RE Module.

**Project Scope:**

Software license subscription plus support and maintenance.

**Project Benefits:**

ESRI & Schneider Electric SW Cloud Subscription - NYSEG

Usage of the software to support the asset inventory as Geographical Information System's for the company Operational team and others.

Subscriptions are now able to be capitalized and are managed in the SAP RE Module. These costs were historically OPEX so there is a reduction to operating costs.

**Project Risks and Mitigation Plan:**

No risk identified.

**Risk of No Action:**

If this investment is not done, the geographical information system solution will be unsupported and not be able to be used.

**Project Alternatives:**

No alternatives were considered at this time. ESRI and ARCFM are the strategic software selected to support the Geographical Information System's needs.

**Basis for Project Estimates**

Historical license cost with inflation adjustment

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027        | 2028        | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-----------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 3,330        | \$ -        | \$ 1,615        | \$ -        | \$ -        | \$ 1,714        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -            | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,330</b> | <b>\$ -</b> | <b>\$ 1,615</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,714</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR-NET-24-IT-01-Global S4Hana-NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                           |                                    |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>PRJ-005080                    | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Garbin, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Mar-2024            | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The S4/HANA transformation initiative is part of the Avangrid IT strategy, aiming to place technology platforms in a strategic position that enables the business to maximize digitalization, innovation and growth in an agile and efficient way.

#### Project Scope:

Avangrid Networks is willing to develop a Digital Transformation project taking advantage of the evolution of the current SAP platform to the newer S4HANA, based on the following guiding principles: **USER EXPERIENCE:** Seating people in the center of this transformation. Understanding the issues and pain points they challenge and defining innovative solutions that improve the experience in the new system. Maximizing user satisfaction and minimizing the effort within the new process. **PROCESS TRANSFORMATION:** Using technology as an opportunity to analyze and adapt the business processes. Challenging the requirements or existing processes, to keep a simple and standardized solution. Defining realistic transformation goals. **SIMPLE SOLUTION:** Keeping solution simplicity as a designing principle. Maximizing the usage of the capabilities of the new SAP platform. Challenging the need to adapt the solution, and building a Business case for every solution that is not aligned to SAP standard.

#### Project Benefits:

As per SAP product roadmap, current version will not be supported after 2027, extra cost will be needed if Avangrid extend the support until 2030. SAP is a key application to and must be supported by vendor to mitigate any interruption on our core process.

#### Project Risks and Mitigation Plan:

As SAP is a vital application and the master repository for all RGE assets, it is crucial to address any potential cybersecurity threats and avoid disruptions to our core processes. Therefore, upgrading to the new version is essential.

Maintaining an obsolete system can jeopardize the integrity and reliability of our operations, making it imperative to stay current with the latest SAP version.

#### Risk of No Action:

An obsolete system can jeopardize the integrity and reliability of our operations, potential cybersecurity threats and disruptions to our core processes.

#### Project Alternatives:

SAP as a core application has few, if any, viable alternatives. System will age, become unsupportable and eventually break down, so an upgrade strategy must exist.

#### Basis for Project Estimates

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates to implement the user stories capture under blueprint phase

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ 0         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0         |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ 88        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 88        |  |  |
| # Internal - Non-AC    | \$ 1         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 89</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 89</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029        | 2030        | 2031        |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 11,620        | \$ 1,995        | \$ 3,978        | \$ 4,291        | \$ 1,357        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 11,620</b> | <b>\$ 1,995</b> | <b>\$ 3,978</b> | <b>\$ 4,291</b> | <b>\$ 1,357</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR - IOC-NET-END USER LC-NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>PRJ-001807                    | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The overall goal of this project is to refresh Company's computing devices following the refresh lifecycle defined for this technology (four years) for users in scope. This project also provides personal computers (PC) in support of new hires and refresh demand requirements enterprise wide.

#### Project Scope:

Continued refresh at least 25% of computer environment (four year life cycle) and end user equipment for new employees joining the company

#### Project Benefits:

Replace aged equipment with new PCs to avoid service disruptions due to PCs not working properly due to their age. New computers also provide higher computing capabilities. This project also provides PCs in support of new hires and refresh demand requirements.

#### Project Risks and Mitigation Plan:

Delays in the replacement of the legacy devices causing productivity issues and unexpected outages. The mitigation plan is to have close coordination to ensure users are notified in advance of the lifecycle project, giving them time to prepare and avoiding the need to postpone the lifecycle date.

#### Risk of No Action:

The CAPEX lifecycle project for laptops and monitors is crucial for maintaining the operational efficiency and regulatory compliance of the business. If the project is not executed, the consequences could be significant:

**Operational Impact:** The business could face operational disruptions due to outdated or malfunctioning equipment, leading to decreased productivity and potential loss of business opportunities

**Legal and Regulatory Implications:** There may be fines and penalties for non-compliance with regulatory standards, which could include safety violations or failure to meet industry-specific regulations

**Financial Impact:** Delays or failure to proceed with the project could result in increased costs due to emergency repairs, replacements, and potential fines. The financial impact could also include the loss of stakeholder confidence and a decrease in shareholder value

**Stakeholder Effects:** Customers, shareholders, and local communities could be adversely affected by service interruptions, reduced service quality, and the company's inability to meet its commitments. This could damage the company's reputation and lead to a loss of trust

**Missed Opportunities:** The business could miss out on opportunities for technological advancements that could improve efficiency, reduce costs, and enhance competitive advantage

In summary, not proceeding with the CAPEX lifecycle project could have far-reaching implications across various aspects of the business, from operational efficiency to financial stability and stakeholder relations. It is essential to consider these factors when making a decision about the project's future.

#### Project Alternatives:

Lifecycle as a program has few, if any, viable alternatives. Equipment will age, become unsupportable and eventually break down, so a replacement strategy must exist.

#### Basis for Project Estimates

The estimates for the project were done based on the framework agreement prices we have with HP and Dell for the end users devices. We also considered the number of end-user devices to lifecycle during the year. In addition, we considered a 15% of increase for organic growth for employees and contractors.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020 | 2021 | 2022     | 2023     | 2024     |  |  |
|------------------------|-----------------|------|------|----------|----------|----------|--|--|
| # AFUDC                | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| # CIAC                 | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| # External Services    | \$ 6,301        | \$ - | \$ - | \$ 2,357 | \$ 1,613 | \$ 2,330 |  |  |
| # Internal - Non-AC    | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| # Internal, Labor      | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| # Internal, Overheads  | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| # Materials            | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| # Overheads - External | \$ -            | \$ - | \$ - | \$ -     | \$ -     | \$ -     |  |  |
| <b>Total</b>           | <b>\$ 6,301</b> | \$ - | \$ - | \$ 2,357 | \$ 1,613 | \$ 2,330 |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 10,545        | \$ 1,238        | \$ 2,558        | \$ 1,839        | \$ 1,009        | \$ 1,844        | \$ 1,005        | \$ 1,051        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 10,545</b> | <b>\$ 1,238</b> | <b>\$ 2,558</b> | <b>\$ 1,839</b> | <b>\$ 1,009</b> | <b>\$ 1,844</b> | <b>\$ 1,005</b> | <b>\$ 1,051</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## AGR - IOC-Microsoft Deployment LC - NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                     |                                              |                                    |
|-------------------------------------------------|-----------------------------------------------------|-------------------------------------|----------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>UW-IT001-NYSEG-CM             | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions. Costs associated with the renewal of the contracts are capitalized in the first year of the contract.

#### Project Scope:

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions. These are now able to be capitalized and are managed in the SAP RE Module. Costs associated with the renewal of the contracts are capitalized in the first year of the contract.

#### Project Benefits:

NYSEG is now capitalizing the cost of SW Cloud-based Subscriptions. These are now able to be capitalized and are managed in the SAP RE Module. These costs were historically OPEX so there is a reduction to operating costs.

#### Project Risks and Mitigation Plan:

This project includes all the Microsoft licenses for users (Windows, Outlook, Teams, SharePoint) and servers (Windows Server, Microsoft Hyper-Virtualization, SQL Databases). There is no risk or mitigation plan per se, as this project is focused on the capitalization of these licenses.

#### Risk of No Action:

Risk of no action will be to migrate all Avangrid computers to non Microsoft operating systems and products.

#### Project Alternatives:

There are open-source alternatives, but they are not recommended for corporate deployment.

#### Basis for Project Estimates

Cost is estimated based on the current Enterprise Agreement with Microsoft and the number of licenses required.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021            | 2022        | 2023        | 2024        |  |  |
|------------------------|-----------------|-------------|-----------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ 1,006        | \$ -        | \$ 1,006        | \$ 0        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 1,006</b> | <b>\$ -</b> | <b>\$ 1,006</b> | <b>\$ 0</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026     | 2027 | 2028     | 2029 | 2030 | 2031     |
|------------------------|-----------------|------|----------|------|----------|------|------|----------|
| # AFUDC                | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| # CIAC                 | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| # External Services    | \$ 6,029        | \$ - | \$ 1,698 | \$ - | \$ 2,598 | \$ - | \$ - | \$ 1,732 |
| # Internal - Non-AC    | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| # Internal, Labor      | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| # Internal, Overheads  | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| # Materials            | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| # Overheads - External | \$ -            | \$ - | \$ -     | \$ - | \$ -     | \$ - | \$ - | \$ -     |
| <b>Total</b>           | <b>\$ 6,029</b> | \$ - | \$ 1,698 | \$ - | \$ 2,598 | \$ - | \$ - | \$ 1,732 |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR - IOC-WINTEL LC-NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>UW-IT348-NYSEG-CM             | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program entails refreshing Company Wintel infrastructure following the five-year refresh lifecycle defined for these companies. Wintel infrastructure includes primarily servers, chassis, and server blades. This infrastructure primarily hosts applications and Structured Query Language (SQL) databases. This will provide Wintel Infrastructure that supports the company's organic growth.

#### Project Scope:

Continued refresh at least 20% of all Wintel Server infrastructure per year (five year life cycle). Project includes also as scope to support company new Server, computer needs and growth

#### Project Benefits:

This project ensures Wintel company infrastructure operates under support of Wintel, with hardware within the defined lifecycle period for this technology. This minimizes the risk of hardware failures that may lead to applications outages and data loss. The project seeks to avoid service disruptions by refreshing aging hardware.

Replacing aged equipment with new Wintel equipment avoids application performance issues or service disruptions. New devices also provide higher performance and capabilities for a better application performance.

Additionally, this program supplies new devices and equipment as necessary to follow company growth.

#### Project Risks and Mitigation Plan:

Delays in the replacement of legacy Wintel infrastructure will cause productivity issues and/or unexpected outages due to the obsolescence of the equipment.

The mitigation plan is to closely coordinate the lifecycle with different business areas, application teams, and users to ensure these devices are replaced on time without impacting the daily operations of the company. Thorough testing and validation before deployment can help identify and resolve any integration issues with the existing IT applications and systems. Careful planning and scheduling of lifecycle activities outside of business hours or during low-impact windows, along with clear communication with stakeholders, can help minimize these disruptions and ensure a timely replacement of the legacy systems

#### Risk of No Action:

Not taking action can lead to hardware failures, increase the vulnerability of our systems, operational inefficiencies and compliance issues. Legacy systems have lower performance than updated systems, therefore this inefficiency can impact the overall performance of the whole systems. Also, legacy systems don't get updates and security patches, increasing the potential risk of security incidents and systems malfunction. If we can't keep our systems updated, we may not comply with the required security standards and regulations leading to compliance fines.

#### Project Alternatives:

Lifecycle as a program has few, if any, viable alternatives. Equipment will age, become unsupportable and eventually break down, so a replacement strategy must exist.

#### Basis for Project Estimates

The estimates were based on the FA we have in place with Dell and budgetary quotes from our partners for the replacement of the devices that need to be refreshed as part of the lifecycle project. These quotes provided a preliminary cost assessment, taking into account the current market prices and the specific requirements of our infrastructure.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021          | 2022            | 2023            | 2024          |  |  |
|------------------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|--|--|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # External Services    | \$ 4,683        | \$ 414        | \$ 521        | \$ 1,633        | \$ 1,138        | \$ 977        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 4,683</b> | <b>\$ 414</b> | <b>\$ 521</b> | <b>\$ 1,633</b> | <b>\$ 1,138</b> | <b>\$ 977</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 1,692        | \$ 839        | \$ 853        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Materials            | \$ 4,498        | \$ -          | \$ -          | \$ 868        | \$ 882        | \$ 899        | \$ 908        | \$ 941        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 6,191</b> | <b>\$ 839</b> | <b>\$ 853</b> | <b>\$ 868</b> | <b>\$ 882</b> | <b>\$ 899</b> | <b>\$ 908</b> | <b>\$ 941</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR - IOC-UNIX LC-NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>UW-IT346-NYSEG-CM             | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

This program entails refreshing Company's Unix equipment following the five-year refresh lifecycle defined for the Company. Unix equipment include primarily IBM AIX Frames and HMC controllers. This project also provides UNIX equipment in support to company growth

#### Project Scope:

Continued refresh at least 20% of all Unix infrastructure per year (five year life cycle).Project includes also as scope to support company new Unix needs and growth

#### Project Benefits:

This project ensures UNIX company infrastructure runs under support, with hardware within the defined lifecycle period for this technology. This minimizes the risk of hardware failures that may lead to applications outages. The project seeks to avoid service disruptions due to aged hardware not properly working.

Replacing aged equipment with new Unix equipment avoids application performance issues or service disruptions. New devices also provide higher performance and capabilities for a better application performance.

Additionally, this program supplies new devices and equipment as necessary to follow company growth.

#### Project Risks and Mitigation Plan:

Delays in the replacement of legacy Unix infrastructure will cause productivity issues and/or unexpected outages due to the obsolescence of the equipment.

The mitigation plan is to closely coordinate the lifecycle with different business areas, application teams, and users to ensure these devices are replaced on time without impacting the daily operations of the company. Thorough testing and validation before deployment can help identify and resolve any integration issues with the existing IT applications and systems. Careful planning and scheduling of lifecycle activities outside of business hours or during low-impact windows, along with clear communication with stakeholders, can help minimize these disruptions and ensure a timely replacement of the legacy systems

#### Risk of No Action:

Not taking action can lead to hardware failures, increase the vulnerability of our systems, operational inefficiencies and compliance issues. Legacy systems have lower performance than updated systems, therefore this inefficiency can impact the overall performance of the whole systems. Also, legacy systems don't get updates and security patches, increasing the potential risk of security incidents and systems malfunction. If we can't keep our systems updated, we may not comply with the required security standards and regulations leading to compliance fines.

#### Project Alternatives:

Lifecycle as a program has few, if any, viable alternatives. Equipment will age, become unsupportable and eventually break down, so a replacement strategy must exist.

#### Basis for Project Estimates

The estimates were based on budgetary quotes from IBM and other vendors for the replacement of the devices that need to be refreshed as part of the lifecycle project. These quotes provided a preliminary cost assessment, taking into account the current market prices and the specific requirements of our infrastructure.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021            | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|---------------|-----------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ 2,698        | \$ 827        | \$ 1,118        | \$ 460        | \$ 162        | \$ 132        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 2,698</b> | <b>\$ 827</b> | <b>\$ 1,118</b> | <b>\$ 460</b> | <b>\$ 162</b> | <b>\$ 132</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027          | 2028          | 2029            | 2030            | 2031            |
|------------------------|-----------------|---------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 2,065        | \$ 925        | \$ 1,140        | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ 4,777        | \$ -          | \$ -            | \$ 980        | \$ 396        | \$ 1,049        | \$ 1,060        | \$ 1,291        |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 6,842</b> | <b>\$ 925</b> | <b>\$ 1,140</b> | <b>\$ 980</b> | <b>\$ 396</b> | <b>\$ 1,049</b> | <b>\$ 1,060</b> | <b>\$ 1,291</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |

## AGR - IOC-STORAGE LC-NYSEG

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG                           | <b>Project ID:</b><br>UW-IT347-NYSEG-CM             | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The overall goal of this project is to refresh all data storage equipment following the five-year refresh lifecycle defined for the Company. Storage equipment include primarily storage virtual switches, Storage Area Network (SAN) directors and switches, storage arrays, file storage, and backup units.

This storage will be used to provide data storage capabilities to the company applications, and company data network shared drivers. It included the hardware required to ensure company data is correctly stored and backed up, allowing data recovery when necessary

#### Project Scope:

Continued refresh at least 20% of all storage infrastructure per year (five year life cycle). Project includes also as scope to support company new storage needs and growth

#### Project Benefits:

This project ensures Storage infrastructure remains under support, with hardware in the defined lifecycle period for this technology. This minimizes the risk of hardware failures that may lead to application outages and data loss. The project seeks to avoid service disruptions due to aged hardware not properly working.

Replacing aged equipment with new storage equipment avoids application performance issues or service disruptions. New devices also provide higher performance and capabilities for a better application performance.

Another benefit of this project is the refresh and growth of company data backup infrastructure, including data protection. This allows data to be restored from an earlier point in time to help the business recover from an unplanned event. Storing the copy of the data on separate mediums is critical to protect against primary data loss or corruption.

Additionally, this program supplies new devices and equipment as necessary to follow company growth.

#### Project Risks and Mitigation Plan:

Delays in the replacement of legacy Storage infrastructure will cause productivity issues and/or unexpected outages due to the obsolescence of the equipment and the capacity of the Storage to absorb increasing data.

The mitigation plan is to closely coordinate the lifecycle with different business areas, application teams, and users to ensure these devices are replaced on time without impacting the daily operations of the company. Thorough testing and validation before deployment can help identify and resolve any integration issues with the existing IT applications and systems. Careful planning and scheduling of lifecycle activities outside of business hours or during low-impact windows, along with clear communication with stakeholders, can help minimize these disruptions and ensure a timely replacement of the legacy systems

#### Risk of No Action:

Not taking action can lead to hardware failures, increase the vulnerability of our systems, operational inefficiencies and compliance issues. Legacy systems have lower performance than updated systems, therefore this inefficiency can impact the overall performance of the whole systems. Also, legacy systems don't get updates and security patches, increasing the potential risk of security incidents and systems malfunction. If we can't keep our systems updated, we may not comply with the required security standards and regulations leading to compliance fines. Lastly, legacy Storage systems may not be as efficient as the new systems in terms of data capacity, meaning higher costs to maintain enough Storage capacity to respond to the business needs and the compliance data retention policies.

#### Project Alternatives:

Lifecycle as a program has few, if any, viable alternatives. Equipment will age, become unsupportable and eventually break down, so a replacement strategy must exist.

#### Basis for Project Estimates

The estimates were based on budgetary quotes from IBM, Dell and NetApp for the replacement of the devices that need to be refreshed as part of the lifecycle project. These quotes provided a preliminary cost assessment, taking into account the current market prices and the specific requirements of our infrastructure.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ 2,428        | \$ 807        | \$ 704        | \$ 415        | \$ 121        | \$ 381        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 2,428</b> | <b>\$ 807</b> | <b>\$ 704</b> | <b>\$ 415</b> | <b>\$ 121</b> | <b>\$ 381</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 1,463        | \$ 724        | \$ 739        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Materials            | \$ 3,951        | \$ -          | \$ -          | \$ 755        | \$ 771        | \$ 790        | \$ 798        | \$ 838        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 5,414</b> | <b>\$ 724</b> | <b>\$ 739</b> | <b>\$ 755</b> | <b>\$ 771</b> | <b>\$ 790</b> | <b>\$ 798</b> | <b>\$ 838</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

**AGR-TAS-25-PAT-SYSMNG\_ControlM\_EV-NYSEG****PROJECT INFORMATION**

|                                                           |                                                     |                                        |                                            |                                      |
|-----------------------------------------------------------|-----------------------------------------------------|----------------------------------------|--------------------------------------------|--------------------------------------|
| <b>OpCo:</b><br>New York State Electric & Gas Corporation | <b>Project ID:</b><br>PRJ-006044                    | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Sameem, Ishreth | <b>Project Type:</b><br>Project      |
| <b>Business Area:</b><br>Information Technology           | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>3/31/2029            | <b>In-Service Date:</b><br>3/31/2029 |

**Project description:**

This project will migrate all current production automation jobs from the current scheduling softwares of UC4 (for CT & MA companies) and Autosys (NY & ME companies) to a common platform. The current platforms are on prem and will be moved to Control-M which is in the private Microsoft Azure Cloud. There is a requirement for consolidating the current tools and also migrating to the Cloud as SAP and other applications are scheduled to move to the Cloud.

**Project Scope:**

The scope for this project is all network operating companies, and all batch scheduled jobs.

**Project Benefits:**

The benefits include standardizing the scheduling tools across all networks operating companies, providing optimization and consolidation of the tools, and providing redundancy and high availability. There will be reduction of the data transmission from on-Prem to the Cloud, as well as a reduction of the on prem footprint.

**Project Risks and Mitigation Plan:**

Project risks are in the scheduler jobs migration to the new tool due to resource constraint from the different stakeholders for converting, testing and validating the jobs in the new tool. Some jobs may require development work and customization which may increase the time to complete the migration.

Plan to mitigate these risks:

- Resource Allocation: Ensure that there is a dedicated team for the migration project. This team should include representatives from all relevant stakeholders to facilitate smooth communication and coordination. Regular meetings and updates can help keep everyone on the same page and address any issues promptly.
- Detailed Planning: Develop a comprehensive migration plan that outlines all the steps involved in the migration process, including converting, testing, and validating the jobs. This plan should also include timelines, milestones, and deadlines to ensure that the project stays on track.
- Risk Assessment and Management: Conduct a thorough risk assessment to identify potential issues that could arise during the migration process. Develop contingency plans to address these risks and ensure that there are resources available to handle any unexpected challenges.
- Testing and Validation: Implement a robust testing and validation process to ensure that the migrated jobs function correctly in the new tool. This process should include unit testing, integration testing, and user acceptance testing to identify and resolve any issues before the final migration.
- Development and Customization: For jobs that require development work and customization, allocate additional time and resources to ensure that these tasks are completed successfully. This may involve working closely with developers and other technical experts to address any challenges that arise during the customization process.
- Continuous Monitoring and Feedback: Establish a system for continuous monitoring and feedback throughout the migration process. This can help identify any issues early on and allow for timely adjustments to the migration plan as needed.

By implementing these strategies, the risks associated with the scheduler jobs migration can be effectively mitigated, ensuring a smooth and successful transition to the new tool.

**Risk of No Action:**

Accepting Price Increases from Current Scheduler Software Vendors: While accepting price increases from the current scheduler software vendors may seem like a short-term solution, it is essential to evaluate the long-term benefits and drawbacks. The increased costs may not justify the continued use of outdated or inefficient tools, especially if they lack the necessary features and automation capabilities.

Inefficiencies Due to Maintaining Two Separate Tools: Using two separate tools for the same purpose can lead to significant inefficiencies. It requires additional resources to manage and maintain both tools, leading to increased operational costs and complexity. Consolidating all jobs into a single, more efficient scheduler tool can streamline operations and reduce these inefficiencies.

Limited Automation Features: The current scheduler tools have limited automation features, resulting in more manual work and a higher likelihood of human errors. By migrating to a new scheduler tool with advanced automation capabilities, the organization can reduce manual intervention, minimize errors, and improve overall efficiency.

Facilitating Future S/HANA Migration: Consolidating all jobs into the new scheduler tool will also facilitate the future S/HANA migration. If the jobs are not consolidated beforehand, this task will have to be completed as part of the S/HANA project, adding more tasks and increasing the potential for delays. By addressing the job consolidation now, the organization can ensure a smoother and more efficient S/HANA migration process.

**Project Alternatives:**

Broadcom has changed the pricing model and there is a significant increase in the licensing cost.

Control-M is the choice of tool by the Architecture team, and there are global FA that allows for better pricing negotiation. So there are no other alternatives than continue with the current solution and accept the licensing cost increase plus the inefficiencies of maintaining 2 different tools for the same purpose.

**Basis for Project Estimates**

The estimates were based on the FA we have in place with BMC and budgetary quotes from previous projects with similar scope. These quotes provided a preliminary cost assessment, taking into account the current market prices and the specific requirements of our infrastructure.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2021        | 2022        | 2023        | 2024        | 2025          |  |  |
|------------------------|---------------|-------------|-------------|-------------|-------------|---------------|--|--|
| # AFUDC                | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1          |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # External Services    | \$ 859        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 859        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 861</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 861</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2021 | 2022 | 2023 | 2024 | 2025 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total         | 2026        | 2027        | 2028          | 2029        | 2030        |             |             |
|------------------------|---------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| # External Services    | \$ 283        | \$ -        | \$ -        | \$ 283        | \$ -        | \$ -        |             |             |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -          | \$ -        | \$ -        |             |             |
| <b>Total</b>           | <b>\$ 283</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 283</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



# **RG&E Common Information Technology**

## Client Project Requests and Integration Projects - RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                               |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|-----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>9302-3194-1480-RGE-C          | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Santacoloma, Asier | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                 | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The program is for business initiatives identified by the Network's business areas for future projects. RGE has a process of identifying the technology needs of the business, gathering information, vetting the project list and prioritizing based on need, business value and resource availability. The Project Demand Planning cycle runs annually and involves collating the requirements across all business areas for projects requiring IT expenditure. Projects are prioritized by the Vice Presidents in each business area before completing the estimation and capacity planning process.

#### Project Scope:

Business initiatives identified by the Network's business areas for future efficiency projects. Annually, as the business areas define the projects requiring IT expenditure, the annual budgets for those identified projects are built from this project's budget.

#### Project Benefits:

The various Avangrid Networks business areas identify initiatives annually which require IT support. This identification happens during each area's planning cycle. This project allows the flexibility to allocate the annual budget to the area(s) of greatest need and priority which is not known until after each area completes their estimation processes.

#### Project Risks and Mitigation Plan:

The exact projects which will be identified each year as requiring IT expenditures is unknown. Therefore, it is not possible to assign a risk or mitigation plan.

#### Risk of No Action:

No new IT application projects will be developed within this PPM project. As the business area projects are identified, new PPM projects will be created and the annual budget transferred from this project to those new projects.

#### Project Alternatives:

Since no new IT application projects will be developed within this PPM project, there are no project alternatives to consider.

#### Basis for Project Estimates

The estimation is based on historical expenditure in IT applications.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028            | 2029            | 2030            | 2031            |
|------------------------|-----------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 7,872        | \$ 346        | \$ 561        | \$ 561        | \$ 1,442        | \$ 1,543        | \$ 1,651        | \$ 1,767        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 7,872</b> | <b>\$ 346</b> | <b>\$ 561</b> | <b>\$ 561</b> | <b>\$ 1,442</b> | <b>\$ 1,543</b> | <b>\$ 1,651</b> | <b>\$ 1,767</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR-NET-23-SG-01-Esri UN Deployment-RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                     |                                           |                                    |
|-------------------------------------------------|-----------------------------------------------------|-------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>PRJ-002849                    | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Garbin, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Oct-2023            | <b>In-Service Date:</b><br>H2 2026 |

#### Project description:

This project will replace the Company's current GIS system with the Utility Network Model (UNM). The existing data model is to be retired by the vendor in 2026. This will change the data model used by the Gas line of business and move to a more modern, utility specific model.

#### Project Scope:

The scope of the project will be to install the new version of GIS and to convert the data to the new Utility Network Model.

#### Project Benefits:

Migration of the current GIS geometric data models to the Utility Network model will prevent obsolescence as the old data model is being retired and replaced by the vendor in 2026. Upgrading will address the end of life and provide RGE with a fully supported solution.

Additional benefits of moving to the UNM include; a rule based engine that supports and enforces higher quality data entry, reduced data latency between enterprise systems due to native service oriented architecture, new branch versioning structure reduces performance impacts of long-running designs and this addresses current GIS software's end-of-life timeline. For Asset Management, a higher fidelity data model enables more granular tracking of real-world assets, such as substation internals, SCADA, and AMI equipment and controllers as well as Gas devices and network assets. Enhanced capabilities for modeling network data with greater detail and real-world representation of connectivity via use of associations. ArcGIS Pro is the new generation professional desktop application from Esri used to manage the GIS gas network with Utility Network Model. This application provides exponential performance improvements in startup, saving, edits and redrawing compared to traditional ArcMap. Enhanced Operations and Field Work through platform-integrated mobile applications supporting common GIS workflows. Inherent information security, with single user identity authorizes platform access across desktop, web, and mobile use cases. The solution has an improved data exchange, with flexible schema and standard export functions by feeder/pressure zone are designed to better support OMS, ADMS and planning solutions. The Utility Network model allows for a programmatically created schematic view of the network.

#### Project Risks and Mitigation Plan:

As Esri is a vital application and the master repository for all RGE assets, it is crucial to address any potential cybersecurity threats and avoid disruptions to our core processes. Therefore, upgrading to the new version is essential.

Maintaining an obsolete system can jeopardize the integrity and reliability of our operations, making it imperative to stay current with the latest Esri version.

#### Risk of No Action:

An obsolete system can jeopardize the integrity and reliability of our operations, potential cybersecurity threats and disruptions to our core processes.

#### Project Alternatives:

Esri as a core application has few, if any, viable alternatives. System will age, become unsupportable and eventually break down, so an upgrade strategy must exist.

#### Basis for Project Estimates

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates to implement the requirements capture under Esri UN Deployment project



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023         | 2024        |  |  |
|------------------------|--------------|-------------|-------------|-------------|--------------|-------------|--|--|
| # AFUDC                | \$ 6         | \$ -        | \$ -        | \$ -        | \$ 1         | \$ 5        |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # External Services    | \$ 72        | \$ -        | \$ -        | \$ -        | \$ 71        | \$ 1        |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -         | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 77</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 71</b> | <b>\$ 6</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026          | 2027            | 2028            | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|---------------|-----------------|-----------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 8,753        | \$ 1,613        | \$ 541        | \$ 3,300        | \$ 3,300        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 8,753</b> | <b>\$ 1,613</b> | <b>\$ 541</b> | <b>\$ 3,300</b> | <b>\$ 3,300</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AWS SW Cloud Subscription - RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                        |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|----------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>PRJ-005660                    | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions.

#### Project Scope:

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions. Costs associated with the renewal of the contracts are capitalized in the first year of the contract.

#### Project Benefits:

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. These are now able to be capitalized are managed in the SAP RE Module. These costs were historically OPEX so there is a reduction to operating costs.

#### Project Risks and Mitigation Plan:

The main risks of this project are related to the applications migration to the Cloud and new deployments:

Cost Overruns: Unexpected costs can arise during the migration process, leading to budget overruns.

Data Transfer and Compatibility Issues: Ensuring that existing infrastructure and applications are compatible with the target cloud environment can be a significant challenge.

Global Cloud model: The current global cloud model lacks of the required flexibility to migrate and deploy applications in AWS Cloud agile, adding more complexities to the migration and increasing time and effort to complete these deployments.

Compliance and Regulatory Challenges: Ensuring that the migration process complies with relevant regulations and standards is essential, especially to ensure our data protection and compliance requirements.

Incompatibility of Existing Architecture: Legacy systems may not be compatible with cloud environments, requiring significant modifications, re-architecting applications or re-factoring the entire application.

Performance Issues: Ensuring that applications perform optimally in the cloud environment can be challenging, especially if there are latency or other performance-related issues.

Mitigation strategies for these risks include thorough planning, selecting the right cloud migration strategy, ensuring compliance with data governance regulations, and having a clear understanding of non-functional requirements before the migration. Working with the Architecture team to ensure the proposed design is within the Cloud homologated services and solutions will make the deployment more agile and avoid the hurdles of homologating a solution during the migration. Applying our FinOps framework to these new deployments will maximize the business value of the cloud, enable timely data-driven decision-making regarding costs, and create financial accountability through collaboration between Cloud and Application teams.

#### Risk of No Action:

The risk of no action includes several factors that could significantly impact our organization's technological and strategy:

Loss of Cloud Technologies Capabilities: By not migrating to the cloud, we miss out on the advanced capabilities and innovations that cloud technologies offer. This includes scalability, flexibility, and access to cutting-edge tools and services that can drive business growth and innovation.

Lack of Modernization of Infrastructure: Staying with on-premises infrastructure means we are not modernizing our IT environment. This can result in slower performance, higher operational costs, and an inability to quickly adapt to changing business requirements. Modernizing our infrastructure through cloud migration can enhance our agility and responsiveness.

Misalignment with Company Strategy for Cloud Adoption: Our company's strategy emphasizes cloud adoption as a key component for future growth and competitiveness. Failing to align with this strategy can lead to a disconnect between our IT capabilities and the overall business objectives. This misalignment can hinder our ability to achieve strategic goals and maintain a competitive edge in the market.

Inefficiencies in Resource Utilization: Cloud environments allow for more efficient use of resources through features like auto-scaling and pay-as-you-go models. Without migrating to the cloud, we may face inefficiencies in resource utilization, leading to higher costs and lower productivity.

Inability to Leverage Data Analytics and AI: Cloud platforms provide powerful tools for data analytics and artificial intelligence (AI) that can drive insights and innovation. By not migrating, we may miss out on opportunities to leverage these technologies to improve decision-making and create new business value.

#### Project Alternatives:

Cloud as subscriptions has few, if any, viable alternatives. The only alternative will be to maintain applications on prem, but this will require to increase our Hardware purchases to maintain the performance of our systems based on the resource capacity.

The estimates were based on the current contract and the expected growth in cloud consumption. These contract prices are part of the global agreement with AWS, which provides us with lower prices than the standard AWS market rates.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028            | 2029        | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-----------------|-------------|-----------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| # External Services    | \$ 7,077        | \$ -        | \$ -        | \$ -        | \$ 1,380        | \$ -        | \$ 5,697        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        | \$ -            | \$ -        |
| <b>Total</b>           | <b>\$ 7,077</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,380</b> | <b>\$ -</b> | <b>\$ 5,697</b> | <b>\$ -</b> |

[illegible]

## GIS Environment SW Cloud Subscriptions - RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                        |                                           |                                    |
|-------------------------------------------------|-----------------------------------------------------|----------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>PRJ-007149                    | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Garbin, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing             | <b>In-Service Date:</b><br>Ongoing |

**Project description:**

This project will collect the cost of RGE's portion of the intangible asset for the subscription of software ESRI and ARCFM that is used to support the asset inventory as Geographical Information System's.

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with the ESRI and ARCFM Subscription renewals. These are now able to be capitalized and are managed in the SAP RE Module.

**Project Scope:**

Software license subscription plus support and maintenance.

**Project Benefits:**

ESRI & Schneider Electric SW Cloud Subscription - RGE

Usage of the software to support the asset inventory as Geographical Information System's for the company Operational team and others.

Subscriptions are now able to be capitalized and are managed in the SAP RE Module. These costs were historically OPEX so there is a reduction to operating costs.

**Project Risks and Mitigation Plan:**

No risk identified.

**Risk of No Action:**

If this investment is not done, the geographical information system solution will be unsupported and not be able to be used.

**Project Alternatives:**

No alternatives were considered at this time. ESRI and ARCFM are the strategic software selected to support the Geographical Information System's needs.

**Basis for Project Estimates**

Historical license cost with inflation adjustment

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026   | 2027 | 2028 | 2029   | 2030 | 2031 |
|------------------------|-----------------|------|--------|------|------|--------|------|------|
| # AFUDC                | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| # CIAC                 | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| # External Services    | \$ 1,693        | \$ - | \$ 822 | \$ - | \$ - | \$ 872 | \$ - | \$ - |
| # Internal - Non-AC    | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| # Internal, Labor      | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| # Internal, Overheads  | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| # Materials            | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| # Overheads - External | \$ -            | \$ - | \$ -   | \$ - | \$ - | \$ -   | \$ - | \$ - |
| <b>Total</b>           | <b>\$ 1,693</b> | \$ - | \$ 822 | \$ - | \$ - | \$ 872 | \$ - | \$ - |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR-NET-24-IT-01-Global S4Hana-RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                           |                                    |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|-------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>PRJ-005079                    | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Garbin, Carlos | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Mar-2024            | <b>In-Service Date:</b><br>H2 2028 |

#### Project description:

The S4/HANA transformation initiative is part of the Avangrid IT strategy, aiming to place technology platforms in a strategic position that enables the business to maximize digitalization, innovation and growth in an agile and efficient way.

#### Project Scope:

Avangrid Networks is willing to develop a Digital Transformation project taking advantage of the evolution of the current SAP platform to the newer S4HANA, based on the following guiding principles: **USER EXPERIENCE:** Seating people in the center of this transformation. Understanding the issues and pain points they challenge and defining innovative solutions that improve the experience in the new system. Maximizing user satisfaction and minimizing the effort within the new process. **PROCESS TRANSFORMATION:** Using technology as an opportunity to analyze and adapt the business processes. Challenging the requirements or existing processes, to keep a simple and standardized solution. Defining realistic transformation goals. **SIMPLE SOLUTION:** Keeping solution simplicity as a designing principle. Maximizing the usage of the capabilities of the new SAP platform. Challenging the need to adapt the solution and build a business case for every solution that is not aligned with SAP standards.

#### Project Benefits:

As per SAP product roadmap, current version will not be supported after 2027, extra cost will be needed if Avangrid extend the support until 2030. SAP is a key application to and must be supported by vendor to mitigate any interruption on our core process.

#### Project Risks and Mitigation Plan:

As SAP is a vital application and the master repository for all RGE assets, it is crucial to address any potential cybersecurity threats and avoid disruptions to our core processes. Therefore, upgrading to the new version is essential.

Maintaining an obsolete system can jeopardize the integrity and reliability of our operations, making it imperative to stay current with the latest SAP version.

#### Risk of No Action:

An obsolete system can jeopardize the integrity and reliability of our operations, potential cybersecurity threats and disruptions to our core processes.

#### Project Alternatives:

SAP as a core application has few, if any, viable alternatives. System will age, become unsupportable and eventually break down, so an upgrade strategy must exist.

#### Basis for Project Estimates

Estimates are based on the expected costs of contracted and internal labor at assumed hourly rates to implement the user stories capture under blueprint phase

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ 0         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 0         |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ 45        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 45        |  |  |
| # Internal - Non-AC    | \$ 1         | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 46</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 46</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027            | 2028          | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-----------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 5,335        | \$ 1,014        | \$ 1,786        | \$ 1,926        | \$ 609        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 5,335</b> | <b>\$ 1,014</b> | <b>\$ 1,786</b> | <b>\$ 1,926</b> | <b>\$ 609</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR - IOC-NET-END USER LC-RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                                |                                              |                                        |
|-------------------------------------------------|-----------------------------------------------------|------------------------------------------------|----------------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>PRJ-001808                    | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The overall goal of this project is to refresh Company's computing devices following the refresh lifecycle defined for this technology (four years) for users in scope. This project also provides personal computers (PC) in support of new hires and refresh demand requirements enterprise wide.

#### Project Scope:

Continued refresh at least 25% of computer environment (four year life cycle) and end user equipment for new employees joining the company

#### Project Benefits:

Replace aged equipment with new PCs to avoid service disruptions due to PCs not working properly due to their age. New computers also provide higher computing capabilities. This project also provides PCs in support of new hires and refresh demand requirements.

#### Project Risks and Mitigation Plan:

Delays in the replacement of the legacy devices causing productivity issues and unexpected outages. The mitigation plan is to have close coordination to ensure users are notified in advance of the lifecycle project, giving them time to prepare and avoiding the need to postpone the lifecycle date.

#### Risk of No Action:

The CAPEX lifecycle project for laptops and monitors is crucial for maintaining the operational efficiency and regulatory compliance of the business. If the project is not executed, the consequences could be significant:

**Operational Impact:** The business could face operational disruptions due to outdated or malfunctioning equipment, leading to decreased productivity and potential loss of business opportunities<sup>12</sup>

**Legal and Regulatory Implications:** There may be fines and penalties for non-compliance with regulatory standards, which could include safety violations or failure to meet industry-specific regulations<sup>12</sup>

**Financial Impact:** Delays or failure to proceed with the project could result in increased costs due to emergency repairs, replacements, and potential fines. The financial impact could also include the loss of stakeholder confidence and a decrease in shareholder value<sup>345</sup>

**Stakeholder Effects:** Customers, shareholders, and local communities could be adversely affected by service interruptions, reduced service quality, and the company's inability to meet its commitments. This could damage the company's reputation and lead to a loss of trust<sup>1267</sup>

**Missed Opportunities:** The business could miss out on opportunities for technological advancements that could improve efficiency, reduce costs, and enhance competitive advantage<sup>12</sup>

In summary, not proceeding with the CAPEX lifecycle project could have far-reaching implications across various aspects of the business, from operational efficiency to financial stability and stakeholder relations. It is essential to consider these factors when making a decision about the project's future.

#### Project Alternatives:

Lifecycle as a program has few, if any, viable alternatives. Equipment will age, become unsupportable and eventually break down, so a replacement strategy must exist.

#### Basis for Project Estimates

The estimates for the project were done based on the framework agreement prices we have with HP and Dell for the end users devices. We also considered the number of end-user devices to lifecycle during the year. In addition, we considered a 15% of increase for organic growth for employees and contractors.

### FINANCIAL INFORMATION



**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020 | 2021 | 2022   | 2023     | 2024     |  |  |
|------------------------|-----------------|------|------|--------|----------|----------|--|--|
| # AFUDC                | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| # CIAC                 | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| # External Services    | \$ 3,459        | \$ - | \$ - | \$ 993 | \$ 1,157 | \$ 1,309 |  |  |
| # Internal - Non-AC    | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| # Internal, Labor      | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| # Internal, Overheads  | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| # Materials            | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| # Overheads - External | \$ -            | \$ - | \$ - | \$ -   | \$ -     | \$ -     |  |  |
| <b>Total</b>           | <b>\$ 3,459</b> | \$ - | \$ - | \$ 993 | \$ 1,157 | \$ 1,309 |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 5,118        | \$ 923        | \$ 885        | \$ 921        | \$ 543        | \$ 707        | \$ 557        | \$ 581        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 5,118</b> | <b>\$ 923</b> | <b>\$ 885</b> | <b>\$ 921</b> | <b>\$ 543</b> | <b>\$ 707</b> | <b>\$ 557</b> | <b>\$ 581</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## AGR - IOC-Microsoft Deployment LC - RGE

### PROJECT INFORMATION

|                                                 |                                                     |                                     |                                              |                                    |
|-------------------------------------------------|-----------------------------------------------------|-------------------------------------|----------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                            | <b>Project ID:</b><br>UW-IT001-RGE-CM               | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b><br>Anton Saenz, Unai | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Information Technology | <b>Rate Case Category</b><br>Information Technology | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Ongoing                | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions.

#### Project Scope:

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. This project is required to collect budget and costs associated with IT Applications area SW Cloud Subscriptions. These are now able to be capitalized and are managed in the SAP RE Module. Costs associated with the renewal of the contracts are capitalized in the first year of the contract.

#### Project Benefits:

RGE is now capitalizing the cost of SW Cloud-based Subscriptions. These are now able to be capitalized and are managed in the SAP RE Module. These costs were historically OPEX so there is a reduction to operating costs.

#### Project Risks and Mitigation Plan:

This project includes all the Microsoft licenses for users (Windows, Outlook, Teams, SharePoint) and servers (Windows Server, Microsoft Hyper-Virtualization, SQL Databases). There is no risk or mitigation plan per se, as this project is focused on the capitalization of these licenses.

#### Risk of No Action:

Risk of no action will be to migrate all Avangrid computers to non Microsoft operating systems and products.

#### Project Alternatives:

There are open-source alternatives, but they are not recommended for corporate deployment.

#### Basis for Project Estimates

Cost is estimated based on the current Enterprise Agreement with Microsoft and the number of licenses required.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021          | 2022        | 2023        | 2024        |  |  |
|------------------------|---------------|-------------|---------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ 683        | \$ -        | \$ 683        | \$ 0        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -          | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ 683</b> | <b>\$ -</b> | <b>\$ 683</b> | <b>\$ 0</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026          | 2027        | 2028            | 2029        | 2030        | 2031          |
|------------------------|-----------------|-------------|---------------|-------------|-----------------|-------------|-------------|---------------|
| # AFUDC                | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| # External Services    | \$ 3,064        | \$ -        | \$ 863        | \$ -        | \$ 1,321        | \$ -        | \$ -        | \$ 880        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| # Internal, Labor      | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| # Materials            | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| # Overheads - External | \$ -            | \$ -        | \$ -          | \$ -        | \$ -            | \$ -        | \$ -        | \$ -          |
| <b>Total</b>           | <b>\$ 3,064</b> | <b>\$ -</b> | <b>\$ 863</b> | <b>\$ -</b> | <b>\$ 1,321</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 880</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **NSYEG Common Operational Smart Grids**

## NYSEG ECC Life cycle

### PROJECT INFORMATION

|                                 |                                         |                                       |                                    |                                     |
|---------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>UI-I3057-NYSEG-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Lifecycle technical refresh and replacement of SCADA front-end hardware/software. The NY Spectrum system enhancements consist of SCADA, TNA, and Software upgrade work. The continued build-out of these systems is critical to realizing their full benefits and efficiencies. This is the NYSEG portion. The project focuses on the lifecycle technical refresh and replacement of the SCADA (System Control and Data Acquisition) front-end hardware and software systems. This initiative includes significant enhancements to the NY Spectrum system, explicitly targeting upgrades to SCADA, TNA (Transmission Network Analysis), and related software components.

The primary goal of these enhancements is to facilitate continued development and modernization of these systems, which are crucial for maximizing their operational benefits and efficiencies. Particular attention will be given to improving functionalities related to Critical Infrastructure Protection (CIP) and compliance with the Northeast Power Coordinating Council (NPCC) standards.

The upgrades aim to enhance system reliability while meeting the New York Independent System Operator (NYISO) and NPCC compliance requirements. This project focuses on the NYSEG segment, reinforcing the commitment to maintaining robust, efficient, and compliant operational capabilities within the region's energy landscape

#### Project Scope:

The program will continue by replacing as many of the 150 QEI RTU parts (TRW 9550 to DNP protocol conversion) and EMS front-end equipment replacements that are at the end of life. Additional EMS functionalities development, such as implementing ANM (Active Network Management) in Spectrum, Alarm optimization, and other enhancements, will also make the Spectrum System more reliable. This program focuses on the life cycle management of front-end hardware and enhancing the Energy Management System (EMS). It includes replacing end-of-life equipment for Transmission Network Applications (TNA) and Supervisory Control and Data Acquisition (SCADA). Additionally, the program aims to develop new functionalities within the EMS, optimize alarm systems, and implement other enhancements to improve the reliability of the EMS and provide better situational awareness of the power grid for Energy Control Center (ECC) operators. This initiative enables NYSEG and RGE to achieve a critical system uptime of 99.90% and meet cyber compliance targets.

The program will also upgrade legacy QEI Automation solutions Remote Terminal Units (RTUs) that currently use a serial bit-oriented TRW9550 protocol to the standardized DNP protocol. This transition enhances the reliability of the RTUs and allows for routable communication paths, which helps mitigate false alarms. Several components in the NYSEG EMS front ends require life cycling, including DNP serial to IP DNP converters (LANRAN), port switches (SEL 3610) for DNP IP bulk station RTU buffering to the EMS system (which prevents direct external IP connectivity to the EMS servers), converters (9 pins to 25 pins and vice versa), cables, Modem Sharing Device (MSD) cards that allow multiple server connectivity, legacy bit-oriented serial protocol (TRW9550) to IP converters (B-COM), and data concentrators (TELVENT) that aggregate several small remote devices into one. Protocol analyzers and RTU testing devices will also be utilized for commissioning and verification.

To enhance redundancy and resiliency, the program provides improved solutions to withstand power and network failures of critical servers. Changes will be made to the Tabular Operational Display (Data Explorer) and the RTU Tabular Display (RTU Explorer) for better device filtering and quicker operations. Operator Training Simulator changes will allow the simulation of various real-time system events, including different incoming alarms. The addition of new elements will facilitate the automation of new devices; as these devices are implemented to improve the stability and reliability of the network, the EMS vendor needs to update the configuration to include any new alarms and control points that operators will need to manage these devices safely. This will involve the implementation of Logical Active Network Management.

#### Project Benefits:

1. Enhanced System Performance: Upgrading the Energy Management System (EMS) will significantly improve the performance and reliability of critical applications, ensuring that the Transmission Network Applications (TNA) and SCADA systems operate efficiently. The risk of system failures is reduced, contributing to a higher overall system uptime goal of 99.90%.
2. Advanced Communication Protocols: Transitioning legacy QEI Automation RTUs to the DNP (Distributed Network Protocol) enhances device communication and interoperability, improving data accuracy and system responsiveness.
3. Optimized Alarm Systems: Reducing false alarms through improved communication will lead to better situational awareness, allowing operators to respond more effectively to real issues.
4. Optimized Alarm Systems & Displays: Reducing false alarms through improved communication will lead to better situational awareness, allowing operators to respond more effectively to real issues. Revising the Tabular Operational Display and RTU Tabular Display will streamline information presentation, making it easier for operators to monitor and manage the system.
5. Enhanced Operator Training: Updating the Operator Training Simulator with real-time event simulations will equip Energy Control Center (ECC) operators with the necessary skills to handle operational challenges effectively.
6. Regulatory Compliance: The initiative addresses compliance with NYISO and NYPSC regulations, helping to avoid potential financial penalties and audits related to non-compliance.
7. Influence on Key Metrics: Improvements in system performance will positively impact important reliability metrics like SAIFI (System Average Interruption Frequency Index), SAIDI (System Average Interruption Duration Index), and CAIDI (Customer Average Interruption Duration Index). These benefits collectively contribute to a more robust, efficient, and responsive energy management system that aligns with regulatory standards and operational goals.

**Project Risks and Mitigation Plan:**

Description: End-of-life equipment may fail during the transition to new systems, leading to disruption in service and decreased system reliability.

Mitigation Plan: We will immediately return to using existing equipment until new systems are fully operational.

**2. Risk: Integration Challenges:**

Description: Integrating upgraded SCADA and EMS systems with existing infrastructure could lead to compatibility issues (Space, Network, communications).

Mitigation Plan: Conduct thorough compatibility testing before deployment and engage Other departments and vendor support for system integration. Implement phased rollouts to mitigate risks.

**3. Risk: Compliance Issues**

Description: Failure to meet NYISO or NPCC compliance requirements during implementation could result in penalties.

Mitigation Plan: Establish a compliance monitoring team to continuously review project developments against compliance standards throughout the implementation phase.

By proactively addressing these risks through comprehensive planning and robust mitigation strategies, the project aims to enhance the reliability and efficiency of the Energy Management System while achieving critical performance targets.

**Risk of No Action:**

1. Decreased System Performance: Without the proposed upgrades to the Energy Management System (EMS), the performance and reliability of critical applications will remain suboptimal. This could lead to increased system failures, significantly undermining the goal of achieving 99.90% system uptime and ultimately affecting service delivery and operational efficiency.

2. Inefficient Communication Protocols: Failing to transition the legacy QEI Automation RTUs to the DNP (Distributed Network Protocol) would result in continued device interoperability issues. This lack of modernization can lead to outdated communication methods, causing delays, miscommunications, and data collection and transmission errors, ultimately compromising system responsiveness.

3. Increased False Alarms: Operators may experience more false alarms without optimizing alarm systems. This could dilute situational awareness and lead to inefficient resource allocation, as operators might spend excessive time addressing non-critical alerts instead of focusing on genuine operational issues.

4. Compliance Risks: Inaction could lead to non-compliance with NYISO and NYPSC regulations, exposing the organization to potential financial penalties, regulatory audits, and reputational damage. These risks could strain resources and divert attention from core operational objectives.

5. Negative Impact on Reliability Metrics and Company Overall: The absence of performance improvements may adversely affect key reliability metrics such as SAIFI, SAIDI, and CAIDI. Poor performance in these areas could lead to increased customer dissatisfaction and higher operational costs, ultimately impacting the organization's standing in the energy sector.

**Project Alternatives:**

1. Incremental Updates: Implement a phased approach where gradual updates are made to the GIS-Spectrum Interface rather than a complete overhaul. This would involve incremental enhancements to address the most critical issues while allowing continuous operation.

2. Implementing a Parallel System: Develop a temporary parallel interface to operate alongside the existing system. This would allow testing and validation of updates without disrupting current operations. Once validated, the new system could replace the old one.

3. Delay Action: Assess the feasibility of maintaining current operations while closely monitoring for critical failures or inefficiencies. However, this alternative may lead to escalated risks and should only be considered if the current system remains stable.

**Basis for Project Estimates**

- QEI RTU upgrade: 50 QEI RTUs will be upgraded by converting the protocol from TRW 9550 to DNP, enhancing their reliability. The average cost for each migration is \$12,050.2, leading to a total cost of \$602,510.

- EMS Front End component replacement: \$45,000.

- SIEMENS Enhancements: These developments will be carried out through the existing MSA with Siemens, which covers 1,500 hours per year for scheduled services, amounting to an annual cost of \$331,500 for all OpCos. NYSEG's portion of this cost is \$152,490.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021          | 2022          | 2023          | 2024          |  |  |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|--|--|
| # AFUDC                | \$ 679          | \$ 109        | \$ 132        | \$ 125        | \$ 148        | \$ 165        |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # External Services    | \$ 2,375        | \$ 358        | \$ 584        | \$ 231        | \$ 675        | \$ 526        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ 101          | \$ 80         | \$ 20         | \$ -          | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 3,155</b> | <b>\$ 548</b> | <b>\$ 737</b> | <b>\$ 356</b> | <b>\$ 823</b> | <b>\$ 690</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ 280          | \$ 48         | \$ 50         | \$ 36         | \$ 36         | \$ 36         | \$ 37         | \$ 37         |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 2,836        | \$ 600        | \$ 658        | \$ 450        | \$ 260        | \$ 270        | \$ 289        | \$ 309        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ 108          | \$ 36         | \$ 12         | \$ 12         | \$ 12         | \$ 12         | \$ 12         | \$ 12         |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Materials            | \$ 376          | \$ 116        | \$ 50         | \$ 42         | \$ 42         | \$ 42         | \$ 42         | \$ 42         |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 3,600</b> | <b>\$ 800</b> | <b>\$ 770</b> | <b>\$ 540</b> | <b>\$ 350</b> | <b>\$ 360</b> | <b>\$ 380</b> | <b>\$ 400</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG OMS Alignment Spectrum

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-003628 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

This project will focus on streamlining Outage Management System (OMS) functionality and integration across all systems. This includes integration with Mobility, Automated Meter Infrastructure (AMI), Work Force Management (WFM), Damages Assessment (DA), and the Outage Management System. This will enable the use of the same OMS platform across NY Operating Companies. High priority work began in 2024 and will continue, with focus on implementing mobility related work, AMI updates, improving the customer and Geographic Information System (GIS) data detail available to the OMS, and in designing/specifying work for Work Force Management (WFM) and DA. The implementation of all work and associated refinements will be a focus to improve the overall functionality, maintenance, and stability of the OMS in the coming years which will further improve the Customer experience, and reliability and safety for operations.

#### Project Scope:

1. Confirm the differences between operating company specific Outage Management System requirements and the Siemens OMS implementation and the new mobility solution implemented in Avangrid.
2. Define functional and technical designs/specifications for Mobility, AMI, WFM, Damage Assessment (DA), Customer and Geographic Information System (GIS) device detail, and other areas as needed. This work has been an ongoing effort and will continue to be a focus in the coming years to improve the overall management of outages and situational awareness.
3. Develop solutions for Mobility, AMI, WFM, Damages and other areas based on the functional and technical designs/specifications. This will include software implementations as well as hardware, cyber security and licensing (if needed). The Mobility and AMI solutions have been high priority goals for integration within the OMS and will continue to be going forward along with the WFM, Damages, and other areas as requirements develop.

#### Project Benefits:

This alignment of application solutions and interfaces will allow for common processes across the New York operating companies and business areas within, such as the Energy Control Center and Electric Operations. OSG can leverage resources and reduce license costs by aligning the OMS and improve the maintainability and reliability of the application therefore improving the overall customer experience by providing the customers more timely, accurate outage updates as well as enhancing operational reliability and safety.

#### Project Risks and Mitigation Plan:

Risk: Timely development and testing process. Resource onboarding process and training.

Mitigation Plan:

1. Proper identification and prioritization of OMS alignment improvements
2. Thorough detail design and estimates of important alignment improvements.
3. Use phased in approach to release highest priority
4. Combine related work for a more streamlined and efficient development and testing process.



The OMS alignment is necessary to provide a more reliable and stable Outage Management Solution for the operating companies. The application is necessary for operations to provide a more efficient outage management and restoration process to the customers, and also a safer operations process. If the enhancements are not implemented the customer experience will be impacted negatively as the enhancements planned will improve the accuracy of customer outage communications and the overall restoration process. Also, if the enhancements are not done this will introduce safety and reliability risks to the field personnel because the core OMS processing will be less efficient for the synchronization between the model and actual field states.

The are no project alternatives.

The overall resource requirement for this will be approximately three highly skilled External Full-Time Employees (FTE) equivalents (blended rate of \$105/hr.) and three Internal FTE equivalent (blended rate of \$80/hr.). The external project roles that comprise the FTEs include Sr. Software Engineer(s), a Control Software architect, and a Business Analyst. The internal roles include a Lead Programmer, a Lead Applications Architect, and a Principal Analyst. The Operating Companies breakdown is NYSEG – 75%, RGE 25%.

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028          | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|---------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ 4            | \$ 1          | \$ 1          | \$ 1          | \$ 1          | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 716          | \$ 179        | \$ 179        | \$ 179        | \$ 179        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ 280          | \$ 70         | \$ 70         | \$ 70         | \$ 70         | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,000</b> | <b>\$ 250</b> | <b>\$ 250</b> | <b>\$ 250</b> | <b>\$ 250</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## ECS Infrastructure Firewalls NYSEG

### PROJECT INFORMATION

|                                 |                                         |                                       |                                    |                                     |
|---------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>UI-N5287-NYSEG-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

The Energy Control Systems (ECS) Protection Systems Lifecycle program includes all of the Equipment and Applications that are approaching obsolescence that need to be replaced or renewed across the Energy Control Systems including the Detection and Response Tools. The ECSProtection Systems Lifecycle also includes the identification and purchase of all Firewalls for implementation by Infrastructure to the ECS.

Endpoint Protection: Hardware lifecycle.  
SIEM Equipment Lifecycle and colocation  
Packet Broker (Deduplication and deep packet inspection): Lifecycle  
Cyber Vulnerability Scanning: Lifecycle

#### Project Scope:

The Energy Control Systems Cyber Lifecycle Programs Scope includes the hardware, appliances, subscriptions and support to maintain cyber critical systems. Below is the list of equipment & applications that provide these services for effective security measures. This program ensures that the assets are kept current to realize the reduced risk of failure and support costs that occur when assets reach end of life or support.

Endpoint Protection: Subscription/Hardware lifecycle.  
SIEM - Equipment Lifecycle  
Packet Broker (Deduplication and deep packet inspection): Hardware Lifecycle  
Cyber Vulnerability Scanning: Hardware Lifecycle  
NERC-CIP compliance Tools / Hardware lifecycle

#### Project Benefits:

These improvements are necessary to keep production operational support, security and reliability at appropriate levels required by the demands of high availability of Supervisory Control and Data Acquisition (SCADA) environments. This program allows AVANGRID to lifecycle or technical refresh end of life or out of support that supports the Networks Business in CIP and Non-CIP technology.

#### Project Risks and Mitigation Plan:

Some of the top risks identified for the ECS Protection Systems program are competing projects that are advancing at the same time frame. The biggest of them is the Data Center Move and Data Center Consolidations. These projects are physically moving assets and requiring change freezes while they occur. These moves depending on complexity are quick or may take several weeks or months depending on complexity and other factors. These moves are also dependent on some facility projects to expand (floor space, heating, ventilation, air conditioning (HVAC), UPS and Electrical) etc..) We are working closely with all project managers and project teams accommodating our schedules around any freezes or timelines. If these timelines or freezes move or are greater than anticipated then the need for us to adjust and extend any integrators/contractors will occur. Close communications with the individual teams will need to occur and continue to ensure any changes in schedule can be mitigated and any schedules adjusted for testing, implementations, go-live etc.. The ECS Protection Systems program is currently evaluating any new needs that these Data Center moves/consolidations may require and continuously analyzing new projects for applicability of the technology. It is important that we continue to enhance our security posture and not allow it to become stagnant.

#### Risk of No Action:

The program will need to continue utilizing an lifecycle refresh plan occurring every 5 years. This will allow us to stay current with advances in technology and ensure that our maintenance and support costs remain steady. If the equipment ages the cost for maintenance and support increases.

Alternative would be to extend the lifecycle replacement.

1. External Services (Existing Framework agreements and quotes for similar activities in the past)
2. AFUDC and Overhead charges (TBD)
3. Internal Labor charges (Project Management and Operations personnel charging their time during the implementation)

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020          | 2021          | 2022            | 2023            | 2024          |  |  |
|------------------------|-----------------|---------------|---------------|-----------------|-----------------|---------------|--|--|
| # AFUDC                | \$ 96           | \$ 13         | \$ 16         | \$ 29           | \$ 38           | \$ 0          |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # External Services    | \$ 4,141        | \$ 322        | \$ 295        | \$ 1,003        | \$ 1,823        | \$ 699        |  |  |
| # Internal - Non-AC    | \$ 30           | \$ -          | \$ -          | \$ -            | \$ 18           | \$ 12         |  |  |
| # Internal, Labor      | \$ 26           | \$ -          | \$ -          | \$ -            | \$ -            | \$ 26         |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # Materials            | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 4,294</b> | <b>\$ 335</b> | <b>\$ 311</b> | <b>\$ 1,032</b> | <b>\$ 1,879</b> | <b>\$ 737</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026         | 2027          | 2028        | 2029          | 2030          | 2031         |
|------------------------|-----------------|---------------|--------------|---------------|-------------|---------------|---------------|--------------|
| # AFUDC                | \$ 113          | \$ 15         | \$ 9         | \$ 47         | \$ 3        | \$ 21         | \$ 15         | \$ 3         |
| # CIAC                 | \$ -            | \$ -          |              | \$ -          | \$ -        | \$ -          | \$ -          | \$ -         |
| # External Services    | \$ 1,319        | \$ 178        |              | \$ 678        |             | \$ 285        | \$ 178        |              |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -         | \$ -          | \$ -        | \$ -          | \$ -          | \$ -         |
| # Internal, Labor      | \$ 66           | \$ 17         |              | \$ 24         |             | \$ 7          | \$ 18         |              |
| # Internal, Overheads  | \$ 113          | \$ -          | \$ 13        | \$ 54         | \$ 3        | \$ 22         | \$ 18         | \$ 4         |
| # Materials            | \$ -            | \$ -          | \$ -         | \$ -          | \$ -        | \$ -          | \$ -          | \$ -         |
| # Overheads - External | \$ 126          | \$ -          | \$ 13        | \$ 60         | \$ 3        | \$ 24         | \$ 21         | \$ 4         |
| <b>Total</b>           | <b>\$ 1,737</b> | <b>\$ 210</b> | <b>\$ 35</b> | <b>\$ 863</b> | <b>\$ 9</b> | <b>\$ 360</b> | <b>\$ 250</b> | <b>\$ 11</b> |

[illegible]

## Cyber Recovery Solution

### PROJECT INFORMATION

|                                 |                                  |                                         |                                    |                                     |
|---------------------------------|----------------------------------|-----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-004450 | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>LaPerle, Bryan | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>H2 2029  |

#### Project description:

A Cyber recovery tool to be used with the OSG network to provide a cyber recovery solution for our our critically prioritized applications. This Recovery tool is to enable an efficient and resilient recovery option for the critical applications.

#### Project Scope:

No dollars for P25. This solution will create a framework that will integrate a Cyber recovery solution and controls with the existing backup solutions being used within the OSG network. The project will determine the location(s) of the solution. Determine the needed equipment, licenses, services, and maintenances agreements. Training will be included in the project plan as well as resource needs for a successful outcome. The project will include a lifecycle of 3 to 5 years, with the project plan will include a post lifecycle/migration plan outline for the replacement or the next phase of the project.

#### Project Benefits:

Some of the benefits of having the Cyber recovery solution will be to allow for a decreased Recovery Time in returning critical operations back to a normal state after a cyber event. When we return our operations back to a normal state we reduce the negative impact of the event. With a Cyber Recovery solution we protect Avangrid's People, Finances, and Reputation

#### Project Risks and Mitigation Plan:

The current project risks at this stage of the planning Our understanding where the proof of concept for this project will be where the final project will reside permanently the resource demand to properly drive this project with the correct know how expertise and historical knowledge of avangrid osg networks. External projects may also add to the risks of completion or timeline of this project. By funding this project we will understand needs with the proper buy in from other departments and other groups within and outside of OSG.

#### Risk of No Action:

This project will add a more secure layer in the safeguarding of our most critical data.

If this project is not undertaken and existing backup of data is compromised, we run the risk of losing data that is required and utilized by our operational systems and may not be able to be retrieved at all or in a timely manner. This project will allow for us as an organization within networks to safeguard our most critical data outside of normal backup and recovery solutions. If this data is lost or is held captive by a ransom attack the company may need to pay fines and other Unscheduled costs to retrieve the data, if the data is retrievable at all.

#### Project Alternatives:

At this time in operational smart grids and networks there's no cyber recovery solution to compare as an alternative too. The current solutions are the data center backup and restore solutions the proposed solution would this project be external to those solutions and run in parallel but not be included in the normal process of data backup. And the solution is proposed to be in a separate site with very strict operating hours. The proposed solution that we are reviewing is a specific to operational technologies as opposed to attempting to retro fit an information technology solution.

#### Basis for Project Estimates

The project estimates were derived by market research on solutions working with different vendors and Internal knowledge within Avangrid. The research on total cost is ongoing but this proposed amount was reviewed originally with the project sponsor. The costs include hardware software and engineering services is an estimate for the project initial kickoff in a staged project environment.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025        | 2026        | 2027            | 2028            | 2029            | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|-----------------|-----------------|-----------------|-------------|-------------|
| # AFUDC                | \$ 196          | \$ -        | \$ -        | \$ 65           | \$ 65           | \$ 65           | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| # External Services    | \$ 2,943        | \$ -        | \$ -        | \$ 981          | \$ 981          | \$ 981          | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| # Internal, Labor      | \$ 165          | \$ -        | \$ -        | \$ 55           | \$ 55           | \$ 55           | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,305</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,102</b> | <b>\$ 1,102</b> | <b>\$ 1,102</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

| Data Center Lifecycle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                  |                                        |                                    |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| PROJECT INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                        |                                    |                                     |
| <b>OpCo:</b><br>NYSEG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Project ID:</b><br>PRJ-006470 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |
| <b>Project description:</b><br>Annual lifecycle of end-of-life/support Data Center, Unix/Linux (server and workstation), Data Protection, and Storage Infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                  |                                        |                                    |                                     |
| <b>Project Scope:</b><br>Data Center Lifecycle: Includes in-rack PDUs, ATSS, rack fans, out-of-band access solutions, structured cabling, crash carts, copper and fiber optic tools, accessories, and associated external services and maintenance agreements.<br><br>Data Protection Lifecycle: Includes data protection appliances/licensing and associated external services and maintenance agreements.<br><br>Database Appliance Lifecycle: Includes database appliances/licensing and associated external services and maintenance agreements.<br><br>Server Lifecycle: Includes servers and associated external services and maintenance agreements.<br><br>Workstation Lifecycle: Includes workstations, monitors, and peripherals with associated external services and maintenance agreements.<br><br>Storage Lifecycle: Includes storage appliances and associated external services and maintenance agreements. |                                  |                                        |                                    |                                     |
| <b>Project Benefits:</b><br>Replace aging infrastructure approaching end of life and no-longer supported by manufacturer in support of uptime, recoverability, and support for incidents from equipment manufacturers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                  |                                        |                                    |                                     |
| <b>Project Risks and Mitigation Plan:</b><br>The risks of failing to lifecycle hardware no-longer under support with the manufactures include increased risk of hardware failure with limited availability of spare parts from reputable (non gray-market) sources--which can result in extended outages as well as risk of security vulnerabilities which cannot be patched. Mitigations can include third-party (non-OEM) support contracts, and purchasing stocks of spare parts to reduce the duration of outages--which can partially mitigate the support risks--but not the security risks.                                                                                                                                                                                                                                                                                                                          |                                  |                                        |                                    |                                     |
| <b>Risk of No Action:</b><br>The risks of performing no action--as above--are running on hardware no-longer under support with the manufacturer including increased risk of hardware failure with limited availability of spare parts from reputable (non gray-markey) sources--which can result in extended outages as well as risk of security vulnerabilities which cannot be patched. This can result in loss of SCADA such that Electric or Gas operations would need to send out field crews for manual visibility at significant cost and which cannot be maintained for an extended period of time.                                                                                                                                                                                                                                                                                                                 |                                  |                                        |                                    |                                     |
| <b>Project Alternatives:</b><br>There is no viable alternative to lifecycle replacement of computer hardware. Computer hardware has a finite lifespan and degrades over the period of its life. Hardware manufacturers also only support hardware and provide security patches for a finite period of time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                  |                                        |                                    |                                     |
| <b>Basis for Project Estimates</b><br>Equipment cost esimates are based on comparable past purchases of the components approaching end of life in the target year.<br><br>NOTE PRJ-006470 is a breakout from 2025 ECS Infrastructure (PRJ-004854) and ASD Infrastructure (PRJ-004864).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                  |                                        |                                    |                                     |

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026          | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 946           | \$ -        | \$ 35         | \$ 232          | \$ 224          | \$ 130          | \$ 185          | \$ 140          |
| # CIAC                 | \$ -             | \$ -        | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 2,072         | \$ -        | \$ 80         | \$ 341          | \$ 368          | \$ 354          | \$ 594          | \$ 335          |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,317         | \$ -        | \$ 43         | \$ 226          | \$ 226          | \$ 326          | \$ 302          | \$ 193          |
| # Internal, Overheads  | \$ 1,663         | \$ -        | \$ 83         | \$ 396          | \$ 347          | \$ 237          | \$ 349          | \$ 251          |
| # Materials            | \$ 15,320        | \$ -        | \$ 622        | \$ 3,902        | \$ 3,590        | \$ 2,252        | \$ 3,116        | \$ 1,838        |
| # Overheads - External | \$ 1,757         | \$ -        | \$ 86         | \$ 399          | \$ 353          | \$ 272          | \$ 375          | \$ 273          |
| <b>Total</b>           | <b>\$ 23,075</b> | <b>\$ -</b> | <b>\$ 949</b> | <b>\$ 5,496</b> | <b>\$ 5,109</b> | <b>\$ 3,572</b> | <b>\$ 4,920</b> | <b>\$ 3,029</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Networking Gear Lifecycle

### PROJECT INFORMATION

|                                 |                                  |                                        |                                    |                                     |
|---------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-006477 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Annual lifecycle of Infrastructure Networking devices.

#### Project Scope:

Networking Devices Lifecycle: Includes Routers and Switches and associated external services and maintenance agreements.

Firewall Lifecycle: Includes all Firewalls and Firewall Management Devices and associated external services and maintenance agreements.

Load Balancer Lifecycle: Includes all network/appliance based Load Balancers and associated external services and maintenance agreements.

#### Project Benefits:

Replace aging infrastructure approaching end of life and no-longer supported by manufacturer in support of uptime, recoverability, and support for incidents from equipment manufacturers.

#### Project Risks and Mitigation Plan:

The risks of the hardware lifecycle are potential for extended outages based on human error or degraded states or outages based on initial hardware failure. These are mitigated by fully completing backups of the existing hardware, and moving it off the devices directly, pre-configuring the new hardware and testing it where capabilities exist to do so with production like scenarios, as well as leaving the existing devices in place as to fail back to them by means of restoring physical connections to the routers, switches and firewalls.

#### Risk of No Action:

Not completing these upgrades will render the networking infrastructure in a state where the teams will not be provided patches for the devices causing a risk of cyber security or functional instability, not being able to open support tickets with the vendor in situations where there is a function issue or a device in a down state or not being able to have the vendor swap hardware based on a true failure of the devices themselves thus leaving the network supporting the grid in a severely degraded or non-centrally managed state from the control centers or with the current applications.

#### Project Alternatives:

The Infrastructure Networking team has taken a look at alternatives from other vendors but at this time there are no acceptable alternatives due to interoperability and a complete swap out of management tools that are required to manage the firewall infrastructure which does not permit cross vendor management, and to swap the entire hardware system out would cost roughly a 10x increase in cost, retraining of staff which would also take 6 months or more to come up to speed for day to day operations.

#### Basis for Project Estimates

The budgeted rates here are based on quantities identified for replacement hardware based on the current Framework agreed prices for the life of the Framework agreements. This is a break out from prior years ASD and ECS programs, and going forward this will represent all Networking hardware refresh estimated for 2026 thru 2031. For the external labor costs, these are pre-determined Framework Agreement rates. For internal labor rates, these are based on historical rates used from prior years from the last lifecycle of this equipment.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026            | 2027          | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 612           | \$ -        | \$ 64           | \$ 29         | \$ 113          | \$ 159          | \$ 170          | \$ 77           |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 1,315         | \$ -        | \$ 129          | \$ 79         | \$ 379          | \$ 493          | \$ 83           | \$ 154          |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,625         | \$ -        | \$ 191          | \$ 101        | \$ 156          | \$ 297          | \$ 650          | \$ 230          |
| # Internal, Overheads  | \$ 1,137         | \$ -        | \$ 150          | \$ 55         | \$ 178          | \$ 254          | \$ 328          | \$ 173          |
| # Materials            | \$ 9,636         | \$ -        | \$ 1,021        | \$ 443        | \$ 1,653        | \$ 2,372        | \$ 2,921        | \$ 1,226        |
| # Overheads - External | \$ 1,347         | \$ -        | \$ 182          | \$ 69         | \$ 190          | \$ 283          | \$ 416          | \$ 209          |
| <b>Total</b>           | <b>\$ 15,673</b> | <b>\$ -</b> | <b>\$ 1,738</b> | <b>\$ 775</b> | <b>\$ 2,668</b> | <b>\$ 3,857</b> | <b>\$ 4,568</b> | <b>\$ 2,069</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Compliance Operations and Digital Identities

### PROJECT INFORMATION

|                                 |                                  |                                        |                                    |                                     |
|---------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-006482 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Within this program we will continue the protection provided by Service Management (Including Asset, Incident, Request and Change Management), Identities Credentials and Access Management (including automation, privileged user management and user/credential management), CIP Compliance expansion, Vulnerability and Patch Management, End Point Protection, Vulnerability Detection and Integrity Management, Passive Monitoring, Packet Inspection and Brokering, Network Segmentation and Security Information and Event Management (SIEM). The main goal of the program is to further the deployment, harmonize our environments while increasing our efficiency. At the present time the foundation applications are in specific areas but need to be pushed out to all areas of Operational Smart Grids. While this push is being completed we will also include replacing legacy applications/hardware to reduce training, administration and renewal costs. It's important to continue this program now to increase our centralized management, standardize our tool offering and increase our efficacy and cyber diligence. Deploying this program allows us to safeguard the organization's digital assets and ensure the integrity, confidentiality, and availability of information through advanced security operations and robust digital identity management.

The program will continue agile methods to facilitate our efforts to:

- (1) Centralize Administration of Users, Applications and Devices
- (2) Control changes
- (3) Manage Incidents and Threats
- (4) Increase Accountability and Auditability
- (5) Automate workflows to ensure our compliance to NERC CIP requirements and centralized evidence collection for NPCC Audits.

To accomplish this, we will continue to deploy new applications and tools for RGE, harmonize and centralize our environments to increase our efficiency.

#### Project Scope:

Over the course of the program major milestones will include implementing our standard offerings in the Avangrid Secure Domain moving outwards to include other areas, harmonizing as we go to existing Operational Smart Grid networks (25-30). We will be collapsing/consolidating domains, standardizing software, automating (where possible to reduce human error/gain efficiencies) user, credential, asset, change, vulnerability. We will be adding/increasing auditability and appropriate approvals, centralized management of Assets, Changes, Incidents and Requests for all of OSG. Within this program we will continue to deploy the services below and enhance the protection provided. (Service/Components/Benefit)

#### Digital Identities which includes :

- Service Management (Components - Asset, Incident, Request and Change Management) Benefits - Auditable environment, controlled change, reporting/KPI (Key Performance Indicator) capabilities. Over the life of the program, we will have all of our identified OSG assets managed. This means that every incident, change and request will be approved (or not) within one centralized system. POC (proof of concept) for vulnerability management will be complete, meaning vulnerabilities will be matched up with POC assets and mitigation can be tracked and recorded in one place. The vulnerability module will be push out to be used for all devices decreasing manually management efforts. Workflows will be implemented to allow us centralized management of all OSG NERC CIP assets and enforce NERC/CIP requirements to be followed. Evidence will be centralized in one place and reoccurring tasks will be tracked against the asset. We will be improving our communication with our data center management tool from one way communication to two-way communication. Spectrum up/down conditions will be sent in to automatically open incident tickets. Software assets will be added to the inventory and managed similar to hardware assets. Finally all parts for an Asset (Software/Hardware/Virtual) lifecycle will be managed, from new idea, to ordering, receiving, building/installing, moving to service, to destruction at the end of life.

- Identities Credentials and Access Management (ICAM) (Components - Governance, Automation, Privileged User Management and User/Credential Management) Benefits - Quickly add/remove users, ensure least privileged access, reduce risk for bad actors. Over the life of the program, we will have completed integrating our applications to fully manage users and devices. We will have completed our POC for automation and we will have a centralized place to show evidence of onboarding /off boarding within set standards. We will have privileged accounts managed within vaults and control/audit who has access to which accounts and when access was granted/removed. We will be creating and implementing our Active Directory Harmonization plan to collapse the complexity of our network where appropriate to ease management. Requests and approvals will be coming in from the service management platform and be to have auditable approvals. Automation will be implemented to decrease the amount of human involvement in on-boarding and off-boarding.

#### Compliance Operations and Protection Systems which includes:

- CIP Compliance Expansion – (Cyber Vulnerability Assessments, Creating /Enforcing Procedures, Maintaining Evidence) Benefits - NERC/CIP Compliance. Over the course of the program we will continue updating procedures, creating RACI (Responsible Accountable, Consulted, Informed) documents and repeatable processes. We will continue to raise and expand our standards to include all devices within OSG to ensure a higher level of protection.

- Vulnerability and Patch Management (Vulnerability Discovery, Communications, Quality Assurance) Benefits - Standard communications, reduced risk and agreed upon service level agreements. Over the course of the program we will solicit a vendors or help us gather current state information and requirements like existing tools, KPIs, communications and processes and make suggestions on harmonization of processes and tools, staffing, communications. We will use this information to implement best in class processes/communications, tools, and automation of patch deployment. The primary data inputs for vulnerabilities will be from our service management tool and our vulnerability detection and integrity tool.
- End Point Protection Standardization –(Anti Virus, Intrusion Detection, Intrusion Prevention) Benefits - Deter/prevent bad actors from gaining access to our assets and data. Over the course of the program we will standardize on one software offering and roll it out to all areas. We will either be replacing software to standard offering or upgrading standard offering to the newest version. Standardizing on a single offering will allow use to reduce our training and deployment costs.
- Vulnerability Detection and Integrity Management – (Vulnerability Detection and Integrity Management (baseline)) Benefits - Vulnerabilities and baseline changes will be raised as incident tickets within our service management platform. This will allow more reporting and get eyes on baseline changes more quickly. Over the course of the program we will be on boarding new networks and configure services to get the most information possible.
- Network Segmentation - Benefits - Provide clean break / one way traffic points between networks. Over the course of the program we will evaluate fit for function of devices currently implemented and proposed to be implemented.
- Security Information and Event Management (SIEM) – Benefits - Collect all logs and event information in a centralized repository. Over the course of the program we will be on-Boarding new networks and rolling out new services to increase the protection and earliest possible bad actor event notifications.

#### **Project Benefits:**

These programs will provide efficiencies for staff (training and administration) and should increase our scope/scale when submitting renewals. We will also be analyzing the cost difference/security considerations for on-premises or cloud. We will be increasing our efficiency via centralized management, automation, reduction of employee training and allow purchasing from standard offering vendors. Program is designed to increase our control over our environment and our ability to deter, prevent, protect, and detect anomalous activity that could indicate bad actors have gained access to our environment.

Most Notably:

- Service Management (Components - Asset, Incident, Request and Change Management) Benefits - Auditable environment, controlled change, reporting/KPI (Key Performance Indicator) capabilities.
- Identities Credentials and Access Management (ICAM) (Components - Governance, Automation, Privileged User Management and User/Credential Management) Benefits - Quickly add/remove users, ensure least privileged access, reduce risk for bad actors.
- CIP Compliance Expansion – (Cyber Vulnerability Assessments, Creating /Enforcing Procedures, Maintaining Evidence) Benefits - NERC/CIP Compliance.
- Vulnerability and Patch Management (Vulnerability Discovery, Communications, Quality Assurance) Benefits - Standard communications, reduced risk and agreed upon service level agreements.
- End Point Protection Standardization –(Anti Virus, Intrusion Detection, Intrusion Prevention) Benefits - Deter/prevent bad actors from gaining access to our assets and data.
- Vulnerability Detection and Integrity Management – (Vulnerability Detection and Integrity Management (baseline)) Benefits - Vulnerabilities and baseline changes will be raised as incident tickets within our service management platform. This will allow more reporting and get eyes on baseline changes more quickly.
- Network Segmentation - Benefits - Provide clean break / one way traffic points between networks.
- Security Information and Event Management (SIEM) – Benefits - Collect all logs and event information in a centralized repository.

#### **Project Risks and Mitigation Plan:**

One of the top risks to the Compliance Operations and Digital Identities program are other projects operating with in the same time frame. The most notable are Data Center Move and Data Center Consolidation. These projects are moving assets and freezing changes during the moves. Some of the moves are quick and some take several weeks, depending on complexity. The move schedules are dependent on facilities projects to expand services to accept new load (floor space, heating, ventilation, and air conditioning (HVAC), uninterruptible power supply (UPS), power conditioning systems etc..). We are working closely with all of the project managers and project teams while we are planning our schedules to accommodate freezes. If these other projects begin to slip significantly in their schedules, this will impact Compliance Operations and Digital Identities program schedule. The effect will be to extend our need for integrators and contractors. Close communications is going to need to continue going forward to ensure mitigations can be accomplished by this program shifting implementation, testing and go-live dates move to sooner or later as needed. Compliance Operations and Digital Identities program is in the process of verifying our data center needs to verify the all of the programs needs fall into the existing datacenter projects.

The decision to take “no action” regarding the continuation of the Compliance Operations and Digital Identities programs will leave us with only the foundations of the former cyber security master plan (CSMP) installed. Among other things, the CSMP program was started several years ago to add protection, detection and to gain efficiencies by centralization and standardization and to ensure a high level of accountability/auditability. The foundations have been set, but to receive full benefits we need to continue implementation out to the rest of the networks. We have seen benefits in managing our hardware, early detection of anomalous activity, and a decrease of reportable events in our compliance program. This trend should continue as we have moved from assessing the environment to implementing the foundations needed. These foundations are installed in a smaller portion of our network and need to be moved out to the entire network in order to have the same high-quality coverage everywhere. Now that we have the foundations, we can continue more out to other networks and departments to continue the processes of centralization, standardization, accountability/auditability, and significantly increase our ability to deter, prevent, protect, and detect anomalous activity that could indicate bad actors have gained access to our environment.

Over the course of the program the Compliance Operations and Digital Identities teams have looked at current state and future state. The program teams have evaluated all of the alternatives currently in our environments and in the market place to select tools that provide the most complete match to our requirements including fit for service, third party considerations, stability of partner and relationship with partner, training (especially free training) and cost of management. All alternatives were looked at and the selected tools were based on these categories. We are moving through the tools in phases as a slow and steady cadence protects the environment from too many changes and helps to maintain stability. The goals is to harmonize all of our networks/environments and provide a standard offering for centralized management and auditable administrative control.

The project costs estimates are created using several different inputs. At the beginning of CSMP we requested estimates from an integrator. These estimates include, among other things, costs to create RFP's to bring in integrators, the cost of their expertise to help with evaluations and implementation. We have used historical basis costs for hardware, including installation and cabling, and lifecycle. We have also estimated contractors to continue work on the projects and to transition to employees as we move to normal operations. We have used historical data to estimate our internal labor. We have estimated overlapping costs where we will be replacing (harmonizing) applications to allow for a slow steady transition.

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total               | 2025                | 2026            | 2027             | 2028            | 2029            | 2030            | 2031            |
|------------------------|---------------------|---------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 153,617          | \$ 153,617          | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -                | \$ -                | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 1,909,743        | \$ 1,886,465        | \$ 3,278        | \$ 7,711         | \$ 2,870        | \$ 3,302        | \$ 2,806        | \$ 3,310        |
| # Internal - Non-AC    | \$ -                | \$ -                | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 222,274          | \$ 219,277          | \$ 504          | \$ 1,064         | \$ 361          | \$ 375          | \$ 317          | \$ 375          |
| # Internal, Overheads  | \$ 126,138          | \$ 124,103          | \$ 356          | \$ 649           | \$ 223          | \$ 249          | \$ 229          | \$ 329          |
| # Materials            | \$ -                | \$ -                | \$ -            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ 270,776          | \$ 268,103          | \$ 483          | \$ 862           | \$ 292          | \$ 320          | \$ 294          | \$ 423          |
| <b>Total</b>           | <b>\$ 2,682,547</b> | <b>\$ 2,651,565</b> | <b>\$ 4,621</b> | <b>\$ 10,286</b> | <b>\$ 3,747</b> | <b>\$ 4,245</b> | <b>\$ 3,646</b> | <b>\$ 4,437</b> |

[illegible]

## Platform Services Lifecycle

### PROJECT INFORMATION

|                                 |                                  |                                        |                                    |                                     |
|---------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-006491 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Annual lifecycle of Platform Services assets.

#### Project Scope:

Hyper Converged Infrastructure Lifecycle: Currently standarized on Dell VxRails, associated services and maintenance agreements.

Application Lifecycle: Includes Microsoft, Axonius, Monitors Anywhere, VMware, Omnisia, Liquidware, nVidia, Dell licensing and associated external services and maintenance agreements.

Video Wall Lifecycle: Includes Barco, Activu, Primate systems and applications as well as associated external services and maintenance agreements.

Desktop/Laptop Lifecycle: Includes HP and Dell workstations and laptops and associated external services and maintenance agreements.

Thin/Zero Client Lifecycle: Includes ClearCube, Lenovo, Centerm, Thin Global clients and associated external services and maintenance agreements.

#### Project Benefits:

Replace aging infrastructure approaching end of life and no-longer supported by manufacturer in support of uptime, recoverability, and support for incidents from equipment manufacturers.

#### Project Risks and Mitigation Plan:

Risks would be running equipment that is not supported from a hardware or software perspective. Mitigation would be that we continue to run on equipment that can not be supported and is not receiving security updates, bug fixes, or has no available compatible replacment parts should a failure occur.

#### Risk of No Action:

No action puts us at risk of security or system exploits and potentially long duration outages due to a lack of available support. These systems are used in the control of the energy systems and physical access controls. Any outage could impact customers which could create health and safety concerns.

#### Project Alternatives:

There are no alternatives available as this program is meant to replace technology that is in support of the control centers systems and pysical access controls.

#### Basis for Project Estimates

This program is a breakout from the ASD Infrastructure (PRJ-004864) and ECS Infrastructure (PRJ-004854) programs for 2026 through 2031

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025        | 2026            | 2027          | 2028            | 2029             | 2030            | 2031        |
|------------------------|------------------|-------------|-----------------|---------------|-----------------|------------------|-----------------|-------------|
| # AFUDC                | \$ 1,075         | \$ -        | \$ 107          | \$ 8          | \$ 360          | \$ 496           | \$ 104          | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -             | \$ -            | \$ -        |
| # External Services    | \$ 3,846         | \$ -        | \$ 77           | \$ 63         | \$ 2,018        | \$ 1,344         | \$ 344          | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -             | \$ -            | \$ -        |
| # Internal, Labor      | \$ 840           | \$ -        | \$ 33           | \$ 11         | \$ 13           | \$ 608           | \$ 175          | \$ -        |
| # Internal, Overheads  | \$ 1,737         | \$ -        | \$ 246          | \$ 14         | \$ 574          | \$ 716           | \$ 188          | \$ -        |
| # Materials            | \$ 15,970        | \$ -        | \$ 2,062        | \$ 93         | \$ 5,205        | \$ 6,972         | \$ 1,638        | \$ -        |
| # Overheads - External | \$ 1,739         | \$ -        | \$ 228          | \$ 15         | \$ 535          | \$ 757           | \$ 204          | \$ -        |
| <b>Total</b>           | <b>\$ 25,207</b> | <b>\$ -</b> | <b>\$ 2,752</b> | <b>\$ 203</b> | <b>\$ 8,706</b> | <b>\$ 10,893</b> | <b>\$ 2,652</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## ASD Infrastructure Firewalls NYSEG

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-002389 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

All of the Equipment and Apps that are approaching obsolescence that need to be replaced or renewed across the Avangrid Security Domain (ASD) including the Detection and Response, Asset Mgmt, Identity, Credentials and Access Mgmt, Gov/Risk/Compliance and Business Continuity Tools. The ASD Cyber Lifecycle also includes the identification and purchase of all Firewalls, and diodes for implementation by Infrastructure to the ASD. In addition to the above benefits, this program includes technical refresh or replacement of the underlying infrastructure that ages out or goes end of life. This program keeps datacenter equipment (servers, switches, routers, backup appliances, storage arrays, firewalls, and other data center centric equipment) that services, physical security, telecom, and cyber security current and under manufacturers support. Without this constant refreshment of ageing computer equipment these products would become obsolete.

Endpoint Protection: Subscription/Hardware lifecycle.

SIEM: Equipment Lifecycle

Packet Broker (Deduplication and deep packet inspection): Hardware Lifecycle

Cyber Vulnerability Scanning: Hardware Lifecycle

#### Project Scope:

The Avangrid Security Domain Cyber Lifecycle Programs Scope includes the support resources (ASD/ICT, Professional services) required to maintain critical cyber support systems. It also includes the following Hardware identification and purchase. Below is the list of equipment to provide effective security measures and proper lifecycle for continued relevant support of our cybersecurity controls and systems.

Endpoint Protection: Subscription/Hardware lifecycle.

SIEM - Equipment Lifecycle

Packet Broker (Deduplication and deep packet inspection): Hardware Lifecycle

Cyber Vulnerability Scanning: Hardware Lifecycle

NERC-CIP compliance Tools / Hardware lifecycle

#### Project Benefits:

Avangrid Security Domain Program is designed to provide a secure Cyber Infrastructure and centralized Physical security system. This includes professional services and hardware/software Cyber lifecycle for direct and auxiliary systems which comprises advanced cybersecurity technologies and capabilities. In the capabilities listed below, the goal is to standardize and expand capabilities across common platforms.

- Dragos and Log Rhythm NetMon Implementation: (1) Increased centralized cybersecurity monitoring, optimizes resources and avoids redundancy across operating companies. (2) Increased situational awareness across AVANGRID, consolidating cybersecurity monitoring and providing analysts with a single pane of glass will allow AVANGRID to gain a higher degree of situational awareness across the organization and its operating companies.

- Dragos, LogRhythm NetMon, Gigamon, and Cisco equipment Implementation: Increased efficiency and enablement, cybersecurity monitoring within the ASD is driven by Meet-Me-Points (MMP), which provide traffic aggregation, deduplication, and decryption capabilities, without increasing the load on the network infrastructure

- Increased network detection and anomaly analytics capabilities: The Dragos deployment across ASD environments and network interfaces improve visibility of ASD network activity against expected traffic flow baselines for anomaly detection.

- Engineered baseline configuration and monitoring tool: Design completed to put Tripwire into ASD environments.

- Service Mgmt solution: (1) Completed planning to deploy in ASD and be used by all operating companies. (2) Mgmt solution to manage production changes, asset reporting, request approval and incident Mgmt.

- IAM tools for managing user access and privileged access.

#### Project Risks and Mitigation Plan:

Some of the top risks identified for the ASD Protection Systems program are competing projects that are advancing at the same time frame. The biggest of them is the Data Center Move and Data Center Consolidations. These projects are physically moving assets and requiring change freezes while they occur. These moves depending on complexity are quick or may take several weeks or months depending on complexity and other factors. These moves are also dependent on some facility projects to expand (floor space, heating, ventilation, air conditioning (HVAC), UPS and Electrical) etc..) We are working closely with all project managers and project teams accommodating our schedules around any freezes or timelines. If these timelines or freezes move or are greater than anticipated then the need for us to adjust and extend any integrators/contractors will occur. Close communications with the individual teams will need to occur and continue to ensure any changes in schedule can be mitigated and any schedules adjusted for testing, implementations, go-live etc.. The ECS Protection Systems program is currently evaluating any new needs that these Data Center moves/consolidations may require and continuously analyzing new projects for applicability of the technology. It is important that we continue to enhance our security posture and not allow it to become stagnant.

The program will need to continue utilizing an lifecycle refresh plan occurring every 5 years. This will allow us to stay current with advances in technology and ensure that our maintenance and support costs remain steady. If the equipment ages the cost for maintenance and support increases.

Alternative would be to extend the lifecycle replacement.

1. External Services (Existing Framework agreements and quotes for similar activities in the past)
2. AFUDC and Overhead charges (TBD)
3. Internal Labor charges (Project Management and Operations personnel charging their time during the implementation)

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020        | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 716           | \$ -        | \$ 5            | \$ 191          | \$ 446          | \$ 75           |  |  |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 12,685        | \$ -        | \$ 2,414        | \$ 3,007        | \$ 5,966        | \$ 1,299        |  |  |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Labor      | \$ 9             | \$ -        | \$ -            | \$ -            | \$ -            | \$ 9            |  |  |
| # Internal, Overheads  | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Overheads - External | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 13,411</b> | <b>\$ -</b> | <b>\$ 2,419</b> | <b>\$ 3,198</b> | <b>\$ 6,412</b> | <b>\$ 1,382</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 934           | \$ 72           | \$ 144          | \$ 189          | \$ 107          | \$ 108          | \$ 121          | \$ 194          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 14,157        | \$ 1,119        | \$ 2,194        | \$ 2,848        | \$ 1,617        | \$ 1,636        | \$ 1,833        | \$ 2,911        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 641           | \$ 18           | \$ 88           | \$ 143          | \$ 71           | \$ 71           | \$ 89           | \$ 160          |
| # Internal, Overheads  | \$ 1,157         | \$ 94           | \$ 209          | \$ 216          | \$ 114          | \$ 113          | \$ 139          | \$ 270          |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ 1,320         | \$ 95           | \$ 237          | \$ 251          | \$ 131          | \$ 130          | \$ 160          | \$ 316          |
| <b>Total</b>           | <b>\$ 18,207</b> | <b>\$ 1,398</b> | <b>\$ 2,872</b> | <b>\$ 3,646</b> | <b>\$ 2,040</b> | <b>\$ 2,058</b> | <b>\$ 2,343</b> | <b>\$ 3,850</b> |

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |



## DRAGOS NYSEG

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-002642 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Dragos is an Operations Technology (OT) specific Cybersecurity platform that passively monitors critical systems and alerts for threats identified in the network. It also has the capability to discover and profile OT assets. We will replace the aging equipment with new equipment and expand its utilization throughout the organization. This project will also resolve some inefficiencies that exist from the initial deployment. Dragos also provides Asset Visibility providing the make, model and version information of the field devices. The platform assists in providing numerous OT specific services for intelligence, incident response, topology reviews, penetration testing and more. It also mitigates network interconnection risks for Critical Infrastructure Energy Control Centers that came out of a recommendation from the "USA Office of the President Executive Order 14028 Improving the Nations' Cybersecurity and the department of Energy 100-Day plan to address Cybersecurity Risks to the U.S. Electric System". The Dragos platform helps us in adhering to this Presidential order and assists in defending the Critical Infrastructure that Avangrid supports and maintains. It also gives us the capability to share anonymized data enhancing the Government's and private sectors ability to detect new threats and normalize data. The platform also allows us to utilize playbooks and to threat hunt when incidents occur.

#### Project Scope:

The goal of the Dragos Refresh Plan will be to co-term licensing at a 5-year refresh going forward and for new equipment the purchases will also follow a 5 year refresh plan. This minimizes the downstream support needed. The Refresh of equipment will allow us to realize savings as the cost to maintain newer equipment is reduced. A long-term Enterprise License Agreement (ELA) has been negotiated with Dragos which provides savings year-over-year on new hardware moving forward if executed. Dragos is specialized in monitoring OT Networks for both North/South and East/West network traffic. We will utilize Dragos to satisfy the requirements for East/West traffic as part of the CIP-015 Standard that is forthcoming from FERC.

The Deployment Plan for a phased approach will cover a full range of OT systems as follows:

##### Phase I Deployment - complete:

Initial rollout of the product at critical aggregation points (Level 3)

Footprint in all Operating Companies

CIP 15 Pilot conducted

##### Phase II Deployment – in process:

Continued deployment to cover all aggregation points (Level 3)

Complete the coverage, but not optimized for OT traffic

##### Phase III Deployment – in process

Perimeter deployment in Substations to provide East/West visibility of OT traffic (Level 1 and 2) (27 locations)

Deployment would cover all 59 CIP Medium Substations for CIP 15 preparation

Deploy at 2 LNG facilities to monitor East/West traffic

Potential for further rollout to enhance visibility at other substations Non CIP areas

##### Phase IV Deployment – A refresh of the Phase I and Phase II deployment to maintain coverage within the datacenter and ensure compliance.

Covers all operating companies and will deploy 27 Dragos 1 gigabyte sensors, 4 Dragos 10 gigabyte sensors and 8 Dragos Site stores. Request for funding includes Labor/Travel expenses"

Avangrid OSG has 11 datacenters in which to implement mitigations, supporting 14 lines of businesses, where 126 third party interconnections must be mitigated. CIP must be a separate implementation per interpretation from the ERO.

The risk is that OSG's attack surface continues to expand increasing our footprint to outside vulnerabilities/bad actors from third party interconnections and other communication paths. The OSG firewalls utilize intrusion detection/prevention but lack the enhanced threat analytics capabilities of the Dragos platform. Current US Government intelligence reports are suggesting that Critical Infrastructure Providers take immediate steps to secure and provide visibility of the networks to identify and stop "bad actors". DRAGOS brings advance analytics and visualization to industrial protocols on private networks via on-premises solutions and the ability to share anonymized observations with government, peer utility and private sector partners. <https://www.energy.gov/articles/biden-administration-takes-bold-action-protect-electricity-operations-increasing-cyber-0>

**Project Benefits:**

Benefits are derived from CIP compliance, cost efficiencies and detection and response effectiveness for identifying and eliminating threats to our businesses. Mitigating Risks registered and managed by Corporate Risk and leadership. Comply with Corporate Governance and Cybersecurity Policy and Rules as sponsored by the Avangrid Board of Directors. Establish a leadership position for grid security and build confidence in the Avangrid Brand among stakeholders, regulatory authorities, agencies, peer utilities, and whole of government Incident response. Assists in meeting future CIP 15 requirements that are forthcoming from FERC. This requirement is to monitor East/West network traffic in High/Med Control Centers and High/Med Substations with ERC (external routable connectivity). The key attributes of the system are Asset Visibility allowing for detailed inventories and tracking changes with a passive-first approach it lays a foundation for a robust OT cybersecurity program, Risk-Based Vulnerability Management, Intelligence-Driven Threat Detection with regularly updated modeling, configuration and threat behaviors along with Response Playbooks. The Playbooks allow for expert-authored guides that our security team can use to reduce response times and enhance workflow efficiency thus streamlining the security operations. The system allows for Flexible deployment options with virtual, on-prem or cloud solutions. It utilizes centralized management and reporting capabilities across multi-site and multi-zone deployments.

**Project Risks and Mitigation Plan:**

Some of the top risks identified for the DRAGOS program are competing projects that are advancing at the same time frame. The biggest of them is the Data Center Move and Data Center Consolidations. These projects are physically moving assets and requiring change freezes while they occur. These moves depending on complexity are quick or may take several weeks or months depending on complexity and other factors. These moves are also dependent on some facility projects to expand (floor space, heating, ventilation, air conditioning (HVAC), UPS and Electrical) etc..) We are working closely with all project managers and project teams accommodating our schedules around any freezes or timelines. If these timelines or freezes move or are greater than anticipated then the need for us to adjust and extend any integrators/contractors will occur. Close communications with the individual teams will need to occur and continue to ensure any changes in schedule can be mitigated and any schedules adjusted for testing, implementations, go-live etc.. The DRAGOS program is currently evaluating any new needs that these Data Center moves/consolidations may require and continuously analyzing new projects for applicability of the technology. It is important that we continue to enhance our security posture and not allow it to become stagnant.

**Risk of No Action:**

The decision to take "no action" regarding the continuation of the Dragos program will leave us without a solution to fulfill our NERC CIP 15 requirements to monitor East/West traffic in High Control Center and High/Med substation with ERC (external routable protocol) locations " it will also leave us at risk with the inability to detect anomalous or unauthorized network activity and limit the capabilities to respond to any incidents. We will also not have limited tools to investigate along with threat hunt and determine the threat landscape. With the expansion of external network connections such as the DER connections our attack surface continues to grow putting us at greater risk at those aggregation points. The continued addition of future connections to enhance our business service offerings and enhance our operational efficiency such as AMI enhanced features, Digital Line Rate Sensors, Future cloud connections , Artificial Intelligence, Robotics (such as our Sparky project) will also expand our exposure. The program will need to continue utilizing an lifecycle refresh plan occurring every 5 years. This will allow us to stay current with advances in technology and ensure that our maintenance and support costs remain steady. If the equipment ages the cost for maintenance and support increases.

**Project Alternatives:**

Alternative would be to extend the lifecycle replacement.

**Basis for Project Estimates**

1. External Services (Quotes for similar activities in the previous deployments)
2. AFUDC and Overhead charges (TBD)
3. Internal Labor charges (Project Management and Operations personnel charging their time during the implementation)

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021            | 2022          | 2023         | 2024            |  |  |
|------------------------|-----------------|-------------|-----------------|---------------|--------------|-----------------|--|--|
| # AFUDC                | \$ 76           | \$ -        | \$ 10           | \$ 67         | \$ -         | \$ -            |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            |  |  |
| # External Services    | \$ 3,056        | \$ -        | \$ 1,427        | \$ 0          | \$ 39        | \$ 1,590        |  |  |
| # Internal - Non-AC    | \$ 124          | \$ -        | \$ 16           | \$ 88         | \$ 2         | \$ 17           |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            |  |  |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 3,256</b> | <b>\$ -</b> | <b>\$ 1,453</b> | <b>\$ 155</b> | <b>\$ 41</b> | <b>\$ 1,606</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029        | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------|
| # AFUDC                | \$ 106          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 106          | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # External Services    | \$ 1,582        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,582        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Internal, Labor      | \$ 105          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 105          | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| <b>Total</b>           | <b>\$ 1,794</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,794</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NY Smart Metering Lifecycle

### PROJECT INFORMATION

|                                 |                                            |                                       |                                    |                                     |
|---------------------------------|--------------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>9301-1669-1480-NY-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0             | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

In order to meet regulatory, contractual, and compliance requirements, the program is to complete mandatory network expansion and replacement of AMI network devices that fail outside warranties and/or have exceeded end of life (EOL). Install solutions (e.g., resiliency, communications) to continue essential meter reading, remote orders, and meter pings during normal operations and power restoration efforts. The NY AMI Project covers this effort through 2025 and the JP captured approved 2026 spend (hence the 2026 in-service date). 63/37 split between NYSEG/RG&E for OSG Telecom's materials + internal labor 2027+); 42% AFUDC multiplier against all categories; Internal, OH multiplier (NYSEG-Common; RG&E-Common) applied against 3 categories (Internal Labor+External Services+Materials)

#### Project Scope:

This program will be used to enhance and sustain the AMI Mesh network in NY through Installation of additional AMI network devices to reach ultra remote meters as they as needed. This allows for further support of meter reading, remote orders, meter pings, and the clearing of orders during restoration efforts. In order to install these additional devices we will need to pre-engineer the areas that are under performing, survey these proposed areas, and install the equipment once an appropriate location is found. These capital dollars also include the cost of the AMI devices and the labor to install this equipment.

#### Project Benefits:

This program helps to meet current and estimated future company and regulatory requirements and has the benefit of further assuring timely and accurate meter reads for NYSEG customers as well by improving reliability and availability of the AMI network, therefore decreasing the likelihood of estimated bills for NYSEG customers.

#### Project Risks and Mitigation Plan:

Program risks and mitigations include:

- Supply Chain delays for materials - proactive procurement of forecasted devices in the beginning of each program year providing ample lead time for delivery.
- Availability of supporting components (mounting brackets, etc.) - procure and stock these materials at the beginning of each program year for planned installations.

#### Risk of No Action:

If this program is not executed, It could lead to the possibility of failed devices not being replaced, which could result in certain meters not being reachable by the network leading to estimated reads, inability to perform remote connects/disconnects, and less accurate outage predictions.

#### Project Alternatives:

The alternative to executing this program would be to increase manual meter reading staff to physically travel to the locations of unreachable meters in order to acquire actual reads. Additional truck roles would also be required in order to disconnect/reconnect and perform outage assessments. The preferred solution is to maintain the availability of all network devices and continue to add additional devices where needed to reach ultra-remote meters to avoid manual intervention.

#### Basis for Project Estimates

Cost Estimates for the this project are based on the following:

- Materials: Pricing estimated based on previous purchases during the initial NY AMI project.
- Installation: An estimated 3% failure rate @ an estimated \$1000 per install.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025 | 2026   | 2027     | 2028     | 2029     | 2030     | 2031     |
|------------------------|-----------------|------|--------|----------|----------|----------|----------|----------|
| # AFUDC                | \$ 290          | \$ - | \$ 15  | \$ 52    | \$ 53    | \$ 55    | \$ 57    | \$ 58    |
| # CIAC                 | \$ -            | \$ - | \$ -   | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # External Services    | \$ 907          | \$ - | \$ -   | \$ 171   | \$ 176   | \$ 181   | \$ 187   | \$ 192   |
| # Internal - Non-AC    | \$ -            | \$ - | \$ -   | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Internal, Labor      | \$ 908          | \$ - | \$ 46  | \$ 162   | \$ 167   | \$ 172   | \$ 177   | \$ 183   |
| # Internal, Overheads  | \$ -            | \$ - | \$ -   | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| # Materials            | \$ 3,630        | \$ - | \$ 232 | \$ 640   | \$ 659   | \$ 679   | \$ 699   | \$ 720   |
| # Overheads - External | \$ -            | \$ - | \$ -   | \$ -     | \$ -     | \$ -     | \$ -     | \$ -     |
| <b>Total</b>           | <b>\$ 5,736</b> | \$ - | \$ 293 | \$ 1,025 | \$ 1,056 | \$ 1,088 | \$ 1,120 | \$ 1,154 |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Telecomm Infrastructure

### PROJECT INFORMATION

|                                 |                                         |                                       |                                    |                                     |
|---------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>UI-N5290-NYSEG-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Operational SmartGrids Telecom manages and maintains Avangrid's wireless and wireline communications. The Telecom team works with privately owned and public carriers to serve our internal customers: Energy Control Center (ECC), Substation Automation, Distribution Automation, Smart metering, Revenue metering (MV-90 system), IT (Information Technologies) Corporate Network, Gas SCADA (Supervisory Control and Data Acquisition).

This program is intended to ensure the reliability of the existing telecom infrastructure by means of life cycle replacement, diversity and redundancy of transport solutions:

- Capacity management of existing Telecom routers, switches, and fiber Transport (new line cards, redundant common cards, etc..)
- Configuration of services on existing telecom equipment
- Installing cabling within buildings for connectivity (fiber or copper) and power/electrical, including fiber make-ready work
- Lifecycle replacement of power/fuse panels, battery replacements, generator replacement, connectors
- Adding antennas to existing towers
- Capital improvements to existing towers to extend life or expand capacity
- Intermediary equipment required for a change in Telecom Carrier service (i.e. going from copper to fiber solution).
- Project management, engineering services, and associated contracted labor
- Newark warehouse activity for Telecom Projects, including Distribution Automation telecom devices staging

This Program is an ongoing effort to meet the ever growing telecommunications needs of our customers (bandwidth, latency and reliability).

#### Project Scope:

Scope of the program is life cycle replacement of cellular routers, legacy telecom circuits, battery and backup power-related deficiencies at service centers, support ancillary services like warehouse management, Project Management and Engineering services.

#### Project Benefits:

As telecom connectivity becomes an increasingly critical aspect of operating a safe and reliable electric and gas network, maintaining the reliability of the telecom network is essential. Without telecom connectivity, the Energy Control Center cannot remotely manage the grid, negatively impacting key performance indicators (KPIs) such as SAIDI (System Average Interruption Duration Index), SAIFI (System Average Interruption Frequency Index) and CAIDI (Customer Average Interruption Duration Index) for both Electric and Gas distribution and transmission grids.

Replacing legacy infrastructure with modern solutions enables redundancy and resiliency increasing reliability while reducing OPEX.

There is an increasing requirement to monitor distributed energy resources (FERC Order 2222, Federal Energy Regulatory Commission), demand management programs, smart meters, distribution automation, and high-speed protection systems. Other supported systems include alarming, revenue metering, substation switching, etc. Most of these systems mentioned require routine hardware replacement to maintain the reliability metrics dictated by internal Avangrid standards and outside governance such as NERC/CIP (North American Electric Reliability Corporation/Critical Infrastructure Protection).

#### Project Risks and Mitigation Plan:

A risk to the project is the necessity to upgrade additional equipment at the site to bring it up to the current installation standard.

#### Risk of No Action:

The infrastructure program proactively replaces end of life assets preventing equipment failures maintaining network reliability. The risks associated with failure of the equipment include loss of line protection between substations, loss of SCADA. Loss of Land Mobile Radio communications, Loss of IT connectivity.

#### Project Alternatives:

None, life cycle replacement is needed to keep the telecom network performing at it best, so the services transported are reliable.

#### Basis for Project Estimates

Existing Framework agreements and quotes for similar activities in the past

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 210           | \$ 6            | \$ 42           | \$ 62           | \$ 96           | \$ 4            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 27,794        | \$ 6,526        | \$ 4,339        | \$ 7,303        | \$ 5,018        | \$ 4,608        |  |  |
| # Internal - Non-AC    | \$ 915           | \$ 68           | \$ 66           | \$ 78           | \$ 274          | \$ 429          |  |  |
| # Internal, Labor      | \$ 1,251         | \$ 376          | \$ 389          | \$ 261          | \$ 195          | \$ 29           |  |  |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 1,732         | \$ 460          | \$ 73           | \$ 275          | \$ 855          | \$ 70           |  |  |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 31,901</b> | <b>\$ 7,436</b> | <b>\$ 4,910</b> | <b>\$ 7,978</b> | <b>\$ 6,438</b> | <b>\$ 5,139</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031             |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| # AFUDC                | \$ 339           | \$ 339          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # External Services    | \$ 6,505         | \$ 1,072        | \$ 588          | \$ 754          | \$ 754          | \$ 879          | \$ 1,154        | \$ 1,304         |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -             |
| # Internal, Labor      | \$ 2,670         | \$ -            | \$ 445          | \$ 445          | \$ 445          | \$ 445          | \$ 445          | \$ 445           |
| # Internal, Overheads  | \$ 4,197         | \$ 566          | \$ 275          | \$ 583          | \$ 547          | \$ 575          | \$ 717          | \$ 934           |
| # Materials            | \$ 36,414        | \$ 4,570        | \$ 1,489        | \$ 5,434        | \$ 5,434        | \$ 5,804        | \$ 6,619        | \$ 7,063         |
| # Overheads - External | \$ 4,315         | \$ 484          | \$ 360          | \$ 612          | \$ 574          | \$ 599          | \$ 735          | \$ 952           |
| <b>Total</b>           | <b>\$ 54,440</b> | <b>\$ 7,031</b> | <b>\$ 3,156</b> | <b>\$ 7,828</b> | <b>\$ 7,754</b> | <b>\$ 8,302</b> | <b>\$ 9,670</b> | <b>\$ 10,698</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Telecomm Fiber

### PROJECT INFORMATION

|                                 |                                         |                                       |                                    |                                     |
|---------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>UI-N5293-NYSEG-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

The purpose of purchasing fiber optic cable is to enhance our connectivity and create high bandwidth communications and backhaul points. Energy Control Center, Information Technologies (IT) group, Protection and Control group, Advance Metering Systems (AMI) group, Physical Security and other internal customers demand a highly reliable, low-latency and high bandwidth means of communication. Operational Smart Grids (OSG) Telecoms meets these requirements by building and leasing (20 year capital lease) optical fiber strands.

Services transported over fiber are: SCADA (Supervisory Control and Data Acquisition), Physical Security Access Control, CCTV (closed circuit television) & gunshot detection, Advance Metering Infrastructure (AMI), Corporate Network and relay protections.

Our internal customer requirements dictate the locations where fiber segments should be upgraded, constructed or leased.

Due to Telecom providers disconnecting legacy circuits that transport SCADA and relay protection services, replacing them with fiber is vital to ensure system performance. Legacy circuits are old copper-based circuits (4 wires or T1, depending of the capacity of the circuit) that the telecom carriers are migrating their infrastructure off to adopt more reliable technologies like optical fiber which allow for better performance and are more resilient.

#### Project Scope:

Telecom Fiber is an ongoing program to lease optical fiber strands or build Avangrid owned fiber cables to expand and upgrade the telecommunications network to connect unserved and underserved stations and service centers within NYSEG. This includes life-cycle replacement of older fiber cables where performance is degrading.

#### Project Benefits:

A reliable telecom network is vital to the Energy Control Center, Information Technologies (IT) group, Protection and Control group, Physical Security and other internal customers.

Low latency offers several key benefits:

- Increased Network Efficiency: With less delay, network resources are used more effectively, reducing idle time and optimizing bandwidth utilization.
- Improved Responsiveness: Devices can communicate faster, leading to quicker response times and smoother interactions.
- Better Support for Automation: Real-time data transmission is essential for the efficient operation of automated systems.

These benefits make low latency a critical factor in modern network design and operation.

A fiber lifecycle capital budget is essential because it enables Avangrid to manage their fiber telecommunications infrastructure and services, from purchase to retirement. This helps to optimize spending, and boost overall efficiency and performance.

#### Project Risks and Mitigation Plan:

Long lead-times for fiber delivery is the greatest risk in this program. We work close with the vendors to identify which segments are at greater risk of delay and he

#### Risk of No Action:

With the telecom providers sunsetting copper-based services (4 wires and T1), there are critical systems that are very sensitive to latency and have to be migrated to our own network to meet the requirements of the service. Relay protection is a great example of these services.

If NYSEG doesn't expand their network, the amount of effort to migrate such critical systems will be exponentially greater.

#### Project Alternatives:

There are no alternatives to fiber in terms of performance, but wireless communications are also evaluated where it makes sense.

#### Basis for Project Estimates

There are several purchasing processes that provide information to estimate future expenses.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 12            | \$ 0            | \$ 2            | \$ 4            | \$ 5            | \$ 0            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 23,640        | \$ 6,614        | \$ 2,643        | \$ 7,617        | \$ 3,651        | \$ 3,115        |  |  |
| # Internal - Non-AC    | \$ 124           | \$ 21           | \$ 39           | \$ 16           | \$ 17           | \$ 32           |  |  |
| # Internal, Labor      | \$ 4             | \$ -            | \$ -            | \$ -            | \$ -            | \$ 4            |  |  |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 333           | \$ -            | \$ 101          | \$ 21           | \$ 211          | \$ -            |  |  |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 24,114</b> | <b>\$ 6,635</b> | <b>\$ 2,786</b> | <b>\$ 7,658</b> | <b>\$ 3,885</b> | <b>\$ 3,151</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 138           | \$ 138          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 2,195         | \$ 260          | \$ 244          | \$ 411          | \$ 347          | \$ 306          | \$ 299          | \$ 328          |
| # Materials            | \$ 23,369        | \$ 2,487        | \$ 2,142        | \$ 4,576        | \$ 4,118        | \$ 3,707        | \$ 3,336        | \$ 3,002        |
| # Overheads - External | \$ 1,942         | \$ 216          | \$ 218          | \$ 366          | \$ 309          | \$ 273          | \$ 267          | \$ 292          |
| <b>Total</b>           | <b>\$ 27,643</b> | <b>\$ 3,101</b> | <b>\$ 2,604</b> | <b>\$ 5,353</b> | <b>\$ 4,774</b> | <b>\$ 4,286</b> | <b>\$ 3,902</b> | <b>\$ 3,622</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NY WAN Expansion

### PROJECT INFORMATION

|                                 |                                         |                                       |                                    |                                     |
|---------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>UI-N0170-NYSEG-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

OSG Telecom manages and maintains Avangrid's wireless and wireline communications. The Telecom team works with privately owned and public carriers to serve our internal customers: Energy Control Center (ECC), Substation Automation, Distribution Automation, Smart metering, Revenue metering (MV-90 system), IT Corporate Network, Gas and Electric Operations.

This program is intended to ensure the reliability of the existing telecom infrastructure by means of providing connectivity to unserved or underserved substations, service centers and distribution assets to support automation activities at NYSEG.

This will involve deploying a telecom cabinet (indoor or outdoor) with routing and switching equipment and connectivity to the Wide Area Network by means of cellular services, fiber optic, wireless broadband or wireless narrowband.

#### Project Scope:

This program upgrades and expands the telecom network across NYSEG. The program supports the engineering, procurement, permitting, licensing, installation, construction and integration of wireless and wireline telecom infrastructure. Constructing new sites includes purchasing a cabinet (indoor or outdoor) and specific equipment to be installed in the cabinet, as well as engineering and installation of equipment, and the power supply to the cabinet. The fiber path also needs to be engineered on the premises to connect to existing fiber infrastructure.

#### Project Benefits:

As telecom connectivity becomes an increasingly critical aspect of operating a safe and reliable electric and gas network, maintaining the reliability of the telecom network is essential. Without telecom connectivity, the Energy Control Center cannot remotely manage the grid, negatively impacting key performance indicators (KPIs) such as SAIFI (System Average Interruption Frequency Index), SAIDI (System Average Interruption Duration Index) and CAIDI (Customer Average Interruption Duration Index).

Expanding our network reach creates opportunities at underserved facilities backhaul additional services, including IT and smart metering.

By migrating from public carrier services to private owned infrastructure we lower OPEX (Operating Expense) by eliminating monthly recurring fees. In 2024 \$434k were saved.

#### Project Risks and Mitigation Plan:

This is a program that operates in all the NYSEG service areas by extending the telecoms network to unserved and under served sites. Sometimes the locations chosen to deploy new telecom network are not ready and new locations have to be chosen. This might impact the quantity of sites served every year.

#### Risk of No Action:

With the telecom providers sunsetting copper-based services (4 wires and T1), there are critical systems that are very sensitive to latency and have to be migrated to our own network to meet the requirements of the service. Relay protection is a great example of these services.

If NYSEG doesn't expand their network, the amount of effort to migrate such critical systems will be exponentially greater.

#### Project Alternatives:

There are no alternatives to this program. The only way to ensure a reliable telecom service is that NYSEG owns the telecom network.

For each location where telecoms services are designed, a variety of alternative solutions are evaluated (wired and wireless) and the best performing one is chosen.

#### Basis for Project Estimates

There is an extensive amount of prior quotes for activities in the program.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 39            | \$ 0            | \$ 6            | \$ 11           | \$ 18           | \$ 4            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 31,816        | \$ 8,274        | \$ 7,999        | \$ 6,684        | \$ 4,033        | \$ 4,826        |  |  |
| # Internal - Non-AC    | \$ 709           | \$ 144          | \$ 200          | \$ 90           | \$ 152          | \$ 124          |  |  |
| # Internal, Labor      | \$ 163           | \$ -            | \$ -            | \$ -            | \$ -            | \$ 163          |  |  |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 1,324         | \$ 51           | \$ 158          | \$ 79           | \$ 1,020        | \$ 15           |  |  |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 34,051</b> | <b>\$ 8,469</b> | <b>\$ 8,364</b> | <b>\$ 6,864</b> | <b>\$ 5,222</b> | <b>\$ 5,131</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 265           | \$ 265          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 12,088        | \$ 1,384        | \$ 1,537        | \$ 1,833        | \$ 1,833        | \$ 1,833        | \$ 1,833        | \$ 1,833        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 3,303         | \$ 470          | \$ 501          | \$ 460          | \$ 431          | \$ 423          | \$ 459          | \$ 559          |
| # Materials            | \$ 24,906        | \$ 3,398        | \$ 3,175        | \$ 3,667        | \$ 3,667        | \$ 3,667        | \$ 3,667        | \$ 3,667        |
| # Overheads - External | \$ 3,055         | \$ 407          | \$ 467          | \$ 430          | \$ 403          | \$ 396          | \$ 429          | \$ 523          |
| <b>Total</b>           | <b>\$ 43,618</b> | <b>\$ 5,924</b> | <b>\$ 5,680</b> | <b>\$ 6,390</b> | <b>\$ 6,334</b> | <b>\$ 6,319</b> | <b>\$ 6,389</b> | <b>\$ 6,582</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG OSG Communications Tower Shelter Facility Improvements

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-003642 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>H1 2025      | <b>In-Service Date:</b><br>H2 2027  |

#### Project description:

The objective will be to provide new Communication shelter, and remediate existing shelters. AVANGRID OSG remote communication tower and shelter locations house critical communication network elements. Each location has specific needs to support critical network equipment for fiber, microwave, radio systems. These systems include AC & DC backup power systems, cabling, heating, ventilation and cooling systems, single point grounding systems and security access systems. They also provide for a redundant and diverse design for the network. Failures associated with these components will cause failures to critical communications circuits needed for reliable energy delivery and their associated monitoring systems. Failure to critical wireless networks that support day to day field operational voice systems, and worker health and safety monitoring systems. Through ongoing wireless and fiber expansion project efforts, AVANGRID will build communication facilities (towers and shelters) for AVANGRID OSG communications equipment. The new facilities will be security enhanced com huts, indoor racks and cabinets, outdoor enclosures. The facility will include the building structure, AC and DC power plant, HVAC, racks, inside plant fiber / wireless network elements, and ancillary equipment to establish the OSG equipment as operational and functional on the network.

#### Project Scope:

Engineering, purchasing and deployment of a remote monitoring system in shelter facilities for NMC and Field Operations to monitor tower lights, loss of power, generator fuel levels, water intrusion, temperature, and fire.

#### Project Benefits:

Failures associated with these components will cause failures to critical communications circuits needed for reliable energy delivery and their associated monitoring systems. Failure to critical wireless networks that support day to day field operational voice systems, and worker health and safety monitoring systems. Additional initiatives will include enhancements to ensure the reliability and availability of the OSG Com systems.

#### Project Risks and Mitigation Plan:

The Shelter program replaces existing shelters that are at end of life. In order to maintain operations of the equipment on the tower the new shelter needs to be installed prior to decommissioning. The risk to the project is space availability for the new shelter.

#### Risk of No Action:

The consequence of not replacing shelters is the loss of communications from environmental conditions such as water penetration dripping on equipment. The risks associated with failure of the equipment include loss of line protection between substations, loss of SCADA. Loss of Land Mobile Radio communications, Loss of IT connectivity. risk of not doing the project is the limitation of expansion at the site as there may not be enough space for more/newer equipment.

#### Project Alternatives:

Alternative to shelter replacement could be extension repairs to the existing shelter included but not limited to roofs, walls, doors, HVAC systems.

#### Basis for Project Estimates

Existing Framework agreements and quotes for similar activities in the past

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 37           | \$ 37         | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 975          | \$ 100        | \$ 375          | \$ 500          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 2,938        | \$ 463        | \$ 975          | \$ 1,500        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,950</b> | <b>\$ 600</b> | <b>\$ 1,350</b> | <b>\$ 2,000</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG FCC License Radio Spectrum purchase

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-003644 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>H1 2027      | <b>In-Service Date:</b><br>H2 2028  |

#### Project description:

The purchase of spectrum will provide NYSEG long term capabilities for enhancing wireless systems supporting SCADA including: control, monitoring, open and close functions, and station to station teleprotection application needs, enable expandability for field area network expansions, provide for redundant and diverse designs for the network elements and monitoring systems. Additionally this spectrum allows for enhancement of critical daily operational voice systems used to communicate to field operations and monitor the health and safety of AVANGRID field teams. The overall outcome of this program will be improved telecom wireless network reliability and field workforce efficiencies and safety.

#### Project Scope:

The program will procure wireless spectrum in multiple frequency bands serving all NYSEG divisions. There will be no spend in '25 and '26 and will resume in '27.

#### Project Benefits:

Improved wireless reachability for distribution and substation automation along with field workforce daily communication needs and safety monitoring.

#### Project Risks and Mitigation Plan:

The risk it that the licenses are not available at the time of purchase, if that were the case, Telecoms would look for other counties where to purchase licenses, if none is available that makes operational sense, there would be no mitigation possible.

#### Risk of No Action:

Frequency licenses are a finite asset, there is a limite amount of licences per county, so not purchasing them when needed could prevent future purchases.

#### Project Alternatives:

Public carrier services

#### Basis for Project Estimates

Avangrid has already purchased some of these licenses for some counties, so we undertand the pricing structure, which is dependant on the quantity of megahertz purchased and the population of the counties where the licenses belong.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,000        | \$ -        | \$ -        | \$ 500        | \$ 500        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,000</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 500</b> | <b>\$ 500</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NYSEG FAN +Mobile technology refresh and expansion

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-003639 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>H1 2025      | <b>In-Service Date:</b><br>H2 2027  |

#### Project description:

A land mobile radio (LMR) is a two-way communication system for voice communications used by Electric and Gas Operations to work in the field and with the ECC. It is a fundamental safety tool that helps coordinate work between crews and the ECC. It includes handheld, vehicle-mounted, and fixed base radios.

The Avangrid mobile radio system in New York is currently obsolete and requires a comprehensive upgrade. This modernization effort includes the implementation of a new core system, along with the installation of new base stations and the deployment of updated mobile and portable radios.

In the New York State Electric & Gas (NYSEG) service area, there is a critical need to extend service into the Lockport and Lancaster divisions, which currently lack adequate coverage. Additionally, the Brewster division requires enhancements to improve its service area. Finally, existing base stations across the remaining divisions must be replaced to ensure more reliable and efficient service.

#### Project Scope:

Upgrade the existing 30 year old LMR system with a new LMR system. Procure and activate a new Motorola Core Land Mobile Radio system.

Develop and deploy (2) new base stations in Lockport division and 5 new base stations in Lancaster division to provide service.

Enhance service in the Brewster division by deploying (2) new base stations. This will provide a modern and reliable system.

- build 2 additional sites in Lockport

- build 5 sites in Lancaster

- build 2 sites in Brewster

- Radios for RGE, Lancaster, Lockport

#### Project Benefits:

Reliable communication, by replacing and outdated system with a newer one. Enhanced Safety, efficient coordination among workers and teams, secure communications and wide coverage by deploying newer base stations with better technology in divisions that were lacking this service.

#### Project Risks and Mitigation Plan:

Tower work, like leases or structural analysis, runs into the risk of extensive lead times, which is usually mitigated by having secondary locations also ready to be developed if the primary don't evolve as needed.

Some of the lead times for materials are also very long, but they have been identified with the vendors and the supply is being accelerated.

#### Risk of No Action:

Due to how old the system is, it is Increasingly harder to find spare parts for life-cycle replacements. The longer the system is not replaced, the greater the risk of catastrophic failure, which would increase risk of accident for Electric and Gas Operations crews working in the field.

#### Project Alternatives:

There are no alternatives. The system is very old and the only path forward is to replace it.

#### Basis for Project Estimates

Existing quotes for similar work, quotes from vendors for work in this project.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023        | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|--|--|
| # AFUDC                | \$ 5            | \$ -        | \$ -        | \$ -        | \$ -        | \$ 5            |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # External Services    | \$ 1,082        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,082        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 1,087</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,087</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026            | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 242          | \$ 42         | \$ 100          | \$ 100          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 2,500        | \$ 200        | \$ 2,000        | \$ 300          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 3,758        | \$ 558        | \$ 1,500        | \$ 1,700        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,500</b> | <b>\$ 800</b> | <b>\$ 3,600</b> | <b>\$ 2,100</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Telecomm Vertical Builds

### PROJECT INFORMATION

|                                 |                                         |                                       |                                    |                                     |
|---------------------------------|-----------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>UI-N5296-NYSEG-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0          | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Operational SmartGrids Telecoms designs, builds or leases and maintains vertical assets such as self-supported towers and monopoles to maintain and expand the wireless networks. These vertical assets support Land Mobile Radio (LMR) for Electric and Gas Operations daily activities, wireless point to multipoint data communications for SCADA (Supervisory Control and Data Acquisition) services on reclosers, capacitor banks, voltage regulators and substations and wireless point to point data communications to replace carrier circuits and provide backhaul. The Energy Control Center utilizes SCADA data to remotely manage the Gas and Electric Grid. LMR is a voice communication system central to the switching and tagging activities of Electric and Gas Field Operations groups.

#### Project Scope:

The Vertical Infrastructure Program builds new sites, leases space on 3rd party towers, and upgrades existing assets such as monopoles or self supporting lattice towers to support the deployment of wireless communications.

- Building new site: acquisition of land by leasing, permitting, engineering, construction of the site, power, and backhaul connectivity (connecting the remote site to the Avangrid network)
- Leasing Space at a 3rd party site - engineering, design, construction of the site, power, and fiber backhaul to the Avangrid network
- Upgrading an existing asset - end of life replacements or upgrades to the existing asset to expand the capability of supporting new wireless equipment

#### Project Benefits:

Towers are needed to support the benefits provided by the systems that run off them. Land Mobile Radio will enhance Safety, efficient coordination among workers and teams by not relying in commercial systems and will be more resilient to storms. Point-to-multipoint wireless systems provide secure communications, improve distribution automation reliability and save OPEX as they replace cellular public services.

#### Project Risks and Mitigation Plan:

Risks Associated with vertical infrastructure program includes:

- An existing tower (owned or leased) is located near the site where the antenna and base station need to be located.
- Available of space for a shelter at the site or space on the tower for the antennas.
- Availability of space within owned sites such as service centers or substations to construct a tower and install a shelter
- Communications backhaul to connect the site to the network

#### Risk of No Action:

If new towers are not built nor existing towers are fixed, the telecom network is at risk, and its reliability will be jeopardized. Currently there are gaps in the wireless services provided by OSG Telecoms that need to be addressed so that internal users can benefit from them (land mobile radio for electric and gas operations, point to multipoint radio for distribution automation, point to point radio for high bandwidth communications when there is no fiber)

#### Project Alternatives:

An alternative to vertical assets depends on the use case. Land Mobile Radio antenna and base stations and other point to multi-point radio frequency communication links that Distribution Automation uses must be at an elevated position. Other systems such as point to point Microwave links can be replaced with extremely costly runs of fiber optic cable.

#### Basis for Project Estimates

Existing Framework agreements and quotes for similar activities in the past

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023            | 2024          |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------|--|--|
| # AFUDC                | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # External Services    | \$ 9,005        | \$ 2,462        | \$ 1,546        | \$ 2,289        | \$ 1,900        | \$ 809        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # Materials            | \$ 536          | \$ 285          | \$ -4           | \$ 34           | \$ 221          | \$ -0         |  |  |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 9,541</b> | <b>\$ 2,746</b> | <b>\$ 1,542</b> | <b>\$ 2,323</b> | <b>\$ 2,121</b> | <b>\$ 809</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026          | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 71            | \$ 71           | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 633           | \$ 175          | \$ 106        | \$ 76           | \$ 69           | \$ 69           | \$ 69           | \$ 69           |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 1,340         | \$ 126          | \$ 78         | \$ 242          | \$ 206          | \$ 202          | \$ 219          | \$ 267          |
| # Materials            | \$ 13,865        | \$ 1,069        | \$ 603        | \$ 2,633        | \$ 2,390        | \$ 2,390        | \$ 2,390        | \$ 2,390        |
| # Overheads - External | \$ 1,195         | \$ 107          | \$ 71         | \$ 216          | \$ 184          | \$ 181          | \$ 196          | \$ 239          |
| <b>Total</b>           | <b>\$ 17,104</b> | <b>\$ 1,548</b> | <b>\$ 858</b> | <b>\$ 3,167</b> | <b>\$ 2,849</b> | <b>\$ 2,842</b> | <b>\$ 2,874</b> | <b>\$ 2,965</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Carrier Ethernet Replacement

### PROJECT INFORMATION

|                                                  |                                                      |                                               |                                        |                                    |
|--------------------------------------------------|------------------------------------------------------|-----------------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-006461                     | <b>Charge Code:</b><br>Common                 | <b>Project Sponsor:</b><br>Jones, Paul | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Smart Grids | <b>Rate Case Category</b><br>Operational Smart Grids | <b>Project Stage:</b><br>IP3 Partial Approval | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

Operational SmartGrids (OSG) Telecom operates a carrier ethernet network delivering services for Substations, Offices, and control centers as well as traffic destined for NYISO (New York Independent System Operator). This network spans 200+ nodes transporting TDM (Time Division Multiplex) and IP (Internet protocol) services throughout the NYSEG.

The switches (models Ciena 5142, 5160 and 3926) are end of life and the manufacturer has provided notice that the platform will not get any new refreshes in the coming years, and that only critical upgrades to the operating system will be provided.

In 2017 NYSEG began deploying an IP/MPLS (Internet Protocol / Multi Protocol Label Switching) network within the Avangrid Secure Domain (ASD) program. With the limits in performance of the existing carrier ethernet switches, NYSEG will expand the existing IP/MPLS network to carrier ethernet locations minimizing overlaying additional network equipment and utilizing expertise and knowledge within Avangrid.

#### Project Scope:

This project will span 7 years starting in 2025.

Efforts will include:

- Survey of carrier ethernet switch locations (expected completion year 1) to analyze the services transported at each location, physical installation, power supply status, wiring to end-customer equipment and any other information to plan for the replacement
- Engineering of the replacement with IP/MPLS routers (expected execution year 1 through 3)
- Purchase of all routers, cards and ancillary material needed to fulfill the replacement (expected execution year 2 through 7)
- Facilities upgrades as needed (power plant, batteries, heating and cooling) (expected execution year 2 through 7)
- Staging and installation of the new routers in the existing locations (expected execution year 2 through 7)
- Migration of the services to the new routers in participation with ECC (Energy Control Center), SP&C (substations protection and control), P&C (protection and control) and ECS (Energy Control Systems) (expected execution year 2 through 7)

OSG Telecom will use a mix of contracted and internal resources for project management, survey, engineering, installation, provisioning and migration of the services. Professional services and materials will be procured through existing and future Framework Agreements.

#### Project Benefits:

The primary benefit of this project is to improve the resiliency of the telecom network. This is achieved through unifying the wired wide area network technology and eliminating equipment that is already End Of Sale, with their End Of Life approaching in the next two years.

OSG Telecom team members are very familiar with the routers that will be replacing the carrier ethernet switches which will mean shortening of the mean-time-to-repair of incidents in the network.

IP/MPLS networks have established themselves as reliable solutions for data centers, telecom carriers, and utilities worldwide. This extensive user base offers several advantages:

- Widespread Expertise: The operation of IP/MPLS networks is a skill more commonly held compared to previous technologies, ensuring a larger pool of knowledgeable professionals.
- Real-World Testing: The broad deployment of these networks across various real-world scenarios means that hardware and software are continuously tested and refined by numerous companies.
- Vendor Interoperability: Due to the necessity for telecom carriers to interact seamlessly, IP/MPLS networks are known for their interoperability. This makes it easier to find alternative vendors for equipment purchases.

#### Project Risks and Mitigation Plan:

The major risk of the project is to schedule the outages needed to migrate the relay protection services over the new routers. This will be coordinated with NYISO and RGE ECC in time and in a case by case basis.

**Risk of No Action:**

The carrier ethernet network transport key telecommunication services like relay protections, SCADA communications, operational voice and its correct operation is critical for the performance of the electrical network.

The vendor of the platform has announced that they will no further develop the platform's capabilities and will only push critical patches, so with time, new features will not be added to the platform, which jeopardizes the ability of the network to improve its performance and calls for its replacement.

**Project Alternatives:**

There is no alternative, the carrier ethernet nodes must be replaced, because there is not commitment from the vendor to carry on supporting the platform, and this jeopardizes the reliability and availability of the telecom network.

**Basis for Project Estimates**

Estimates are based on previously received quotes from vendors and contractors.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total       | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -        |      |      |      |      |      |  |  |
| # CIAC                 | \$ -        |      |      |      |      |      |  |  |
| # External Services    | \$ -        |      |      |      |      |      |  |  |
| # Internal - Non-AC    | \$ -        |      |      |      |      |      |  |  |
| # Internal, Labor      | \$ -        |      |      |      |      |      |  |  |
| # Internal, Overheads  | \$ -        |      |      |      |      |      |  |  |
| # Materials            | \$ -        |      |      |      |      |      |  |  |
| # Overheads - External | \$ -        |      |      |      |      |      |  |  |
| <b>Total</b>           | <b>\$ -</b> |      |      |      |      |      |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total       | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------------|------|------|------|------|------|--|--|
| <b>Total</b> | <b>\$ -</b> |      |      |      |      |      |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 35            | \$ -        | \$ 8            | \$ 8            | \$ 8            | \$ 6            | \$ 4            | \$ 3            |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 3,500         | \$ -        | \$ 750          | \$ 750          | \$ 750          | \$ 625          | \$ 375          | \$ 250          |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,400         | \$ -        | \$ 300          | \$ 300          | \$ 300          | \$ 250          | \$ 150          | \$ 100          |
| # Internal, Overheads  | \$ 1,185         | \$ -        | \$ 308          | \$ 243          | \$ 228          | \$ 186          | \$ 121          | \$ 98           |
| # Materials            | \$ 8,400         | \$ -        | \$ 1,800        | \$ 1,800        | \$ 1,800        | \$ 1,500        | \$ 900          | \$ 600          |
| # Overheads - External | \$ 1,372         | \$ -        | \$ 357          | \$ 281          | \$ 264          | \$ 216          | \$ 140          | \$ 114          |
| <b>Total</b>           | <b>\$ 15,891</b> | <b>\$ -</b> | <b>\$ 3,522</b> | <b>\$ 3,382</b> | <b>\$ 3,349</b> | <b>\$ 2,783</b> | <b>\$ 1,690</b> | <b>\$ 1,165</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total       | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------------|------|------|------|------|------|------|------|
| <b>Total</b> | <b>\$ -</b> |      |      |      |      |      |      |      |

## Sonet Replacement

### PROJECT INFORMATION

|                                                  |                                                      |                                        |                                        |                                    |
|--------------------------------------------------|------------------------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                            | <b>Project ID:</b><br>PRJ-006463                     | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Jones, Paul | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Smart Grids | <b>Rate Case Category</b><br>Operational Smart Grids | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

OSG Telecom operates SONET rings to deliver services for Substations, Offices, and Control Centers as well as traffic destined for NY-ISO. This network spans 100+ nodes transporting TDM and IP services throughout the state. The SONET manufacturer has provided notice that the SONET and T1 MUX platform have an end-of-sale date in Q2 of 2025 with unit repair and return services to be terminated in 2032 if components remain economically viable and are available. In 2017 NYSEG/RGE began deploying an IP/MPLS network with the Avangrid Secure Domain. With the impending retirement of the SONET platform the expansion of the existing IP/MPLS network to SONET locations allows a rapid deployment, minimizes overlaying additional network equipment, and utilizes existing expertise and knowledge within NYSEG/RGE.

#### Project Scope:

This project will span 7 years starting in 2025.

Efforts will include:

- Survey of SONET locations (expected completion year 1)
- Engineering of the replacement with IP/MPLS routers (expected execution year 1 through 3)
- Purchase of all routers, cards and ancillary material needed to fulfill the replacement (expected execution year 2 through 7)
- Facilities upgrades as needed (power plant, batteries, heating and cooling) (expected execution year 2 through 7)
- Staging and installation of the new routers in the existing locations (expected execution year 2 through 7)
- Migration of the services to the new routers in participation with ECC and SP&C (expected execution year 2 through 7)

OSG Telecom will use a mix of contracted and internal resources for project management, survey, engineering, installation, provisioning and migration of the services. Professional services and materials will be procured through existing and future Framework Agreements.

#### Project Benefits:

The primary benefit of this project is to improve the resiliency of the telecom network. This is achieved through unifying the wired wide area network technology and eliminating equipment that is already End Of Sale, with their End Of Life approaching in the next two years.

OSG Telecom team members are very familiar with the routers that will be replacing the SONET equipment. This will result in reducing the mean-time-to-repair of incidents in the network.

IP/MPLS networks have established themselves as reliable solutions for data centers, telecom carriers, and utilities worldwide. This extensive user base offers several advantages:

- Widespread Expertise: The operation of IP/MPLS networks is a skill more commonly held compared to previous technologies, ensuring a larger pool of knowledgeable professionals.
- Real-World Testing: The broad deployment of these networks across various real-world scenarios means that hardware and software are continuously tested and refined by numerous companies.
- Vendor Interoperability: Due to the necessity for telecom carriers to interact seamlessly, IP/MPLS networks are known for their interoperability. This makes it easier to find alternative vendors for equipment purchases.

#### Project Risks and Mitigation Plan:

The major risk of the project is to schedule the outages needed to migrate the relay protection services over the new routers. This will be coordinated with NYISO and NYSEG ECC in time and in a case by case basis.

#### Risk of No Action:

The SONET network transport key telecommunication services like relay protections, SCADA communications, operational voice and its correct operation is critical for the performance of the electrical network.

As the vendor of the platform has announced it's end of sale and end of live, it is critical to replace the SONET nodes with other devices. If this is not achieved, there is no commitment by the vendor to provide spares or support: The SONET manufacturer has provided notice that the SONET and T1 MUX platform have an end-of-sale date in Q2 of 2025 with unit repair and return services to be terminated in 2032 if components remain economically viable and are available.

There is no alternative, the SONET nodes must be replaced, because there is not commitment from the vendor to carry on supporting the SONET platform, and this jeopardizes the reliability and availability of the telecom network.

Estimates are based on previously received quotes from vendors and contractors.

**Actual Capital Spent, all amounts shown below in thousands (\$'000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Avangrid Security Domain (ASD) OSG Telecommunications (NYSEG)

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-002396 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Deployment of the telecommunications infrastructure such optical transport nodes and routers for Avangrid traffic (Gas SCADA, IT, Revenue Metering, Physical Security services and ASD traffic).

#### Project Scope:

Design, installation and commissioning of optical transport nodes and routers in coordination with Physical Security, SCADA, IT, AMI and other groups within Avangrid Networks.

#### Project Benefits:

Improve the resiliency and reliability of the telecommunications network that services SCADA and automations.  
Reduce OPEX by means of implementing a multi-service network.  
Increase flexibility of the telecommunications network, easing deployment of new services in the network reducing Time-To-Market.  
Interconnect all the OPCOs in a single network to allow for data center consolidation.  
Continued expansion of Telecommunications Infrastructure for all Avangrid automation programs.

#### Project Risks and Mitigation Plan:

Environmental issues might arise while deploying the telecommunications equipment which might involve improving the HVAC and noise isolation systems within the substations.  
Power systems in substations and service centers might need to be upgrade to be able to provide enough power to support the new systems.  
An audit of the environmental systems where new nodes are deployed will be carried out to help identify if issues will arise.

#### Risk of No Action:

if the program doesn't carry on, the Physical Security deployment and migration to the new system will halt to a stop, making the company liable of fines due to non compliance

#### Project Alternatives:

No alternatives available since there is such a great amount of network devices already deployed that changing the solution would not be practical

#### Basis for Project Estimates

Estimates are based on previously received quotes from contractors.



## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020        | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 307           | \$ -        | \$ 15           | \$ 286          | \$ 1            | \$ 5            |  |  |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 18,832        | \$ -        | \$ 4,339        | \$ 5,654        | \$ 5,690        | \$ 3,149        |  |  |
| # Internal - Non-AC    | \$ 343           | \$ -        | \$ -            | \$ -            | \$ 70           | \$ 274          |  |  |
| # Internal, Labor      | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Overheads  | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 228           | \$ -        | \$ -            | \$ 23           | \$ 136          | \$ 69           |  |  |
| # Overheads - External | \$ -             | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 19,711</b> | <b>\$ -</b> | <b>\$ 4,354</b> | <b>\$ 5,964</b> | <b>\$ 5,897</b> | <b>\$ 3,497</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 129          | \$ 129          | \$ 1            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 807          | \$ 439          | \$ 368          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 281          | \$ 153          | \$ 128          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 582          | \$ 298          | \$ 284          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 4,407        | \$ 2,341        | \$ 2,066        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 573          | \$ 285          | \$ 289          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,779</b> | <b>\$ 3,645</b> | <b>\$ 3,134</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## NYSEG Data Center Consolidation

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-001256 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

The goal of the Data Center Consolidation Project is to consolidate the 15 AVANGRID data centers hosting OSG workloads in order to mitigate obsolescence risks due to the state of the current data centers and as part of the strategic consolidation of the current existing Data centers into fewer core data centers, one in East Coast (Orange – CT) and other potentially in West Coast (Portland-OR). This data center consolidation project will allow capturing a total annual net infrastructure and operational efficiencies due to the consolidation of locations & services reduction.

#### Project Scope:

Incremental Data Center Consolidation across the Avangrid Operations Technology footprint based on implementing new state of the art technology infrastructure, which will allow a reduction of the current footprint by virtualizing and consolidating the current infrastructure, increase the operational reliability, incorporate Avangrid's cybersecurity solutions, and provide enhanced service to the different business areas. This is a multi-year project spanning from 2026 – 2034.

#### Project Benefits:

Through the consolidation of many Data Centers, which are dispersed over the entire Avangrid footprint, into fewer locations is beneficial by the savings in facilities costs, efficiencies of support personnel, standardization and improvements of infrastructure, increased resiliency and increased operational effectiveness.

- Highly resilient, concurrently maintainable data centers
- Significant financial cost reductions derived from OT infrastructure consolidation, DC consolidation, and avoidance of new DC buildout due to currently stranded power constrained by limited remaining whitespace
- Improved service delivery engagement model that aligns technology investment with business outcomes – implement tighter integration with business
- Reduced complexity and business risk due to consolidation of 15 data centers to 2 modern hosting centers
- Improved workload flexibility
- Aligns with regulated utility core infrastructure under rate base and rate of return regulation
- Aligns with Avangrid's operational strategic objectives of providing internal operations and customers within its footprint increased capabilities and results for situational awareness, reporting capacity, system reliability, and system availability
- Aligns with Avangrid's operational strategy of aligning all networks under a single unified data model
- Aligns with Avangrid's operational objective of orienting investment toward innovative solutions which prepare the company for future and emerging needs

#### Project Risks and Mitigation Plan:

This long-term strategy will allow a reduction of the current footprint by virtualizing and consolidating the current infrastructure to increase the operational reliability, incorporate Avangrid's cybersecurity solutions, and provide enhanced service to the different business areas in the coming years, and allow capturing a total annual net infrastructure and operational efficiencies due to the consolidation of locations & services reduction. This new data center will allow leverage with the implementation of a new Disaster Recovery (DR) schema (with another AVANGRID data center most likely the one located in Portland-Oregon), that will enhance current DR model.

Avangrid is advised to remediate the following gaps:

- Improving Business Impact Analysis (BIA) would produce proper Recovery Time Objective (RTO) and Recovery Point Objective (RPO) tiering specifications
- Approximated storage information, with no available differentiation between used and available storage amounts
- Lack of operational controls and metrics prevents properly administered infrastructure management
- Application to infrastructure mapping
- Unavailable compute, storage and network historical growth trends

#### Risk of No Action:

If Data Center Consolidation project is not executed, the obsolescence risk of current data centers will not be mitigated.

- Existing data center portfolio is not suitable for long-term technology hosting with significant resiliency gaps, Disaster Recovery issues, Support
- All data centers included in the assessment process have at least one critical infrastructure system with no redundancy (i.e., Uptime Tier I Equivalent)
- Maintenance and operations practices for critical electrical and mechanical equipment is deficient across all data centers
- Physical security protocols for systems for each data center are inconsistent, and in many cases are lacking.

Avangrid is now prepared to move forward in establishing Avangrid's data center consolidation strategy with the development of the following:

- Deep-Dive Analysis: (Deep-Dive Discovery/Application Analysis, and Detailed Design & Business Case)
- Migration Planning and Execution
- Approval of the next steps is strongly recommended as these activities will enable Avangrid to meet their desired operational and procedural efficiency goals.

The estimate for this project was based on the following:

1. External Services: An estimate from General Services was provided for the cost to build/create a new space and to be able to house a secure location for the new data centers. This included quotes from Delta Engineering and other external vendor services utilized for DC2 Relocation project. Known External Services were added into the project forecast estimate based on contractor SMEs and the timeline of the project. Management support and application vendors assumed to be available when needed for Professional Services.

2. Materials: A Bill of Materials (BOM) was created to determine all hardware, software, and professional services needed to build/create a new data centers.

3. AFUDC (Used avg. of 0.06757% for the over all budget)

4. Overheads - Internal & External (Used avg. of 0.06% for the over all budget)

5. Internal Labor charges (Project Management and Field Operations personnel charging their time during the implementation)

Details provided in the Cost Estimates sheet. Vendor quotes attached for reference.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024          |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|---------------|--|--|
| # AFUDC                | \$ -          | \$ -        | \$ -        | \$ -        | \$ 9          | \$ -9         |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # External Services    | \$ 496        | \$ -        | \$ -        | \$ -        | \$ 339        | \$ 157        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 496</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 348</b> | <b>\$ 148</b> |  |  |

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 328           | \$ 217          | \$ 108          | \$ 1            | \$ 1            | \$ 1            | \$ 1            | \$ 1            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 15,471        | \$ 1,469        | \$ 1,756        | \$ 2,812        | \$ 2,359        | \$ 2,359        | \$ 2,359        | \$ 2,359        |
| # Internal - Non-AC    | \$ 3,672         | \$ 79           | \$ 714          | \$ 595          | \$ 571          | \$ 571          | \$ 571          | \$ 571          |
| # Internal, Labor      | \$ 3,177         | \$ 233          | \$ 161          | \$ 614          | \$ 542          | \$ 542          | \$ 542          | \$ 542          |
| # Internal, Overheads  | \$ 3,219         | \$ 347          | \$ 178          | \$ 605          | \$ 481          | \$ 472          | \$ 512          | \$ 624          |
| # Materials            | \$ 18,910        | \$ 1,907        | \$ -            | \$ 3,872        | \$ 3,283        | \$ 3,283        | \$ 3,283        | \$ 3,283        |
| # Overheads - External | \$ 3,643         | \$ 353          | \$ 221          | \$ 686          | \$ 549          | \$ 539          | \$ 584          | \$ 711          |
| <b>Total</b>           | <b>\$ 48,421</b> | <b>\$ 4,604</b> | <b>\$ 3,137</b> | <b>\$ 9,185</b> | <b>\$ 7,785</b> | <b>\$ 7,766</b> | <b>\$ 7,852</b> | <b>\$ 8,091</b> |

[illegible]

## Storm System (ARCOS improvement / Replacement)

### PROJECT INFORMATION

|                                                     |                                                      |                                        |                                        |                                    |
|-----------------------------------------------------|------------------------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                               | <b>Project ID:</b><br>PRJ-005328                     | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Aith, Jorge | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Processes and Technologies | <b>Rate Case Category</b><br>Operational Smart Grids | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing |

#### **Project description:**

System for both daily operations and emergency scenarios. Seamless API integration with SAP, Salesforce platform and OMS systems for automatic update of data and shifts for the creation of call outs, managing how to communicate resource request and receive resource responses from responding contractors with Avangrid and industry standards.

#### **Project Scope:**

The following sections identify business requirements at a high level.

- The feature needs to support automated phone calls, text messages, and emails to alert and notify team members and external resources.
- Include the ability to track responses, receive acknowledgments, and escalate notifications if necessary.
- The solution must be user-friendly and integrate seamlessly with our current system.
- Support from the solution team is needed to increase adoption/utilization to ensure full benefit of the solutions. Support is also needed to ensure it can be fully integrated with, SAP, and our new scheduler/mobile solution.
- Responses to callouts that are real time.
- The ability to manage, gain real time visibility of people and collaborate with both internal and external resources using one system.
- One system to transition from day-to-day operations to emergency mode and back again.
- Mobile technologies that get information from people in the field to the managing teams back at the home office.
- Mobile application for field workers to check status of availability.
- Reporting and Analytics: Provide automated detailed reports for callout performance.
- Reporting functions in mass vs one by one
- Ability for employees to update status or alerts vs manually updating
- Mass updating work mode (Blue sky to Gray and vice versa)
- Functionality to search employees, roles, and areas by keywords
- Call out list automatically updates vs manual updates
- Easy and fast contractor resource mobilizations.
- Ability to manage responding partners (contractors) through sharing rosters, automated request, and responses.
- Ability to build in union regulatory requirements for call outs.
- SIREN notifications for company wide information to all employees (email, Text, mobile app)
- Single Sign on.
- On-site training at Avangrid facilities in the USA territory.
- Message Personalization: Enable customization of call-out message with specific details.

#### **Project Benefits:**

- Reduce restoration time
- Real-time GPS Tracking
- Timesheet & invoice automation
- Save money & improve cost recovery
- Better information to make decisions
- Improve regulatory relations
- Fully integrate with core systems
- Vendors already on-boarded (probably)
- Easy to use

#### **Project Risks and Mitigation Plan:**

The biggest risk is the recoverability of the cost associated with storm events, as well as not being able to follow the recommendations of the NYMA audit and continue using manual processes for storm response. The contingency plan would be to reach out to our current vendor that we are using for emergency response for a call-out system as they currently don't have an emergency response solution that meets the regulatory and operational needs we have, with the hopes of getting them to develop one as we don't have ownership of the solution.

#### **Risk of No Action:**

Service reliability. Increased CAIDI/SAIDI response time and puts the company at risk of potential penalties. Conflicts with callout rules regarding union contracts and other policies.

WRM, SEW, ARCOS and Salesforce were evaluated as possible solutions for this project. But due to technical feasibilities, growth and future considerations and evaluating operational efficiencies and costs, Salesforce ended up being the winning bid.

The project still hasn't selected the final vendors yet, but this project could be considered a continuation of the FieldForce/ New Scheduler project , which is implementing the new scheduling and dispatching solution, as this project is implementing a storm response system building on top of what FieldForce/New Scheduler had accomplished. The costs for external services were estimated from early conversations with vendors, this estimation was able to be done as the audience will be the same as in FieldForce/New Scheduler, therefore providing a basis for the estimate.

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025            | 2026            | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 106          | \$ 106          | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 3,943        | \$ 1,179        | \$ 1,843        | \$ 921          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 1,189        | \$ 507          | \$ 455          | \$ 227          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 461          | \$ 154          | \$ 220          | \$ 87           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 706          | \$ 246          | \$ 330          | \$ 130          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 6,405</b> | <b>\$ 2,192</b> | <b>\$ 2,848</b> | <b>\$ 1,366</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## DC2 (Station 80) Relocation Project NYSEG

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>NYSEG           | <b>Project ID:</b><br>PRJ-005881 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>Sep-2024     | <b>In-Service Date:</b><br>H2 2027  |

#### Project description:

The equipment and applications, as well as the current DC2 (Station 80) site, are not stable and must be moved to a new location. DC2 (Station 80) is not a suitable data center for this critical equipment as it is currently a mobile trailer with insufficient environmental capacity. In June 2023 there was a catastrophic failure of the HVAC system and all the equipment within the structure was exposed to prolonged high temperatures. This resulted in DC2 (Station 80) going down and damaged ASD equipment. The relocation and installation of new equipment to support the ASD will ensure Avangrid's ability for the Physical Security, Security Operations Center (SOC), Network Operations Center (NOC), and the Network Monitoring Center (NMC) to comply with and support cybersecurity, regulatory and operational needs that are supported by the ASD.

This project's objective is to purchase and install new equipment (Telecom, Network and Servers) into the Operational Smart Grid (OSG) Disaster Recovery (DR) location at 18 Link Dr., Kirkwood, NY. Once the equipment and applications are successfully transitioned, the existing DC2 (Station 80) located at 485 Leigh Station Rd., West Henrietta, NY.

All equipment located at DC2 (Station 80) will then be decommissioned and no longer used in support of the ASD.

#### Project Scope:

The project's scope is to move the existing Avangrid Secure Domain (ASD) Disaster Recovery infrastructure at DC2 (Station 80) in West Henrietta, NY, to the Kirkwood, NY Data Center. Specifically, this includes equipment (Telecom, Network and Servers) and applications for the ASD Data Center 1 (DC1) PROD environment (all OpCos). Applications and Services supported by the ASD include:

- AMAG (American MAGnetics) Symmetry & Connect: Physical Access Security Management System used to perform badge ID management functions and to ensure management and surveillance of physical access including intrusions and provide access history and management linked to the ASD monitoring and cybersecurity tools.
- Video Management Systems: Provides a unified video gathering and analytics software that enables intelligent analysis of pre-defined event types as they are streamed from all video surveillance cameras deployed on the Avangrid sites.
- Centralized Internet Protocol (IP): Provides connected intercom functionality to all connected remote sites that can eventually be linked to incident response activities.
- Applications: Centrally store (using a digital password vault), manage, control and log access to privileged account passwords.
- LogRhythm (Security Information and Event Management (SIEM) Software Platform): Collects all logs coming from network devices or applications to produce correlation events and trigger the incident response process. This application is interfaced with the Governance Risk Management functionality.
- Tenable, TrendMicro: Assess and manage any potential Malware, Threat, and Vulnerabilities.

The above will be accomplished by leveraging the existing Kirkwood Datacenter site, building out all new supporting infrastructure and equipment and then transitioning all the existing applications to the new infrastructure. Once operational and in production, the old Station 80 location will be shut down, old equipment removed and decommissioned.

#### Project Benefits:

"Relocation of the current Data Center 2 (Station 80) location (DC2), provides a stable Disaster Recovery site for the Avangrid Secure Domain (ASD) and meets the Cyber Security requirement needs at all Avangrid USA locations including Threat, Vulnerability, and Risk Management Controls per NERC CIP Standards to include:

- CIP-005 Electronic Security Perimeter(s).
- CIP-006 Physical Security of BES Cyber Systems.
- CIP-007 System Security Management.
- CIP-009 Recovery Plans for BES Cyber Systems.
- CIP-010 Configuration Change Management and Vulnerability Assessments.

**Project Risks and Mitigation Plan:**

Top Risks & Mitigation Plan(s) for this project include:

1. Station 80 is unstable. This is evident from the failure with HVAC units in 2023. The mitigation plan is to relocate this Data Center to Kirkwood NY and build a new Data Center (DC2).
2. Build-out of space at Kirkwood for the new DC2 Data Center timeline is nearly 1 year. The mitigation plan is to have weekly meetings with external services (Delta Engineers) and General Services, along with periodic design review meetings with a larger group of internal Stakeholders. This plan is to identify any areas of schedule crashing/compression to reduce the 1 year timeline.
3. The project's budget is above what was previously approved at ESP/GSP on 9/4/2024. The mitigation plan is to complete a new PPM template and prepare for another ESP/GSP meeting on 3/4/2025 with the goal of obtaining more funding.

**Risk of No Action:**

1. Station 80 is currently unstable and there is a risk of failure again if we do not relocate this data center from a stand-alone shelter to an actual building where it can be properly maintained environmentally and physically by staff.
2. The schedule needs to be crashed/compressed where possible to reduce the overall project's timeline to reduce the risks listed above with the instability of Station 80.
3. The project cannot be completed in scope if we do not secure sufficient budget.
4. Failure to complete the project would result in reactive dollars spent if/when additional failures at Station 80 occur due to inadequacies and instability of the structure.
5. Additional failures at Station 80 would directly affect the stakeholders (i.e., customers, shareholders, and communities) serviced by NYSEG & RGE.

**Project Alternatives:**

Alternative 1: Stabilize Station 80. SMEs on the project team reviewed this and there is no way to create permanent stability to Station 80 at its current location. The reason for this is that Station 80 is an existing shelter at an Electric Transmission substation. Space is limited and the data center cannot be expanded. There is no onsite personnel. Only alarms monitored by a 3rd party contractor, UTI, is the current reaction to any temperature changes in the shelter. The alternative ideas included a new shelter and transferring equipment to a new shelter, but even the largest shelter would not accommodate future growth or provide a proper climate controlled environment or sufficient personnel space. Therefore, this alternative was not cost estimated.

The preferred solution is to build-out a new space in an existing Avangrid/NYSEG building located at 18 Link Drive in Kirkwood NY. This was selected as the office location is the main headquarters for NYSEG and that Station 80 is a backup data center to the former 89 East Ave data center in Rochester that has been/is in the process of being relocated to Vestal, NY which is only several miles from the Kirkwood NY location. This solution address the above risk #1 to Station 80 as well as allowing for increased data center growth and monitoring by Avangrid personnel.

**Basis for Project Estimates**

The estimate for this project was based on the following:

1. A Bill of Materials (BOM) was created to determine all hardware, software, and professional services needed to build/create a new data center at Kirkwood NY.
2. An estimate from General Services was provided for the cost to build/create a new space at the Kirkwood NY location to be able to house a secure location for the new data center, DC2. This included quotes from Delta Engineering and other external vendor services.
3. Known External Services were added into the project forecast estimate based on contractor SMEs and the timeline of the project.
4. Assumed percentages for both internal and external Overheads, as well as AFUDC were calculated and added to the project estimate.
5. Internal labor hours were based on the 89 East Ave project hours because this DC2 project is very similar in project scope to that project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020        | 2021        | 2022        | 2023        | 2024         |  |  |
|------------------------|--------------|-------------|-------------|-------------|-------------|--------------|--|--|
| # AFUDC                | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # CIAC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # External Services    | \$ 37        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 37        |  |  |
| # Internal - Non-AC    | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Labor      | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Internal, Overheads  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Materials            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| # Overheads - External | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 37</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 37</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027            | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|-----------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 1,184        | \$ -        | \$ 344          | \$ 840          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,298        | \$ -        | \$ 1,257        | \$ 41           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ 29           | \$ -        | \$ 28           | \$ 1            | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 585          | \$ -        | \$ 566          | \$ 20           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 730          | \$ -        | \$ 712          | \$ 18           | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 4,818        | \$ -        | \$ 4,669        | \$ 149          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 807          | \$ -        | \$ 787          | \$ 20           | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 9,451</b> | <b>\$ -</b> | <b>\$ 8,362</b> | <b>\$ 1,089</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



## Integrated Forecasting Solution

### PROJECT INFORMATION

|                                                              |                                                      |                                        |                                            |                                    |
|--------------------------------------------------------------|------------------------------------------------------|----------------------------------------|--------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                                        | <b>Project ID:</b><br>PRJ-006415                     | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Donnelly, Kevin | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Smart Grids Innovation and Planning | <b>Rate Case Category</b><br>Operational Smart Grids | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>H1 2026              | <b>In-Service Date:</b><br>H2 2027 |

#### Project description:

Acquisition and implementation of a software tool that will extract AMI data and SCADA data as needed from SAP, SCADA System, or a designated data lake. Software will also ingest load forecasts and defined customer psychographic, demographic, and physical attribute data. The software will act as the client-server application used to aggregate all the information together, assign forecast model templates, and generate granular (i.e. 8,760 Hourly) forecasts for each of the nodes we define (e.g. circuits, substations). The tool will also allow for simulating various growth/adoption scenarios at the circuit level and estimate long-term impacts on hourly loads. This level of granular scenario forecasting and analysis will be critical to our ability to proactively plan for electrification impacts and develop our base load forecast. This is one of the Company's response actions to the NY Management Audit Recommendation to improve Electric Load Forecasting. NY Management Audit Report Recommendation -- Improve the electric load forecasting model(s) to address issues specific to NYSEG and RG&E, focusing on the following:

- 1.1 Accuracy
- 1.2 Weather normalization methodologies
- 1.3 Sector segmentation
- 1.4 Forecasting horizon
- 1.5 CLCPA considerations
- 1.6 Econometric equation specification

#### Project Scope:

The requirements of the Integrated Forecasting Solution will be provided in a request for proposals (RFP) to a set of identified vendors who provide this software. Proposals will be evaluated based on how well they meet the technical requirements defined in the RFP and based on cost. The technical requirements for this solution include, but are not limited to:

- Cloud based forecast solution with a web portal user interface.
- Produce reliable daily, hourly, and sub-hourly electric energy and demand forecasts from one to twenty years ahead. Should include distributed generation forecasts.
- Should ingest historical hourly and/or sub-hourly load data from AMI and SCADA.
- Should produce forecast for specified delivery points including circuit, substation, division, zone, or utility service territory. Should provide summary tabular and graphical view of results.
- Should have the ability to identify and define customer types based on like attributes or energy consumption.
- Should incorporate historic data to feed forecast scenarios including historic load data of different customer types.
- Should incorporate any predefined forecast models or assumptions such as macro-economic assumptions, EV adoption, or building electrification.
- Allow users to identify and display historical data and forecasted data by customer type.
- Compare forecast to actual.
- Ability to extract underlying historic and forecast data to Excel.
- Ability to run multiple scenarios based on changed assumptions

#### Project Benefits:

This software tool will enable complex granular (8760) forecasting models that are expected by the NY PSC and other stakeholders. Granular forecasts will allow for more informed distribution and transmission planning to identify and build system capacity that meets load growth requirements as well as bi-ennial DSIP filing requirements. Granular forecasts will allow the Company to effectively engage in and meet the vision identified in the Proactive Planning proceeding.

#### Project Risks and Mitigation Plan:

Risks:

- The potential for off-the-shelf software solutions to not align with our requirements.
- Cost exceeds budget
- Long setup period

Mitigation Plan:

- Research vendor solutions to have a thorough understanding of the latest related products.
- Create a clear and robust set of requirements.
- Ensure vendors commit to timeline as part of contracting process.
- Seek the lowest cost vendor and negotiate scope to ensure budget requirements are met.

**Risk of No Action:**

Without producing granular forecasts, the Company will be reactively addressing customer and stakeholder needs related to load growth and system capacity constraints instead of addressing needs on a proactive basis. The Company will not be able to effectively engage in and meet the vision identified in the Proactive Planning proceeding. Additionally, the bi-ennial DSIP filing requires hourly (8760) load forecasts by distribution circuit/substation and a tool is required to support these efforts. Capacity constraints will be a barrier to customer adoption of electrification.

**Project Alternatives:**

N/A

**Basis for Project Estimates**

Vendor quotes.

**FINANCIAL INFORMATION****Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                 | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC    | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor      | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads  | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>           | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2025        | 2026          | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|---------------|-------------|---------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 40         | \$ -        | \$ 30         | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -          | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 806        | \$ -        | \$ 605        | \$ 202        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 40         | \$ -        | \$ 30         | \$ 10         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -          | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -          | \$ -        | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 886</b> | <b>\$ -</b> | <b>\$ 665</b> | <b>\$ 222</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total       | 2025        | 2026        | 2027        | 2028        | 2029        | 2030        | 2031        |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |



# **RG&E Common Operational Smart Grids**

## Cyber Recovery Solution

### PROJECT INFORMATION

|                                 |                                  |                                         |                                    |                                     |
|---------------------------------|----------------------------------|-----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-004451 | <b>Charge Code:</b><br>Project          | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>LaPerle, Bryan | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

A Cyber recovery tool to be used with the OSG network to provide a cyber recovery solution for our our critically prioritized applications. This Recovery tool is to enable an efficient and resilient recovery option for the critical applications.

#### Project Scope:

No dollars for P25. This solution will create a framework that will integrate a Cyber recovery solution and controls with the existing backup solutions being used within the OSG network. The project will determine the location(s) of the solution. Determine the needed equipment, licenses, services, and maintenances agreements. Training will be included in the project plan as well as resource needs for a successful outcome. The project will include a lifecycle of 3 to 5 years, with the project plan will include a post lifecycle/migration plan outline for the replacement or the next phase of the project.

#### Project Benefits:

Some of the benefits of having the Cyber recovery solution will be to allow for a decreased Recovery Time in returning critical operations back to a normal state after a cyber event. When we return our operations back to a normal state we reduce the negative impact of the event. With a Cyber Recovery solution we protect Avangrid's People, Finances, and Reputation

#### Project Risks and Mitigation Plan:

The current project risks at this stage of the planning Our understanding where the proof of concept for this project will be where the final project will reside permanently the resource demand to properly drive this project with the correct know how expertise and historical knowledge of avangrid osg networks. External projects may also add to the risks of completion or timeline of this project. By funding this project we will understand needs with the proper buy in from other departments and other groups within and outside of OSG.

#### Risk of No Action:

This project will add a more secure layer in the safeguarding of our most critical data.

If this project is not undertaken and existing backup of data is compromised, we run the risk of losing data that is required and utilized by our operational systems and may not be able to be retrieved at all or in a timely manner. This project will allow for us as an organization within networks to safeguard our most critical data outside of normal backup and recovery solutions. If this data is lost or is held captive by a ransom attack the company may need to pay fines and other Unscheduled costs to retrieve the data, if the data is retrievable at all.

#### Project Alternatives:

At this time in operational smart grids and networks there's no cyber recovery solution to compare as an alternative too. The current solutions are the data center backup and restore solutions the proposed solution would this project be external to those solutions and run in parallel but not be included in the normal process of data backup. And the solution is proposed to be in a separate site with very strict operating hours. The proposed solution that we are reviewing is a specific to operational technologies as opposed to attempting to retro fit an information technology solution.

#### Basis for Project Estimates

The project estimates were derived by market research on solutions working with different vendors and Internal knowledge within Avangrid. The research on total cost is ongoing but this proposed amount was reviewed originally with the project sponsor. The costs include hardware software and engineering services is an estimate for the project initial kickoff in a staged project environment.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|-------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC     | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor       | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads   | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials             | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027          | 2028          | 2029          | 2030        | 2031        |
|------------------------|-----------------|-------------|-------------|---------------|---------------|---------------|-------------|-------------|
| # AFUDC                | \$ 136          | \$ -        | \$ -        | \$ 45         | \$ 45         | \$ 45         | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # External Services    | \$ 1,763        | \$ -        | \$ -        | \$ 588        | \$ 588        | \$ 588        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Internal, Labor      | \$ 99           | \$ -        | \$ -        | \$ 33         | \$ 33         | \$ 33         | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,998</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 666</b> | <b>\$ 666</b> | <b>\$ 666</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

| Data Center Lifecycle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                  |                                        |                                    |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| PROJECT INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                        |                                    |                                     |
| <b>OpCo:</b><br>RG&E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Project ID:</b><br>PRJ-006467 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |
| <b>Project description:</b><br>Annual lifecycle of end-of-life/support Data Center, Unix/Linux (server and workstation), Data Protection, and Storage Infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                  |                                        |                                    |                                     |
| <b>Project Scope:</b><br>Data Center Lifecycle: Includes in-rack PDUs, ATSS, rack fans, out-of-band access solutions, structured cabling, crash carts, copper and fiber optic tools, accessories, and associated external services and maintenance agreements.<br><br>Data Protection Lifecycle: Includes data protection appliances/licensing and associated external services and maintenance agreements.<br><br>Database Appliance Lifecycle: Includes database appliances/licensing and associated external services and maintenance agreements.<br><br>Server Lifecycle: Includes servers and associated external services and maintenance agreements.<br><br>Workstation Lifecycle: Includes workstations, monitors, and peripherals with associated external services and maintenance agreements.<br><br>Storage Lifecycle: Includes storage appliances and associated external services and maintenance agreements. |                                  |                                        |                                    |                                     |
| <b>Project Benefits:</b><br>Replace aging infrastructure approaching end of life and no-longer supported by manufacturer in support of uptime, recoverability, and support for incidents from equipment manufacturers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                  |                                        |                                    |                                     |
| <b>Project Risks and Mitigation Plan:</b><br>The risks of failing to lifecycle hardware no-longer under support with the manufactures include increased risk of hardware failure with limited availability of spare parts from reputable (non gray-market) sources--which can result in extended outages as well as risk of security vulnerabilities which cannot be patched. Mitigations can include third-party (non-OEM) support contracts, and purchasing stocks of spare parts to reduce the duration of outages--which can partially mitigate the support risks--but not the security risks.                                                                                                                                                                                                                                                                                                                          |                                  |                                        |                                    |                                     |
| <b>Risk of No Action:</b><br>The risks of performing no action--as above--are running on hardware no-longer under support with the manufacturer including increased risk of hardware failure with limited availability of spare parts from reputable (non gray-markey) sources--which can result in extended outages as well as risk of security vulnerabilities which cannot be patched. This can result in loss of SCADA such that Electric or Gas operations would need to send out field crews for manual visibility at significant cost and which cannot be maintained for an extended period of time.                                                                                                                                                                                                                                                                                                                 |                                  |                                        |                                    |                                     |
| <b>Project Alternatives:</b><br>There is no viable alternative to lifecycle replacement of computer hardware. Computer hardware has a finite lifespan and degrades over the period of its life. Hardware manufacturers also only support hardware and provide security patches for a finite period of time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                  |                                        |                                    |                                     |
| <b>Basis for Project Estimates</b><br>Equipment cost esimates are based on comparable past purchases of the components approaching end of life in the target year.<br><br>NOTE PRJ-006467 is a breakout from 2025 ECS Infrastructure (PRJ-004855) and ASD Infrastructure (PRJ-004865).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                  |                                        |                                    |                                     |

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026          | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 740           | \$ -        | \$ 30         | \$ 183          | \$ 170          | \$ 104          | \$ 159          | \$ 93           |
| # CIAC                 | \$ -             | \$ -        | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 1,223         | \$ -        | \$ 48         | \$ 204          | \$ 220          | \$ 203          | \$ 349          | \$ 200          |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 759           | \$ -        | \$ 26         | \$ 135          | \$ 135          | \$ 186          | \$ 162          | \$ 115          |
| # Internal, Overheads  | \$ 523           | \$ -        | \$ 28         | \$ 153          | \$ 124          | \$ 68           | \$ 93           | \$ 57           |
| # Materials            | \$ 9,052         | \$ -        | \$ 371        | \$ 2,334        | \$ 2,144        | \$ 1,246        | \$ 1,859        | \$ 1,097        |
| # Overheads - External | \$ 966           | \$ -        | \$ 52         | \$ 274          | \$ 224          | \$ 135          | \$ 173          | \$ 108          |
| <b>Total</b>           | <b>\$ 13,262</b> | <b>\$ -</b> | <b>\$ 555</b> | <b>\$ 3,282</b> | <b>\$ 3,018</b> | <b>\$ 1,942</b> | <b>\$ 2,795</b> | <b>\$ 1,671</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Networking Gear Lifecycle

### PROJECT INFORMATION

|                                 |                                  |                                        |                                    |                                     |
|---------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-006474 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Annual lifecycle of Infrastructure Networking devices.

#### Project Scope:

Networking Devices Lifecycle: Includes Routers and Switches and associated external services and maintenance agreements.

Firewall Lifecycle: Includes all Firewalls and Firewall Management Devices and associated external services and maintenance agreements.

Load Balancer Lifecycle: Includes all network/appliance based Load Balancers and associated external services and maintenance agreements.

#### Project Benefits:

Replace aging infrastructure approaching end of life and no-longer supported by manufacturer in support of uptime, recoverability, and support for incidents from equipment manufacturers.

#### Project Risks and Mitigation Plan:

The risks of the hardware lifecycle are potential for extended outages based on human error or degraded states or outages based on initial hardware failure. These are mitigated by fully completing backups of the existing hardware, and moving it off the devices directly, pre-configuring the new hardware and testing it where capabilities exist to do so with production like scenarios, as well as leaving the existing devices in place as to fail back to them by means of restoring physical connections to the routers, switches and firewalls.

#### Risk of No Action:

Not completing these upgrades will render the networking infrastructure in a state where the teams will not be provided patches for the devices causing a risk of cyber security or functional instability, not being able to open support tickets with the vendor in situations where there is a function issue or a device in a down state or not being able to have the vendor swap hardware based on a true failure of the devices themselves thus leaving the network supporting the grid in a severely degraded or non-centrally managed state from the control centers or with the current applications.

#### Project Alternatives:

The Infrastructure Networking team has taken a look at alternatives from other vendors but at this time there are no acceptable alternatives due to interoperability and a complete swap out of management tools that are required to manage the firewall infrastructure which does not permit cross vendor management, and to swap the entire hardware system out would cost roughly a 10x increase in cost, retraining of staff which would also take 6 months or more to come up to speed for day to day operations.

#### Basis for Project Estimates

The budgeted rates here are based on quantities identified for replacement hardware based on the current Framework agreed prices for the life of the Framework agreements. This is a break out from prior years ASD and ECS programs, and going forward this will represent all Networking hardware refresh estimated for 2026 thru 2031. For the external labor costs, these are pre-determined Framework Agreement rates. For internal labor rates, these are based on historical rates used from prior years from the last lifecycle of this equipment.



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| <b>Capital Details:</b> | <b>Total</b> | <b>2020</b> | <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> |  |  |
|-------------------------|--------------|-------------|-------------|-------------|-------------|-------------|--|--|
| # AFUDC                 | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # CIAC                  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # External Services     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal - Non-AC     | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Labor       | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Internal, Overheads   | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Materials             | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| # Overheads - External  | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |
| <b>Total</b>            | \$ -         | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026            | 2027          | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 582           | \$ -        | \$ 60           | \$ 28         | \$ 104          | \$ 164          | \$ 154          | \$ 72           |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 879           | \$ -        | \$ 82           | \$ 32         | \$ 232          | \$ 345          | \$ 89           | \$ 98           |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 1,086         | \$ -        | \$ 126          | \$ 71         | \$ 101          | \$ 225          | \$ 411          | \$ 151          |
| # Internal, Overheads  | \$ 376           | \$ -        | \$ 55           | \$ 24         | \$ 68           | \$ 94           | \$ 92           | \$ 42           |
| # Materials            | \$ 6,342         | \$ -        | \$ 660          | \$ 314        | \$ 1,062        | \$ 1,705        | \$ 1,808        | \$ 792          |
| # Overheads - External | \$ 758           | \$ -        | \$ 114          | \$ 50         | \$ 128          | \$ 184          | \$ 195          | \$ 87           |
| <b>Total</b>           | <b>\$ 10,023</b> | <b>\$ -</b> | <b>\$ 1,097</b> | <b>\$ 520</b> | <b>\$ 1,695</b> | <b>\$ 2,719</b> | <b>\$ 2,749</b> | <b>\$ 1,243</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Compliance Operations and Digital Identities

### PROJECT INFORMATION

|                                 |                                  |                                        |                                    |                                     |
|---------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-006481 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### **Project description:**

Within this program we will continue the protection provided by Service Management (Including Asset, Incident, Request and Change Management), Identities Credentials and Access Management (including automation, privileged user management and user/credential management), CIP Compliance expansion, Vulnerability and Patch Management, End Point Protection, Vulnerability Detection and Integrity Management, Passive Monitoring, Packet Inspection and Brokering, Network Segmentation and Security Information and Event Management (SIEM). The main goal of the program is to further the deployment, harmonize our environments while increasing our efficiency. At the present time the foundation applications are in specific areas but need to be pushed out to all areas of Operational Smart Grids. While this push is being completed we will also include replacing legacy applications/hardware to reduce training, administration and renewal costs. It's important to continue this program now to increase our centralized management, standardize our tool offering and increase our efficacy and cyber diligence. Deploying this program allows us to safeguard the organization's digital assets and ensure the integrity, confidentiality, and availability of information through advanced security operations and robust digital identity management.

The program will continue agile methods to facilitate our efforts to:

- (1) Centralize Administration of Users, Applications and Devices
- (2) Control changes
- (3) Manage Incidents and Threats
- (4) Increase Accountability and Auditability
- (5) Automate workflows to ensure our compliance to NERC CIP requirements and centralized evidence collection for NPCC Audits.

To accomplish this, we will continue to deploy new applications and tools for RGE, harmonize and centralize our environments to increase our efficiency.

#### **Project Scope:**

Over the course of the program major milestones will include implementing our standard offerings in the Avangrid Secure Domain moving outwards to include other areas, harmonizing as we go to existing Operational Smart Grid networks (25-30). We will be collapsing/consolidating domains, standardizing software, automating (where possible to reduce human error/gain efficiencies) user, credential, asset, change, vulnerability. We will be adding/increasing auditability and appropriate approvals, centralized management of Assets, Changes, Incidents and Requests for all of OSG. Within this program we will continue to deploy the services below and enhance the protection provided. (Service/Components/Benefit)

#### **Digital Identities which includes :**

- Service Management (Components - Asset, Incident, Request and Change Management) Benefits - Auditable environment, controlled change, reporting/KPI (Key Performance Indicator) capabilities. Over the life of the program, we will have all of our identified OSG assets managed. This means that every incident, change and request will be approved (or not) within one centralized system. POC (proof of concept) for vulnerability management will be complete, meaning vulnerabilities will be matched up with POC assets and mitigation can be tracked and recorded in one place. The vulnerability module will be push out to be used for all devices decreasing manually management efforts. Workflows will be implemented to allow us centralized management of all OSG NERC CIP assets and enforce NERC/CIP requirements to be followed. Evidence will be centralized in one place and reoccurring tasks will be tracked against the asset. We will be improving our communication with our data center management tool from one way communication to two-way communication. Spectrum up/down conditions will be sent in to automatically open incident tickets. Software assets will be added to the inventory and managed similar to hardware assets. Finally all parts for an Asset (Software/Hardware/Virtual) lifecycle will be managed, from new idea, to ordering, receiving, building/installing, moving to service, to destruction at the end of life.

- Identities Credentials and Access Management (ICAM) (Components - Governance, Automation, Privileged User Management and User/Credential Management) Benefits - Quickly add/remove users, ensure least privileged access, reduce risk for bad actors. Over the life of the program, we will have completed integrating our applications to fully manage users and devices. We will have completed our POC for automation and we will have a centralized place to show evidence of onboarding /off boarding within set standards. We will have privileged accounts managed within vaults and control/audit who has access to which accounts and when access was granted/removed. We will be creating and implementing our Active Directory Harmonization plan to collapse the complexity of our network where appropriate to ease management. Requests and approvals will be coming in from the service management platform and be to have auditable approvals. Automation will be implemented to decrease the amount of human involvement in on-boarding and off-boarding.

#### **Compliance Operations and Protection Systems which includes:**

- CIP Compliance Expansion – (Cyber Vulnerability Assessments, Creating /Enforcing Procedures, Maintaining Evidence) Benefits - NERC/CIP Compliance. Over the course of the program we will continue updating procedures, creating RACI (Responsible Accountable, Consulted, Informed) documents and repeatable processes. We will continue to raise and expand our standards to include all devices within OSG to ensure a higher level of protection.

- Vulnerability and Patch Management (Vulnerability Discovery, Communications, Quality Assurance) Benefits - Standard communications, reduced risk and agreed upon service level agreements. Over the course of the program we will solicit a vendors or help us gather current state information and requirements like existing tools, KPIs, communications and processes and make suggestions on harmonization of processes and tools, staffing, communications. We will use this information to implement best in class processes/communications, tools, and automation of patch deployment. The primary data inputs for vulnerabilities will be from our service management tool and our vulnerability detection and integrity tool.
- End Point Protection Standardization –(Anti Virus, Intrusion Detection, Intrusion Prevention) Benefits - Deter/prevent bad actors from gaining access to our assets and data. Over the course of the program we will standardize on one software offering and roll it out to all areas. We will either be replacing software to standard offering or upgrading standard offering to the newest version. Standardizing on a single offering will allow use to reduce our training and deployment costs.
- Vulnerability Detection and Integrity Management – (Vulnerability Detection and Integrity Management (baseline)) Benefits - Vulnerabilities and baseline changes will be raised as incident tickets within out service management platform. This will allow more reporting and get eyes on baseline changes more quickly. Over the course of the program we will be on boarding new networks and configure services to get the most information possible.
- Network Segmentation - Benefits - Provide clean break / one way traffic points between networks. Over the course of the program we will evaluate fit for function of devices currently implemented and proposed to be implemented.
- Security Information and Event Management (SIEM) – Benefits - Collect all logs and event information in a centralized repository. Over the course of the program we will be on-Boarding new networks and rolling out new services to increase the protection and earliest possible bad actor event notifications.

#### **Project Benefits:**

These programs will provide efficiencies for staff (training and administration) and should increase our scope/scale when submitting renewals. We will also be analyzing the cost difference/security considerations for on-premises or cloud. We will be increasing our efficiency via centralized management, automation, reduction of employee training and allow purchasing from standard offering vendors. Program is designed to increase our control over our environment and our ability to deter, prevent, protect, and detect anomalous activity that could indicate bad actors have gained access to our environment.

Most Notably:

- Service Management (Components - Asset, Incident, Request and Change Management) Benefits - Auditable environment, controlled change, reporting/KPI (Key Performance Indicator) capabilities.
- Identities Credentials and Access Management (ICAM) (Components - Governance, Automation, Privileged User Management and User/Credential Management) Benefits - Quickly add/remove users, ensure least privileged access, reduce risk for bad actors.
- CIP Compliance Expansion – (Cyber Vulnerability Assessments, Creating /Enforcing Procedures, Maintaining Evidence) Benefits - NERC/CIP Compliance.
- Vulnerability and Patch Management (Vulnerability Discovery, Communications, Quality Assurance) Benefits - Standard communications, reduced risk and agreed upon service level agreements.
- End Point Protection Standardization –(Anti Virus, Intrusion Detection, Intrusion Prevention) Benefits - Deter/prevent bad actors from gaining access to our assets and data.
- Vulnerability Detection and Integrity Management – (Vulnerability Detection and Integrity Management (baseline)) Benefits - Vulnerabilities and baseline changes will be raised as incident tickets within out service management platform. This will allow more reporting and get eyes on baseline changes more quickly.
- Network Segmentation - Benefits - Provide clean break / one way traffic points between networks.
- Security Information and Event Management (SIEM) – Benefits - Collect all logs and event information in a centralized repository.

#### **Project Risks and Mitigation Plan:**

One of the top risks to the Compliance Operations and Digital Identities program are other projects operating with in the same time frame. The most notable are Data Center Move and Data Center Consolidation. These projects are moving assets and freezing changes during the moves. Some of the moves are quick and some take several weeks, depending on complexity. The move schedules are dependent on facilities projects to expand services to accept new load (floor space, heating, ventilation, and air conditioning (HVAC), uninterruptible power supply (UPS), power conditioning systems etc..). We are working closely with all of the project managers and project teams while we are planning our schedules to accommodate freezes. If these other projects begin to slip significantly in their schedules, this will impact Compliance Operations and Digital Identities program schedule. The effect will be to extend our need for integrators and contractors. Close communications is going to need to continue going forward to ensure mitigations can be accomplished by this program shifting implementation, testing and go-live dates move to sooner or later as needed. Compliance Operations and Digital Identities program is in the process of verifying our data center needs to verify the all of the programs needs fall into the existing datacenter projects.

The decision to take “no action” regarding the continuation of the Compliance Operations and Digital Identities programs will leave us with only the foundations of the former cyber security master plan (CSMP) installed. Among other things, the CSMP program was started several years ago to add protection, detection and to gain efficiencies by centralization and standardization and to ensure a high level of accountability/auditability. The foundations have been set, but to receive full benefits we need to continue implementation out to the rest of the networks. We have seen benefits in managing our hardware, early detection of anomalous activity, and a decrease of reportable events in our compliance program. This trend should continue as we have moved from assessing the environment to implementing the foundations needed. These foundations are installed in a smaller portion of our network and need to be moved out to the entire network in order to have the same high-quality coverage everywhere. Now that we have the foundations, we can continue more out to other networks and departments to continue the processes of centralization, standardization, accountability/auditability, and significantly increase our ability to deter, prevent, protect, and detect anomalous activity that could indicate bad actors have gained access to our environment.

Over the course of the program the Compliance Operations and Digital Identities teams have looked at current state and future state. The program teams have evaluated all of the alternatives currently in our environments and in the market place to select tools that provide the most complete match to our requirements including fit for service, third party considerations, stability of partner and relationship with partner, training (especially free training) and cost of management. All alternatives were looked at and the selected tools were based on these categories. We are moving through the tools in phases as a slow and steady cadence protects the environment from too many changes and helps to maintain stability. The goals is to harmonize all of our networks/environments and provide a standard offering for centralized management and auditable administrative control.

Over the course of the program the Compliance Operations and Digital Identities teams have looked at current state and future state. The program teams have evaluated all of the alternatives currently in our environments and in the market place to select tools that provide the most complete match to our requirements including fit for service, third party considerations, stability of partner and relationship with partner, training (especially free training) and cost of management. All alternatives were looked at and the selected tools were based on these categories. We are moving through the tools in phases as a slow and steady cadence protects the environment from too many changes and helps to maintain stability. The goals is to harmonize all of our networks/environments and provide a standard offering for centralized management and auditable administrative control.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Platform Services Lifecycle

### PROJECT INFORMATION

|                                 |                                  |                                        |                                    |                                     |
|---------------------------------|----------------------------------|----------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-006488 | <b>Charge Code:</b><br>Project         | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Miller, Jason | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Annual lifecycle of Platform Services assets.

#### Project Scope:

Hyper Converged Infrastructure Lifecycle: Currently standarized on Dell VxRails, associated services and maintenance agreements.

Application Lifecycle: Includes Microsoft, Axonius, Monitors Anywhere, VMware, Omnisia, Liquidware, nVidia, Dell licensing and associated external services and maintenance agreements.

Video Wall Lifecycle: Includes Barco, Activu, Primate systems and applications as well as associated external services and maintenance agreements.

Desktop/Laptop Lifecycle: Includes HP and Dell workstations and laptops and associated external services and maintenance agreements.

Thin/Zero Client Lifecycle: Includes ClearCube, Lenovo, Centerm, Thin Global clients and associated external services and maintenance agreements.

#### Project Benefits:

Replace aging infrastructure approaching end of life and no-longer supported by manufacturer in support of uptime, recoverability, and support for incidents from equipment manufacturers.

#### Project Risks and Mitigation Plan:

Risks would be running equipment that is not supported from a hardware or software perspective. Mitigation would be that we continue to run on equipment that can not be supported and is not receiving security updates, bug fixes, or has no available compatible replacment parts should a failure occur.

#### Risk of No Action:

No action puts us at risk of security or system exploits and potentially long duration outages due to a lack of available support. These systems are used in the control of the energy systems and any outage could impact customers which could create health and safety concerns.

#### Project Alternatives:

There are no alternatives availble as this program is meant to replace technology that is in support of the control centers.

#### Basis for Project Estimates

This program is a breakout from the ASD Infrastructure (PRJ-004865) and ECS Infrastructure (PRJ-004855) programs for 2026 through 2031

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025        | 2026            | 2027         | 2028            | 2029            | 2030          | 2031        |
|------------------------|------------------|-------------|-----------------|--------------|-----------------|-----------------|---------------|-------------|
| # AFUDC                | \$ 693           | \$ -        | \$ 66           | \$ 5         | \$ 334          | \$ 233          | \$ 55         | \$ -        |
| # CIAC                 | \$ -             | \$ -        | \$ -            | \$ -         | \$ -            | \$ -            | \$ -          | \$ -        |
| # External Services    | \$ 2,200         | \$ -        | \$ 33           | \$ 27        | \$ 1,256        | \$ 777          | \$ 107        | \$ -        |
| # Internal - Non-AC    | \$ -             | \$ -        | \$ -            | \$ -         | \$ -            | \$ -            | \$ -          | \$ -        |
| # Internal, Labor      | \$ 466           | \$ -        | \$ 15           | \$ 4         | \$ 23           | \$ 353          | \$ 70         | \$ -        |
| # Internal, Overheads  | \$ 515           | \$ -        | \$ 60           | \$ 4         | \$ 275          | \$ 143          | \$ 32         | \$ -        |
| # Materials            | \$ 8,389         | \$ -        | \$ 881          | \$ 39        | \$ 4,432        | \$ 2,386        | \$ 650        | \$ -        |
| # Overheads - External | \$ 929           | \$ -        | \$ 101          | \$ 7         | \$ 473          | \$ 285          | \$ 62         | \$ -        |
| <b>Total</b>           | <b>\$ 13,190</b> | <b>\$ -</b> | <b>\$ 1,157</b> | <b>\$ 87</b> | <b>\$ 6,794</b> | <b>\$ 4,178</b> | <b>\$ 975</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## DRAGOS RGE

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-002643 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Dragos is an Operations Technology (OT) specific Cybersecurity platform that passively monitors critical systems and alerts for threats identified in the network. It also has the capability to discover and profile OT assets. We will replace the aging equipment with new equipment and expand its utilization throughout the organization. This project will also resolve some inefficiencies that exist from the initial deployment. Dragos also provides Asset Visibility providing the make, model and version information of the field devices. The platform assists in providing numerous OT specific services for intelligence, incident response, topology reviews, penetration testing and more. It also mitigates network interconnection risks for Critical Infrastructure Energy Control Centers that came out of a recommendation from the "USA Office of the President Executive Order 14028 Improving the Nations' Cybersecurity and the department of Energy 100-Day plan to address Cybersecurity Risks to the U.S. Electric System". The Dragos platform helps us in adhering to this Presidential order and assists in defending the Critical Infrastructure that Avangrid supports and maintains. It also gives us the capability to share anonymized data enhancing the Government's and private sectors ability to detect new threats and normalize data. The platform also allows us to utilize playbooks and to threat hunt when incidents occur.

#### Project Scope:

The goal of the Dragos Refresh Plan will be to co-term licensing at a 5-year refresh going forward and for new equipment the purchases will also follow a 5 year refresh plan. This minimizes the downstream support needed. The Refresh of equipment will allow us to realize savings as the cost to maintain newer equipment is reduced. A long-term Enterprise License Agreement (ELA) has been negotiated with Dragos which provides savings year-over-year on new hardware moving forward if executed. Dragos is specialized in monitoring OT Networks for both North/South and East/West network traffic. We will utilize Dragos to satisfy the requirements for East/West traffic as part of the CIP-015 Standard that is forthcoming from FERC.

The Deployment Plan for a phased approach will cover a full range of OT systems as follows:

##### Phase I Deployment - complete:

Initial rollout of the product at critical aggregation points (Level 3)

Footprint in all Operating Companies

CIP 15 Pilot conducted

##### Phase II Deployment – in process:

Continued deployment to cover all aggregation points (Level 3)

Complete the coverage, but not optimized for OT traffic

##### Phase III Deployment – in process

Perimeter deployment in Substations to provide East/West visibility of OT traffic (Level 1 and 2) (27 locations)

Deployment would cover all 59 CIP Medium Substations for CIP 15 preparation

Deploy at 2 LNG facilities to monitor East/West traffic

Potential for further rollout to enhance visibility at other substations Non CIP areas

##### Phase IV Deployment – A refresh of the Phase I and Phase II deployment to maintain coverage within the datacenter and ensure compliance.

Covers all operating companies and will deploy 27 Dragos 1 gigabyte sensors, 4 Dragos 10 gigabyte sensors and 8 Dragos Site stores. Request for funding includes Labor/Travel expenses"

Avangrid OSG has 11 datacenters in which to implement mitigations, supporting 14 lines of businesses, where 126 third party interconnections must be mitigated. CIP must be a separate implementation per interpretation from the ERO.

The risk is that OSG's attack surface continues to expand increasing our footprint to outside vulnerabilities/bad actors from third party interconnections and other communication paths. The OSG firewalls utilize intrusion detection/prevention but lack the enhanced threat analytics capabilities of the Dragos platform. Current US Government intelligence reports are suggesting that Critical Infrastructure Providers take immediate steps to secure and provide visibility of the networks to identify and stop "bad actors". DRAGOS brings advance analytics and visualization to industrial protocols on private networks via on-premises solutions and the ability to share anonymized observations with government, peer utility and private sector partners. <https://www.energy.gov/articles/biden-administration-takes-bold-action-protect-electricity-operations-increasing-cyber-0>

**Project Benefits:**

Benefits are derived from CIP compliance, cost efficiencies and detection and response effectiveness for identifying and eliminating threats to our businesses. Mitigating Risks registered and managed by Corporate Risk and leadership. Comply with Corporate Governance and Cybersecurity Policy and Rules as sponsored by the Avangrid Board of Directors. Establish a leadership position for grid security and build confidence in the Avangrid Brand among stakeholders, regulatory authorities, agencies, peer utilities, and whole of government Incident response. Assists in meeting future CIP 15 requirements that are forthcoming from FERC. This requirement is to monitor East/West network traffic in High/Med Control Centers and High/Med Substations with ERC (external routable connectivity). The key attributes of the system are Asset Visibility allowing for detailed inventories and tracking changes with a passive-first approach it lays a foundation for a robust OT cybersecurity program, Risk-Based Vulnerability Management, Intelligence-Driven Threat Detection with regularly updated modeling, configuration and threat behaviors along with Response Playbooks. The Playbooks allow for expert-authored guides that our security team can use to reduce response times and enhance workflow efficiency thus streamlining the security operations. The system allows for Flexible deployment options with virtual, on-prem or cloud solutions. It utilizes centralized management and reporting capabilities across multi-site and multi-zone deployments.

**Project Risks and Mitigation Plan:**

Some of the top risks identified for the DRAGOS program are competing projects that are advancing at the same time frame. The biggest of them is the Data Center Move and Data Center Consolidations. These projects are physically moving assets and requiring change freezes while they occur. These moves depending on complexity are quick or may take several weeks or months depending on complexity and other factors. These moves are also dependent on some facility projects to expand (floor space, heating, ventilation, air conditioning (HVAC), UPS and Electrical) etc..) We are working closely with all project managers and project teams accommodating our schedules around any freezes or timelines. If these timelines or freezes move or are greater than anticipated then the need for us to adjust and extend any integrators/contractors will occur. Close communications with the individual teams will need to occur and continue to ensure any changes in schedule can be mitigated and any schedules adjusted for testing, implementations, go-live etc.. The DRAGOS program is currently evaluating any new needs that these Data Center moves/consolidations may require and continuously analyzing new projects for applicability of the technology. It is important that we continue to enhance our security posture and not allow it to become stagnant.

**Risk of No Action:**

The decision to take "no action" regarding the continuation of the Dragos program will leave us without a solution to fulfill our NERC CIP 15 requirements to monitor East/West traffic in High Control Center and High/Med substation with ERC (external routable protocol) locations " it will also leave us at risk with the inability to detect anomalous or unauthorized network activity and limit the capabilities to respond to any incidents. We will also not have limited tools to investigate along with threat hunt and determine the threat landscape. With the expansion of external network connections such as the DER connections our attack surface continues to grow putting us at greater risk at those aggregation points. The continued addition of future connections to enhance our business service offerings and enhance our operational efficiency such as AMI enhanced features, Digital Line Rate Sensors, Future cloud connections , Artificial Intelligence, Robotics (such as our Sparky project) will also expand our exposure. The program will need to continue utilizing an lifecycle refresh plan occurring every 5 years. This will allow us to stay current with advances in technology and ensure that our maintenance and support costs remain steady. If the equipment ages the cost for maintenance and support increases.

**Project Alternatives:**

Alternative would be to extend the lifecycle replacement.

**Basis for Project Estimates**

1. External Services (Quotes for similar activities in the previous deployments)
2. AFUDC and Overhead charges (TBD)
3. Internal Labor charges (Project Management and Operations personnel charging their time during the implementation)



## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020 | 2021   | 2022   | 2023  | 2024   |  |  |
|------------------------|-----------------|------|--------|--------|-------|--------|--|--|
| # AFUDC                | \$ 57           | \$ - | \$ 7   | \$ 50  | \$ -  | \$ -   |  |  |
| # CIAC                 | \$ -            | \$ - | \$ -   | \$ -   | \$ -  | \$ -   |  |  |
| # External Services    | \$ 1,864        | \$ - | \$ 873 | \$ -   | \$ 31 | \$ 960 |  |  |
| # Internal - Non-AC    | \$ 75           | \$ - | \$ 10  | \$ 53  | \$ 1  | \$ 10  |  |  |
| # Internal, Labor      | \$ -            | \$ - | \$ -   | \$ -   | \$ -  | \$ -   |  |  |
| # Internal, Overheads  | \$ -            | \$ - | \$ -   | \$ -   | \$ -  | \$ -   |  |  |
| # Materials            | \$ -            | \$ - | \$ -   | \$ -   | \$ -  | \$ -   |  |  |
| # Overheads - External | \$ -            | \$ - | \$ -   | \$ -   | \$ -  | \$ -   |  |  |
| <b>Total</b>           | <b>\$ 1,996</b> | \$ - | \$ 890 | \$ 103 | \$ 32 | \$ 970 |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026        | 2027        | 2028        | 2029        | 2030            | 2031        |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-----------------|-------------|
| # AFUDC                | \$ 74           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 74           | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # External Services    | \$ 947          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 947          | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Internal, Labor      | \$ 63           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 63           | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            | \$ -        |
| <b>Total</b>           | <b>\$ 1,084</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,084</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## ASD Infrastructure Firewalls RGE

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-002390 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

All of the Equipment and Apps that are approaching obsolescence that need to be replaced or renewed across the Avangrid Security Domain (ASD) including the Detection and Response, Asset Mgmt, Identity, Credentials and Access Mgmt, Gov/Risk/Compliance and Business Continuity Tools. The ASD Cyber Lifecycle also includes the identification and purchase of all Firewalls, and diodes for implementation by Infrastructure to the ASD. In addition to the above benefits, this program includes technical refresh or replacement of the underlying infrastructure that ages out or goes end of life. This program keeps datacenter equipment (servers, switches, routers, backup appliances, storage arrays, firewalls, and other data center centric equipment) that services, physical security, telecom, and cyber security current and under manufacturers support. Without this constant refreshment of ageing computer equipment these products would become obsolete.

Endpoint Protection: Subscription/Hardware lifecycle.

SIEM: Equipment Lifecycle

Packet Broker (Deduplication and deep packet inspection): Hardware Lifecycle

Cyber Vulnerability Scanning: Hardware Lifecycle

#### Project Scope:

Avangrid Security Domain Program is designed to provide a secure Cyber Infrastructure and centralized Physical security system. This includes professional services and hardware/software Cyber lifecycle for direct and auxiliary systems which comprises advanced cybersecurity technologies and capabilities. In the capabilities listed below, the goal is to standardize and expand capabilities across common platforms.

- Dragos and Log Rhythm NetMon Implementation: (1) Increased centralized cybersecurity monitoring, optimizes resources and avoids redundancy across operating companies. (2) Increased situational awareness across AVANGRID, consolidating cybersecurity monitoring and providing analysts with a single pane of glass will allow AVANGRID to gain a higher degree of situational awareness across the organization and its operating companies.

-Dragos, LogRhythm NetMon, Gigamon, and Cisco equipment Implementation: Increased efficiency and enablement, cybersecurity monitoring within the ASD is driven by Meet-Me-Points (MMP), which provide traffic aggregation, deduplication, and decryption capabilities, without increasing the load on the network infrastructure

-Increased network detection and anomaly analytics capabilities: The Dragos deployment across ASD environments and network interfaces improve visibility of ASD network activity against expected traffic flow baselines for anomaly detection.

-Engineered baseline configuration and monitoring tool: Design completed to put Tripwire into ASD environments.

-Service Mgmt solution: (1) Completed planning to deploy in ASD and be used by all operating companies. (2) Mgmt solution to manage production changes, asset reporting, request approval and incident Mgmt.

- IAM tools for managing user access and privileged access

#### Project Benefits:

Avangrid Security Domain Program is designed to provide a secure Cyber Infrastructure and centralized Physical security system. This includes professional services and hardware/software Cyber lifecycle for direct and auxiliary systems which comprises advanced cybersecurity technologies and capabilities. In the capabilities listed below, the goal is to standardize and expand capabilities across common platforms.

- Dragos and Log Rhythm NetMon Implementation: (1) Increased centralized cybersecurity monitoring, optimizes resources and avoids redundancy across operating companies. (2) Increased situational awareness across AVANGRID, consolidating cybersecurity monitoring and providing analysts with a single pane of glass will allow AVANGRID to gain a higher degree of situational awareness across the organization and its operating companies.

-Dragos, LogRhythm NetMon, Gigamon, and Cisco equipment Implementation: Increased efficiency and enablement, cybersecurity monitoring within the ASD is driven by Meet-Me-Points (MMP), which provide traffic aggregation, deduplication, and decryption capabilities, without increasing the load on the network infrastructure

-Increased network detection and anomaly analytics capabilities: The Dragos deployment across ASD environments and network interfaces improve visibility of ASD network activity against expected traffic flow baselines for anomaly detection.

-Engineered baseline configuration and monitoring tool: Design completed to put Tripwire into ASD environments.

-Service Mgmt solution: (1) Completed planning to deploy in ASD and be used by all operating companies. (2) Mgmt solution to manage production changes, asset reporting, request approval and incident Mgmt.

- IAM tools for managing user access and privileged access.

Some of the top risks identified for the ASD Protection Systems program are competing projects that are advancing at the same time frame. The biggest of them is the Data Center Move and Data Center Consolidations. These projects are physically moving assets and requiring change freezes while they occur. These moves depending on complexity are quick or may take several weeks or months depending on complexity and other factors. These moves are also dependent on some facility projects to expand (floor space, heating, ventilation, air conditioning (HVAC), UPS and Electrical) etc..) We are working closely with all project managers and project teams accommodating our schedules around any freezes or timelines. If these timelines or freezes move or are greater than anticipated then the need for us to adjust and extend any integrators/contractors will occur. Close communications with the individual teams will need to occur and continue to ensure any changes in schedule can be mitigated and any schedules adjusted for testing, implementations, go-live etc.. The ECS Protection Systems program is currently evaluating any new needs that these Data Center moves/consolidations may require and continuously analyzing new projects for applicability of the technology. It is important that we continue to enhance our security posture and not allow it to become stagnant.

The program will need to continue utilizing an lifecycle refresh plan occurring every 5 years. This will allow us to stay current with advances in technology and ensure that our maintenance and support costs remain steady. If the equipment ages the cost for maintenance and support increases

Alternative would be to extend the lifecycle replacement.

1. External Services (Existing Framework agreements and quotes for similar activities in the past)
2. AFUDC and Overhead charges (TBD)
3. Internal Labor charges (Project Management and Operations personnel charging their time during the implementation)

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$'000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## NY Smart Metering Lifecycle

### PROJECT INFORMATION

|                                 |                                            |                                       |                                    |                                     |
|---------------------------------|--------------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>9302-3314-1480-RGE-C | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0             | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

In order to meet regulatory, contractual, and compliance requirements, the program is to complete mandatory network expansion and replacement of AMI network devices that fail outside warranties and/or have exceeded end of life (EOL). Install solutions (e.g., resiliency, communications) to continue essential meter reading, remote orders, and meter pings during normal operations and power restoration efforts. The NY AMI Project covers this effort through 2025 and the JP captured approved 2026 spend (hence the 2026 in-service date). 63/37 split between NYSEG/RG&E for OSG Telecom's materials + internal labor 2027+); 42% AFUDC multiplier against all categories; Internal, OH multiplier (NYSEG-Common; RG&E-Common) applied against 3 categories (Internal Labor+External Services+Materials)

#### Project Scope:

This program will be used to enhance and sustain the AMI Mesh network in NY through Installation of additional AMI network devices to reach ultra remote meters as they as needed. This allows for further support of meter reading, remote orders, meter pings, and the clearing of orders during restoration efforts. In order to install these additional devices we will need to pre-engineer the areas that are under performing, survey these proposed areas, and install the equipment once an appropriate location is found. These capital dollars also include the cost of the AMI devices and the labor to install this equipment.

#### Project Benefits:

This program helps to meet current and estimated future company and regulatory requirements and has the benefit of further assuring timely and accurate meter reads for NYSEG customers as well by improving reliability and availability of the AMI network, therefore decreasing the likelihood of estimated bills for RG&E customers.

#### Project Risks and Mitigation Plan:

Program risks and mitigations include:

- Supply Chain delays for materials - proactive procurement of forecasted devices in the beginning of each program year providing ample lead time for delivery.
- Availability of supporting components (mounting brackets, etc.) - procure and stock these materials at the beginning of each program year for planned installations.

#### Risk of No Action:

If this program is not executed, It could lead to the possibility of failed devices not being replaced, which could result in certain meters not being reachable by the network leading to estimated reads, inability to perform remote connects/disconnects, and less accurate outage predictions.

#### Project Alternatives:

The alternative to executing this program would be to increase manual meter reading staff to physically travel to the locations of unreachable meters in order to acquire actual reads. Additional truck roles would also be required in order to disconnect/reconnect and perform outage assessments. The preferred solution is to maintain the availability of all network devices and continue to add additional devices where needed to reach ultra-remote meters to avoid manual intervention.

#### Basis for Project Estimates

Cost Estimates for the this project are based on the following:

- Materials: Pricing estimated based on previous purchases during the initial NY AMI project.
- Installation: An estimated 3% failure rate @ an estimated \$1000 per install.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ 195          | \$ -        | \$ 9          | \$ 35         | \$ 36         | \$ 37         | \$ 38         | \$ 39         |
| # CIAC                 | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 907          | \$ -        | \$ -          | \$ 171        | \$ 176        | \$ 181        | \$ 187        | \$ 192        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ 608          | \$ -        | \$ 27         | \$ 109        | \$ 113        | \$ 116        | \$ 120        | \$ 123        |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Materials            | \$ 2,132        | \$ -        | \$ 136        | \$ 376        | \$ 387        | \$ 399        | \$ 411        | \$ 423        |
| # Overheads - External | \$ -            | \$ -        | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| <b>Total</b>           | <b>\$ 3,842</b> | <b>\$ -</b> | <b>\$ 172</b> | <b>\$ 691</b> | <b>\$ 712</b> | <b>\$ 733</b> | <b>\$ 755</b> | <b>\$ 778</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Telecomm Infrastructure

### PROJECT INFORMATION

|                                 |                                       |                                       |                                    |                                     |
|---------------------------------|---------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>UI-R5288-RGE-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0        | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Operational SmartGrids Telecom manages and maintains Avangrid's wireless and wireline networks. The Telecom team works with privately owned and public carriers to serve our internal customers: Energy Control Center (ECC), Substation Automation, Distribution Automation, Smart metering, Revenue metering (MV-90 system), IT (Information Technologies) Corporate Network, Gas SCADA (Supervisory Control and Data Acquisition). This program is intended to ensure the reliability of the existing telecom infrastructure by means of life cycle replacement, diversity and redundancy of transport solutions:

- Capacity management of existing Telecom routers, switches, and fiber Transport (new line cards, redundant common cards, etc..)
- Configuration of services on existing telecom equipment
- Installing cabling within buildings for connectivity (fiber or copper) and power/electrical, including fiber make-ready work
- Lifecycle replacement of power/fuse panels, battery replacements, generator replacement, connectors
- Adding antennas to existing towers
- Capital improvements to existing towers to extend life or expand capacity
- Intermediary equipment required for a change in Telecom Carrier service (i.e. going from copper to fiber solution).
- Project management, engineering services, and associated contracted labor
- Newark warehouse activity for Telecom Projects, including Distribution Automation telecom devices staging

This Program is an ongoing effort to meet the ever growing telecommunications needs of our customers (bandwidth, latency and reliability).

#### Project Scope:

Scope of work is life cycle replacement of cellular routers, TDM (Time-division multiplex) circuits, battery and backup power-related deficiencies at service centers, support ancillary services like warehouse services, Project Management Office, Engineering services and wireless point-to-multipoint upgrades.

#### Project Benefits:

As telecom connectivity becomes an increasingly critical aspect of operating a safe and reliable electric and gas distribution network, maintaining the reliability of the telecom services is essential. Without telecom connectivity, the Energy Control Center cannot remotely manage the grid, negatively impacting key performance indicators (KPIs) such as SAIDI (System Average Interruption Duration Index), SAIFI (System Average Interruption Frequency Index) and CAIDI (Customer Average Interruption Duration Index) for both Electric and Gas distribution and transmission grids.

Replacing legacy infrastructure with modern solutions enables redundancy and resiliency increasing reliability while reducing OPEX.

There is an increasing requirement to monitor distributed energy resources (FERC Order 2222, Federal Energy Regulatory Commission), demand management programs, smart meters, distribution automation, and high-speed protection systems. Other supported systems include alarming, revenue metering, substation switching, etc. Most of these systems mentioned require routine hardware replacement to maintain the reliability metrics dictated by internal Avangrid standards and outside governance such as NERC/CIP (North American Electric Reliability Corporation/Critical Infrastructure Protection).

#### Project Risks and Mitigation Plan:

A risk to the project is the necessity to upgrade additional equipment at the site to bring it up to the current installation standard.

#### Risk of No Action:

The infrastructure program proactively replaces end of life assets preventing equipment failures maintaining network reliability. The risks associated with failure of the equipment include loss of line protection between substations, loss of SCADA. Loss of Land Mobile Radio communications, Loss of IT connectivity.

#### Project Alternatives:

None, life cycle replacement is needed to keep the telecom network performing at it best, so the services transported are reliable.

#### Basis for Project Estimates

Existing Framework agreements and quotes for similar activities in the past

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 32            | \$ -            | \$ 4            | \$ 8            | \$ 15           | \$ 5            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 9,420         | \$ 2,105        | \$ 978          | \$ 2,445        | \$ 2,001        | \$ 1,891        |  |  |
| # Internal - Non-AC    | \$ 567           | \$ 71           | \$ 125          | \$ 71           | \$ 160          | \$ 139          |  |  |
| # Internal, Labor      | \$ 360           | \$ -            | \$ -            | \$ -            | \$ 42           | \$ 318          |  |  |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 284           | \$ 43           | \$ 0            | \$ 60           | \$ 175          | \$ 6            |  |  |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 10,663</b> | <b>\$ 2,219</b> | <b>\$ 1,108</b> | <b>\$ 2,584</b> | <b>\$ 2,394</b> | <b>\$ 2,359</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: |       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|-------|------|------|------|------|------|
|              | Total | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2025            | 2026          | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 151           | \$ 151          | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 3,413         | \$ 803          | \$ 246        | \$ 391          | \$ 391          | \$ 435          | \$ 541          | \$ 604          |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ 42            | \$ 42           | \$ -          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 695           | \$ 132          | \$ 24         | \$ 119          | \$ 103          | \$ 95           | \$ 105          | \$ 118          |
| # Materials            | \$ 11,133        | \$ 1,067        | \$ 176        | \$ 1,736        | \$ 1,736        | \$ 1,867        | \$ 2,183        | \$ 2,369        |
| # Overheads - External | \$ 1,186         | \$ 224          | \$ 44         | \$ 201          | \$ 175          | \$ 161          | \$ 179          | \$ 201          |
| <b>Total</b>           | <b>\$ 16,621</b> | <b>\$ 2,419</b> | <b>\$ 491</b> | <b>\$ 2,448</b> | <b>\$ 2,406</b> | <b>\$ 2,557</b> | <b>\$ 3,008</b> | <b>\$ 3,291</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Telecomm Fiber

### PROJECT INFORMATION

|                                 |                                       |                                       |                                    |                                     |
|---------------------------------|---------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>UI-R5291-RGE-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0        | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

The purpose of purchasing fiber optic cable is to enhance our connectivity and create high bandwidth communications and backhaul points. Energy Control Center, Information Technologies (IT) group, Protection and Control group, Advance Metering Systems (AMI) group, Physical Security and other internal customers demand a highly reliable, low-latency and high bandwidth means of communication. Operational Smart Grids (OSG) Telecoms meets these requirements by building and leasing (20 year capital lease) optical fiber strands.

Services transported over fiber are: SCADA (Supervisory Control and Data Acquisition), Physical Security Access Control, CCTV (closed circuit television) & gunshot detection, Advance Metering Infrastructure (AMI), Corporate Network and relay protections.

Our internal customer requirements dictate the locations where fiber segments should be upgraded, constructed or leased.

Due to Telecom providers disconnecting legacy circuits that transport SCADA and relay protection services, replacing them with fiber is vital to ensure system performance. Legacy circuits are old copper-based circuits (4 wires or T1, depending of the capacity of the circuit) that the telecom carriers are migrating their infrastructure off to adopt more reliable technologies like optical fiber which allow for better performance and are more resilient.

#### Project Scope:

Telecom Fiber is an ongoing program to lease optical fiber strands or build Avangrid owned fiber cables to expand and upgrade the telecommunications network to connect unserved and underserved stations and service centers within RGE. This includes life-cycle replacement of older fiber cables where performance is degrading.

#### Project Benefits:

The existing fiber in the City of Rochester is 25 years old and has a high rate of failure which places network reliability at risk. Replacing the highest degraded fiber cables will improve the reliability of the telecom network.

A reliable telecom network is vital to the Energy Control Center, Information Technologies (IT) group, Protection and Control group, Physical Security and other internal customers.

Low latency offers several key benefits:

- Increased Network Efficiency: With less delay, network resources are used more effectively, reducing idle time and optimizing bandwidth utilization.

- Improved Responsiveness: Devices can communicate faster, leading to quicker response times and smoother interactions.

- Better Support for Automation: Real-time data transmission is essential for the efficient operation of automated systems.

These benefits make low latency a critical factor in modern network design and operation.

A fiber lifecycle capital budget is essential because it enables Avangrid to manage their fiber telecommunications infrastructure and services, from purchase to retirement. This helps to optimize spending, and boost overall efficiency and performance.

#### Project Risks and Mitigation Plan:

Long lead-times for fiber delivery is the greatest risk in this program. We work close with the vendors to identify which segments are at greater risk of delay and he

#### Risk of No Action:

With the telecom providers sunsetting copper-based services (4 wires and T1), there are critical systems that are very sensitive to latency and have to be migrated to our own network to meet the requirements of the service. Relay protection is a great example of these services.

If RGE doesn't expand their network, the amount of effort to migrate such critical systems will be exponentially greater.

#### Project Alternatives:

There are no alternatives to fiber in terms of performance, but wireless communications are also evaluated where it makes sense.

#### Basis for Project Estimates

There are several purchasing processes that provide information to estimate future expenses.



# FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020          | 2021          | 2022            | 2023            | 2024            |  |  |
|------------------------|-----------------|---------------|---------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 9            | \$ -          | \$ 1          | \$ 2            | \$ 3            | \$ 2            |  |  |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 6,802        | \$ 912        | \$ 916        | \$ 2,898        | \$ 994          | \$ 1,083        |  |  |
| # Internal - Non-AC    | \$ 65           | \$ 14         | \$ 13         | \$ 4            | \$ 9            | \$ 25           |  |  |
| # Internal, Labor      | \$ 103          | \$ -          | \$ -          | \$ -            | \$ -            | \$ 103          |  |  |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 342          | \$ -          | \$ -          | \$ -            | \$ 342          | \$ 0            |  |  |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 7,321</b> | <b>\$ 926</b> | <b>\$ 930</b> | <b>\$ 2,904</b> | <b>\$ 1,347</b> | <b>\$ 1,213</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total       | 2020        | 2021        | 2022        | 2023        | 2024        |  |  |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|
| <b>Total</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 67           | \$ 67           | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 368          | \$ 80           | \$ 64           | \$ 60           | \$ 47           | \$ 40           | \$ 38           | \$ 39           |
| # Materials            | \$ 6,770        | \$ 1,032        | \$ 984          | \$ 1,034        | \$ 930          | \$ 930          | \$ 930          | \$ 930          |
| # Overheads - External | \$ 589          | \$ 119          | \$ 105          | \$ 98           | \$ 77           | \$ 65           | \$ 61           | \$ 63           |
| <b>Total</b>           | <b>\$ 7,793</b> | <b>\$ 1,297</b> | <b>\$ 1,153</b> | <b>\$ 1,192</b> | <b>\$ 1,054</b> | <b>\$ 1,036</b> | <b>\$ 1,029</b> | <b>\$ 1,032</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
|--------------|-------|------|------|------|------|------|------|------|

[illegible]

## Telecomm NY WAN Buildout

### PROJECT INFORMATION

|                                 |                                       |                                       |                                    |                                     |
|---------------------------------|---------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>UI-R5297-RGE-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0        | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

OSG Telecom manages and maintains Avangrid's wireless and wireline communications. The Telecom team works with privately owned and public carriers to serve our internal customers: Energy Control Center (ECC), Substation Automation, Distribution Automation, Smart metering, Revenue metering (MV-90 system), IT Corporate Network, Gas and Electric Operations.

This program is intended to ensure the reliability of the existing telecom infrastructure by means of providing connectivity to unserved or underserved substations, service centers and distribution assets to support automation activities at RGE.

This will involve deploying a telecom cabinet (indoor or outdoor) with routing and switching equipment and connectivity to the Wide Area Network by means of cellular services, fiber optic, wireless broadband or wireless narrowband.

#### Project Scope:

This program oversees the upgrade and expansion of the telecom network across RGE. This includes engineering, procurement, permitting, licensing, installation, construction and integration of wireless and wireline infrastructure. Constructing new sites includes purchasing cabinets and specific equipment to be installed in the cabinet, as well as engineering and installation of equipment and the power supply. The fiber path also must be engineered on the premises to connect to existing fiber infrastructure.

#### Project Benefits:

As telecom connectivity becomes an increasingly critical aspect of operating a safe and reliable electric and gas network, maintaining the reliability of the telecom network is essential. Without telecom connectivity, the Energy Control Center cannot remotely manage the grid, negatively impacting key performance indicators (KPIs) such as SAIFI (System Average Interruption Frequency Index), SAIDI (System Average Interruption Duration Index) and CAIDI (Customer Average Interruption Duration Index).

Expanding our network reach creates opportunities at underserved facilities backhaul additional services, including Information Technology (IT) and smart metering.

By migrating from public carrier services to private owned infrastructure we lower OPEX (Operating Expense) by eliminating monthly recurring fees. In 2024 \$73k were saved.

#### Project Risks and Mitigation Plan:

This is a program that operates in all the NYSEG service areas by extending the telecoms network to unserved and under served sites. Sometimes the locations chosen to deploy new telecom network are not ready and new locations have to be chosen. This might impact the quantity of sites served every year.

#### Risk of No Action:

With the telecom providers sunsetting copper-based services (4 wires and T1), there are critical systems that are very sensitive to latency and have to be migrated to our own network to meet the requirements of the service. Relay protection is a great example of these services.

If RGE doesn't expand their network, the amount of effort to migrate such critical systems will be exponentially greater.

#### Project Alternatives:

There are no alternatives to this program. The only way to ensure a reliable telecom service is that NYSEG owns the telecom network.

For each location where telecoms services are designed, a variety of alternative solutions are evaluated (wired and wireless) and the best performing one is chosen.

#### Basis for Project Estimates

There is an extensive amount of prior quotes for activities in the program.

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total            | 2020            | 2021            | 2022            | 2023            | 2024            |  |  |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|
| # AFUDC                | \$ 722           | \$ -            | \$ 53           | \$ 310          | \$ 359          | \$ -            |  |  |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # External Services    | \$ 12,270        | \$ 3,356        | \$ 3,113        | \$ 1,726        | \$ 2,092        | \$ 1,983        |  |  |
| # Internal - Non-AC    | \$ 318           | \$ 47           | \$ 54           | \$ 74           | \$ 91           | \$ 51           |  |  |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| # Materials            | \$ 300           | \$ -            | \$ -            | \$ -            | \$ 141          | \$ 160          |  |  |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 13,611</b> | <b>\$ 3,403</b> | <b>\$ 3,220</b> | <b>\$ 2,111</b> | <b>\$ 2,683</b> | <b>\$ 2,194</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 160           | \$ 160          | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 3,913         | \$ 668          | \$ 495          | \$ 550          | \$ 550          | \$ 550          | \$ 550          | \$ 550          |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ 781           | \$ 177          | \$ 119          | \$ 121          | \$ 105          | \$ 89           | \$ 84           | \$ 86           |
| # Materials            | \$ 11,480        | \$ 1,795        | \$ 1,435        | \$ 1,650        | \$ 1,650        | \$ 1,650        | \$ 1,650        | \$ 1,650        |
| # Overheads - External | \$ 1,321         | \$ 281          | \$ 204          | \$ 208          | \$ 181          | \$ 154          | \$ 144          | \$ 149          |
| <b>Total</b>           | <b>\$ 17,655</b> | <b>\$ 3,081</b> | <b>\$ 2,253</b> | <b>\$ 2,529</b> | <b>\$ 2,486</b> | <b>\$ 2,443</b> | <b>\$ 2,428</b> | <b>\$ 2,435</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## RGE OSG Communications Tower Shelter Facility Improvements

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-003640 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>H1 2025      | <b>In-Service Date:</b><br>H2 2027  |

#### Project description:

The objective will be to provide new Communication shelter, and remediate existing shelters. AVANGRID OSG remote communication tower and shelter locations house critical communication network elements. Each location has specific needs to support critical network equipment for fiber, microwave, radio systems. These systems include AC & DC backup power systems, cabling, heating, ventilation and cooling systems, single point grounding systems and security access systems. They also provide for a redundant and diverse design for the network. Failures associated with these components will cause failures to critical communications circuits needed for reliable energy delivery and their associated monitoring systems. Failure to critical wireless networks that support day to day field operational voice systems, and worker health and safety monitoring systems. Through ongoing wireless and fiber expansion project efforts, AVANGRID will build communication facilities (towers and shelters) for AVANGRID OSG communications equipment. The new facilities will be security enhanced com huts, indoor racks and cabinets, outdoor enclosures. The facility will include the building structure, AC and DC power plant, HVAC, racks, inside plant fiber / wireless network elements, and ancillary equipment to establish the OSG equipment as operational and functional on the network.

#### Project Scope:

Engineering, purchasing and deployment of a remote monitoring system in shelter facilities for NMC and Field Operations to monitor tower lights, loss of power, generator fuel levels, water intrusion, temperature, and fire.

#### Project Benefits:

Failures associated with these components will cause failures to critical communications circuits needed for reliable energy delivery and their associated monitoring systems. Failure to critical wireless networks that support day to day field operational voice systems, and worker health and safety monitoring systems. Additional initiatives will include enhancements to ensure the reliability and availability of the OSG Com systems.

#### Project Risks and Mitigation Plan:

The Shelter program replaces existing shelters that are at end of life. In order to maintain operations of the equipment on the tower the new shelter needs to be installed prior to decommissioning. The risk to the project is space availability for the new shelter.

#### Risk of No Action:

The consequence of not replacing shelters is the loss of communications from environmental conditions such as water penetration dripping on equipment. The risks associated with failure of the equipment include loss of line protection between substations, loss of SCADA. Loss of Land Mobile Radio communications, Loss of IT connectivity. risk of not doing the project is the limitation of expansion at the site as there may not be enough space for more/newer equipment.

#### Project Alternatives:

Alternative to shelter replacement could be extension repairs to the existing shelter included but not limited to roofs, walls, doors, HVAC systems.

#### Basis for Project Estimates

Existing Framework agreements and quotes for similar activities in the past

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025          | 2026          | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|---------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 37           | \$ 37         | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 300          | \$ 100        | \$ 100        | \$ 100        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 1,513        | \$ 463        | \$ 400        | \$ 650        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -          | \$ -          | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 1,850</b> | <b>\$ 600</b> | <b>\$ 500</b> | <b>\$ 750</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## RGE FAN + mobile technology refresh and expansion

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-003638 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>H1 2025      | <b>In-Service Date:</b><br>H2 2026  |

#### Project description:

A land mobile radio (LMR) is a two-way communication system for voice communications used by Electric and Gas Operations to work in the field and with the ECC. It is a fundamental safety tool that helps coordinate work between crews and the ECC. It includes handheld, vehicle-mounted, and fixed base radios.

The current Avangrid mobile radio system in New York is outdated and requires a comprehensive upgrade. To address this, a new core system is essential, along with the installation of new base stations and the deployment of updated mobile and portable radios.

In the Rochester Gas and Electric (RGE) service area, the planned decommissioning of the 89 East Ave facility necessitates the establishment of new base stations within Monroe County. Specifically, five new locations will be required to effectively replace the existing base station at 89 East Ave.

This mobile radio system is integral to the daily operations of our electric and gas network, ensuring reliable communication and coordination across the field.

#### Project Scope:

Upgrade the existing 30 year old LMR system with a new LMR system. Purchase and turn up a new Motorola Core Land Mobile Radio system, develop and deploy the five locations (Station 80, West Monroe SC, East Monroe SC, Island Cottage Rd and Station 43 that will replace 89 East Ave and require the refresh of the portable and mobile radios for Electric and Gas Operations personnel and trucks.

Out of the 5 locations, 3 will be owned by Avangrid and 2 will be leased space on Crown castle towers.

Accelerate procurement of 50% of the Motorola Mobiles for Gas Operations in 2024 so that we can begin installation and testing in 2025.

#### Project Benefits:

Reliable communication, by replacing and outdated system with a newer one. Enhanced Safety, efficient coordination among workers and teams, secure communications and wide coverage by deploying newer base stations with better technology

#### Project Risks and Mitigation Plan:

Tower work, like leases or structural analysis, runs into the risk of extensive lead times, which is usually mitigated by having secondary locations also ready to be developed if the primary don't evolve as needed.

Some of the lead times for materials are also very long, but they have been identified with the vendors and the supply is being accelerated.

#### Risk of No Action:

If an alternative system is not working by the time RGE abandons 89 East Ave, which is the main location for Land Mobile Radio in Monroe County, the Electric and Gas Operations crews in the division will not have a communications means to talk back to the Energy Control Center and coordination of the work in the field will be more complicate and less reliable, increasing the risk of accident.

#### Project Alternatives:

There are no alternatives to this project. The Land Mobile Radio system of RGE in Monroe County resides in 89 East Ave building, and it is being abandoned, so the system has to be evacuated from the building.

#### Basis for Project Estimates

Existing quotes for similar work, quotes from vendors for work in this project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020        | 2021        | 2022        | 2023        | 2024            |  |  |
|------------------------|-----------------|-------------|-------------|-------------|-------------|-----------------|--|--|
| # AFUDC                | \$ 9            | \$ -        | \$ -        | \$ -        | \$ -        | \$ 9            |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # External Services    | \$ 1,753        | \$ -        | \$ -        | \$ -        | \$ -        | \$ 1,753        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Materials            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -            |  |  |
| <b>Total</b>           | <b>\$ 1,762</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 1,762</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 87           | \$ 87           | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 500          | \$ 250          | \$ 250          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 188          | \$ 98           | \$ 89           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 2,263        | \$ 1,088        | \$ 1,175        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 304          | \$ 153          | \$ 151          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,342</b> | <b>\$ 1,677</b> | <b>\$ 1,666</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



## Telecomm Vertical Builds

### PROJECT INFORMATION

|                                 |                                       |                                       |                                    |                                     |
|---------------------------------|---------------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>UI-R5294-RGE-CM | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0        | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Operational SmartGrids Telecoms designs, builds or leases and maintains vertical assets such as self-supported towers and monopoles to maintain and expand the wireless networks. These vertical assets support Land Mobile Radio (LMR) for Electric and Gas Operations daily activities, wireless point to multipoint data communications for SCADA (Supervisory Control and Data Acquisition) services on reclosers, capacitor banks, voltage regulators and substations and wireless point to point data communications to replace carrier circuits and provide backhaul. The Energy Control Center utilizes SCADA data to remotely manage the Gas and Electric Grid. LMR is a voice communication system central to the switching and tagging activities of Electric and Gas Field Operations groups.

#### Project Scope:

The Vertical Infrastructure Program builds new sites, leases space on 3rd party towers, and upgrades existing assets such as monopoles or self supporting lattice towers to support the deployment of wireless communications.

- Building new site: acquisition of land by leasing, permitting, engineering, construction of the site, power, and backhaul connectivity (connecting the remote site to the Avangrid network)
- Leasing Space at a 3rd party site - engineering, design, construction of the site, power, and fiber backhaul to the Avangrid network
- Upgrading an existing asset - end of life replacements or upgrades to the existing asset to expand the capability of supporting new wireless equipment

#### Project Benefits:

Towers are needed to support the benefits provided by the systems that run off them. Land Mobile Radio will enhance Safety, efficient coordination among workers and teams by not relying in commercial systems and will be more resilient to storms. Point-to-multipoint wireless systems provide secure communications, improve distribution automation reliability and save OPEX as they replace cellular public services.

#### Project Risks and Mitigation Plan:

Risks Associated with vertical infrastructure program includes:

- An existing tower (owned or leased) is located near the site where the antenna and base station need to be located.
- Available of space for a shelter at the site or space on the tower for the antennas.
- Availability of space within owned sites such as service centers or substations to construct a tower and install a shelter
- Communications backhaul to connect the site to the network

#### Risk of No Action:

If new towers are not built nor existing towers are fixed, the telecom network is at risk, and its reliability will be jeopardized. Currently there are gaps in the wireless services provided by OSG Telecoms that need to be addressed so that internal users can benefit from them (land mobile radio for electric and gas operations, point to multipoint radio for distribution automation, point to point radio for high bandwidth communications when there is no fiber)

#### Project Alternatives:

An alternative to vertical assets depends on the use case. Land Mobile Radio antenna and base stations and other point to multi-point radio frequency communication links that Distribution Automation uses must be at an elevated position. Other systems such as point to point Microwave links can be replaced with extremely costly runs of fiber optic cable.

#### Basis for Project Estimates

Existing Framework agreements and quotes for similar activities in the past

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020            | 2021            | 2022            | 2023          | 2024          |  |  |
|------------------------|-----------------|-----------------|-----------------|-----------------|---------------|---------------|--|--|
| # AFUDC                | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |  |  |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |  |  |
| # External Services    | \$ 7,934        | \$ 2,728        | \$ 2,290        | \$ 1,385        | \$ 757        | \$ 773        |  |  |
| # Internal - Non-AC    | \$ 6            | \$ -            | \$ -            | \$ -            | \$ 3          | \$ 3          |  |  |
| # Internal, Labor      | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |  |  |
| # Materials            | \$ 69           | \$ -            | \$ -            | \$ 38           | \$ 30         | \$ -          |  |  |
| # Overheads - External | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 8,008</b> | <b>\$ 2,728</b> | <b>\$ 2,290</b> | <b>\$ 1,423</b> | <b>\$ 790</b> | <b>\$ 776</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Forecasted Capital, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2025          | 2026            | 2027          | 2028          | 2029          | 2030          | 2031          |
|------------------------|-----------------|---------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| # AFUDC                | \$ 37           | \$ 37         | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # External Services    | \$ 1,552        | \$ 251        | \$ 384          | \$ 184        | \$ 184        | \$ 184        | \$ 184        | \$ 184        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Labor      | \$ -            | \$ -          | \$ -            | \$ -          | \$ -          | \$ -          | \$ -          | \$ -          |
| # Internal, Overheads  | \$ 154          | \$ -          | \$ 57           | \$ 24         | \$ 21         | \$ 18         | \$ 17         | \$ 17         |
| # Materials            | \$ 2,275        | \$ 323        | \$ 575          | \$ 275        | \$ 275        | \$ 275        | \$ 275        | \$ 275        |
| # Overheads - External | \$ 275          | \$ -          | \$ 101          | \$ 43         | \$ 38         | \$ 32         | \$ 30         | \$ 31         |
| <b>Total</b>           | <b>\$ 4,294</b> | <b>\$ 611</b> | <b>\$ 1,117</b> | <b>\$ 526</b> | <b>\$ 518</b> | <b>\$ 509</b> | <b>\$ 506</b> | <b>\$ 507</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]

## Carrier Ethernet Replacement

### PROJECT INFORMATION

|                                                  |                                                      |                                        |                                        |                                    |
|--------------------------------------------------|------------------------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                             | <b>Project ID:</b><br>PRJ-006462                     | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Jones, Paul | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Operational Smart Grids | <b>Rate Case Category</b><br>Operational Smart Grids | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing          | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

OSG Telecom operates a carrier ethernet network delivering services for Substations, Offices, and control centers as well as traffic destined for NY-ISO. This network spans 200+ nodes transporting TDM (Time Division Multiplex) and IP (Internet protocol) services throughout the state.

The switches (models Ciena 5142, 5160 and 3926) are end of life and the manufacturer has provided notice that the platform will not get any new refreshes in the coming years, and that only critical upgrades to the operating system will be provided.

In 2017 NYSEG/RGE began deploying an IP/MPLS network within the Avangrid Secure Domain program. With the limits in performance of the existing carrier ethernet switches, NYSEG/RGE will expand the existing IP/MPLS network to carrier ethernet locations minimizing overlaying additional network equipment and utilizing expertise and knowledge within Avangrid.

#### Project Scope:

This project will span 7 years starting in 2025.

Efforts will include:

- Survey of carrier ethernet switch locations (expected completion year 1)
- Engineering of the replacement with IP/MPLS routers (expected execution year 1 through 3)
- Purchase of all routers, cards and ancillary material needed to fulfill the replacement (expected execution year 2 through 7)
- Facilities upgrades as needed (power plant, batteries, heating and cooling) (expected execution year 2 through 7)
- Staging and installation of the new routers in the existing locations (expected execution year 2 through 7)
- Migration of the services to the new routers in participation with ECC and SP&C (expected execution year 2 through 7)

OSG Telecom will use a mix of contracted and internal resources for project management, survey, engineering, installation, provisioning and migration of the services. Professional services and materials will be procured through existing and future Framework Agreements.

#### Project Benefits:

The primary benefit of this project is to improve the resiliency of the telecom network. This is achieved through unifying the wired wide area network technology and eliminating equipment that is already End Of Sale, with their End Of Life approaching in the next two years.

OSG Telecom team members are very familiar with the routers that will be replacing the carrier ethernet switches which will mean shortening of the mean-time-to-repair of incidents in the network.

IP/MPLS networks have established themselves as reliable solutions for data centers, telecom carriers, and utilities worldwide. This extensive user base offers several advantages:

- Widespread Expertise: The operation of IP/MPLS networks is a skill more commonly held compared to previous technologies, ensuring a larger pool of knowledgeable professionals.
- Real-World Testing: The broad deployment of these networks across various real-world scenarios means that hardware and software are continuously tested and refined by numerous companies.
- Vendor Interoperability: Due to the necessity for telecom carriers to interact seamlessly, IP/MPLS networks are known for their interoperability. This makes it easier to find alternative vendors for equipment purchases.

#### Project Risks and Mitigation Plan:

The major risk of the project is to schedule the outages needed to migrate the relay protection services over the new routers. This will be coordinated with NYISO and RGE ECC in time and in a case by case basis.

#### Risk of No Action:

The carrier ethernet network transport key telecommunication services like relay protections, SCADA communications, operational voice and its correct operation is critical for the performance of the electrical network.

The vendor of the platform has announced that they will no further develop the platform's capabilities and will only push critical patches, so with time, new features will not be added to the platform, which jeopardizes the ability of the network to improve its performance and calls for its replacement.

There is no alternative, the carrier ethernet nodes must be replaced, because there is not commitment from the vendor to carry on supporting the platform, and this jeopardizes the reliability and availability of the telecom network.

Estimates are based on previously received quotes from vendors and contractors.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

**Actual O&M, all amounts shown below in thousands (\$000's)**

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Sonet Replacement

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-006464 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Amato, Steve | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

OSG Telecom operates SONET rings to deliver services for Substations, Offices, and Control Centers as well as traffic destined for NY-ISO. This network spans 100+ nodes transporting TDM and IP services throughout the state.

The SONET manufacturer has provided notice that the SONET and T1 MUX platform have an end-of-sale date in Q2 of 2025 with unit repair and return services to be terminated in 2032 if components remain economically viable and are available.

In 2017 NYSEG/RGE began deploying an IP/MPLS network with the Avangrid Secure Domain. With the impending retirement of the SONET platform the expansion of the existing IP/MPLS network to SONET locations allows a rapid deployment, minimizes overlaying additional network equipment, and utilizes existing expertise and knowledge within NYSEG/RGE.

#### Project Scope:

This project will span 7 years starting in 2025.

Efforts will include:

- Survey of SONET locations (expected completion year 1)
- Engineering of the replacement with IP/MPLS routers (expected execution year 1 through 3)
- Purchase of all routers, cards and ancillary material needed to fulfill the replacement (expected execution year 2 through 7)
- Facilities upgrades as needed (power plant, batteries, heating and cooling) (expected execution year 2 through 7)
- Staging and installation of the new routers in the existing locations (expected execution year 2 through 7)
- Migration of the services to the new routers in participation with ECC and SP&C (expected execution year 2 through 7)

OSG Telecom will use a mix of contracted and internal resources for project management, survey, engineering, installation, provisioning and migration of the services. Professional services and materials will be procured through existing and future Framework Agreements.

#### Project Benefits:

The primary benefit of this project is to improve the resiliency of the telecom network. This is achieved through unifying the wired wide area network technology and eliminating equipment that is already End Of Sale, with their End Of Life approaching in the next two years.

OSG Telecom team members are very familiar with the routers that will be replacing the SONET equipment. This will result in reducing the mean-time-to-repair of incidents in the network.

IP/MPLS networks have established themselves as reliable solutions for data centers, telecom carriers, and utilities worldwide. This extensive user base offers several advantages:

- Widespread Expertise: The operation of IP/MPLS networks is a skill more commonly held compared to previous technologies, ensuring a larger pool of knowledgeable professionals.
- Real-World Testing: The broad deployment of these networks across various real-world scenarios means that hardware and software are continuously tested and refined by numerous companies.
- Vendor Interoperability: Due to the necessity for telecom carriers to interact seamlessly, IP/MPLS networks are known for their interoperability. This makes it easier to find alternative vendors for equipment purchases.

#### Project Risks and Mitigation Plan:

The major risk of the project is to schedule the outages needed to migrate the relay protection services over the new routers. This will be coordinated with NYISO and RGE ECC in time and in a case by case basis.

#### Risk of No Action:

The SONET network transport key telecommunication services like relay protections, SCADA communications, operational voice and its correct operation is critical for the performance of the electrical network.

As the vendor of the platform has announced its end of sale and end of life, it is critical to replace the SONET nodes with other devices. If this is not achieved, there is no commitment by the vendor to provide spares or support. The SONET manufacturer has provided notice that the SONET and T1 MUX platform have an end-of-sale date in Q2 of 2025 with unit repair and return services to be terminated in 2032 if components remain economically viable and are available.

There is no alternative, the SONET nodes must be replaced, because there is not commitment from the vendor to carry on supporting the SONET platform, and this jeopardizes the reliability and availability of the telecom network.

Estimates are based on previously received quotes from vendors and contractors.

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |
|--------------|-------|------|------|------|------|------|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027            | 2028            | 2029            | 2030          | 2031          |
|------------------------|-----------------|-------------|-----------------|-----------------|-----------------|-----------------|---------------|---------------|
| # AFUDC                | \$ 14           | \$ -        | \$ 2            | \$ 2            | \$ 2            | \$ 2            | \$ 2          | \$ 2          |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |
| # External Services    | \$ 1,350        | \$ -        | \$ 238          | \$ 238          | \$ 238          | \$ 238          | \$ 213        | \$ 188        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -            | \$ -          | \$ -          |
| # Internal, Labor      | \$ 540          | \$ -        | \$ 95           | \$ 95           | \$ 95           | \$ 95           | \$ 85         | \$ 75         |
| # Internal, Overheads  | \$ 242          | \$ -        | \$ 55           | \$ 49           | \$ 43           | \$ 36           | \$ 31         | \$ 28         |
| # Materials            | \$ 3,240        | \$ -        | \$ 570          | \$ 570          | \$ 570          | \$ 570          | \$ 510        | \$ 450        |
| # Overheads - External | \$ 489          | \$ -        | \$ 112          | \$ 100          | \$ 87           | \$ 74           | \$ 62         | \$ 56         |
| <b>Total</b>           | <b>\$ 5,875</b> | <b>\$ -</b> | <b>\$ 1,072</b> | <b>\$ 1,054</b> | <b>\$ 1,035</b> | <b>\$ 1,015</b> | <b>\$ 902</b> | <b>\$ 798</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Avangrid Security Domain (ASD) OSG Telecommunications (RGE)

### PROJECT INFORMATION

|                                 |                                  |                                       |                                    |                                     |
|---------------------------------|----------------------------------|---------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-002397 | <b>Charge Code:</b><br>Annual Program | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul  | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

Deployment of the telecommunications infrastructure such optical transport nodes and routers for Avangrid traffic (Gas SCADA, IT, Revenue Metering, Physical Security services and ASD traffic).

#### Project Scope:

Design, installation and commissioning of optical transport nodes and routers in coordination with Physical Security, SCADA, IT, AMI and other groups within Avangrid Networks.

#### Project Benefits:

Improve the resiliency and reliability of the telecommunications network that services SCADA and automations.  
Reduce OPEX by means of implementing a multi-service network.  
Increase flexibility of the telecommunications network, easing deployment of new services in the network reducing Time-To-Market.  
Interconnect all the OPCOs in a single network to allow for data center consolidation.  
Continued expansion of Telecommunications Infrastructure for all Avangrid automation programs.

#### Project Risks and Mitigation Plan:

Environmental issues might arise while deploying the telecommunications equipment which might involve improving the HVAC and noise isolation systems within the substations.  
Power systems in substations and service centers might need to be upgrade to be able to provide enough power to support the new systems.  
An audit of the environmental systems where new nodes are deployed will be carried out to help identify if issues will arise.

#### Risk of No Action:

if the program doesn't carry on, the Physical Security deployment and migration to the new system will halt to a stop, making the company liable of fines due to non compliance

#### Project Alternatives:

No alternatives available since there is such a great amount of network devices already deployed that changing the solution would not be practical

#### Basis for Project Estimates

Estimates are based on previously received quotes from contractors.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2020 | 2021     | 2022     | 2023   | 2024     |  |  |
|------------------------|-----------------|------|----------|----------|--------|----------|--|--|
| # AFUDC                | \$ 130          | \$ - | \$ 7     | \$ 117   | \$ 1   | \$ 5     |  |  |
| # CIAC                 | \$ -            | \$ - | \$ -     | \$ -     | \$ -   | \$ -     |  |  |
| # External Services    | \$ 6,150        | \$ - | \$ 1,124 | \$ 2,781 | \$ 895 | \$ 1,349 |  |  |
| # Internal - Non-AC    | \$ 100          | \$ - | \$ -     | \$ -     | \$ 61  | \$ 39    |  |  |
| # Internal, Labor      | \$ 35           | \$ - | \$ -     | \$ -     | \$ -   | \$ 35    |  |  |
| # Internal, Overheads  | \$ -            | \$ - | \$ -     | \$ -     | \$ -   | \$ -     |  |  |
| # Materials            | \$ -            | \$ - | \$ -     | \$ -     | \$ -   | \$ -     |  |  |
| # Overheads - External | \$ -            | \$ - | \$ -     | \$ -     | \$ -   | \$ -     |  |  |
| <b>Total</b>           | <b>\$ 6,414</b> | \$ - | \$ 1,131 | \$ 2,898 | \$ 957 | \$ 1,428 |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026            | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 85           | \$ 84           | \$ 1            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 422          | \$ 190          | \$ 231          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -            | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 153          | \$ 69           | \$ 84           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 182          | \$ 96           | \$ 86           | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 2,094        | \$ 1,034        | \$ 1,060        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 319          | \$ 159          | \$ 160          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 3,254</b> | <b>\$ 1,631</b> | <b>\$ 1,623</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--------------|-------|------|------|------|------|------|------|------|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |



## RGE Data Center Consolidation

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-001263 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>Ongoing      | <b>In-Service Date:</b><br>Ongoing  |

#### Project description:

The goal of the Data Center Consolidation Project is to consolidate the 15 AVANGRID data centers hosting OSG workloads in order to mitigate obsolescence risks due to the state of the current data centers and as part of the strategic consolidation of the current existing Data centers into fewer core data centers, one in East Coast (Orange – CT) and other potentially in West Coast (Portland-OR). This data center consolidation project will allow capturing a total annual net infrastructure and operational efficiencies due to the consolidation of locations & services reduction.

#### Project Scope:

Execution of projects within the Data Consolidation Program will be performed in Phases. The goal throughout this program is to ensure that all the data flow to the Control Center remains uninterrupted.

The equipment for the AVANGIRD Secure Domain (ASD) supports physical and cyber controls, Production (PROD) & Quality Assurance (QA) environments for AVANGRID.

This is a multi-year project spanning from 2026 – 2034.

#### Project Benefits:

Through the consolidation of many Data Centers, which are dispersed over the entire Avangrid footprint, into fewer locations is beneficial by the savings in facilities costs, efficiencies of support personnel, standardization and improvements of infrastructure, increased resiliency and increased operational effectiveness.

- Highly resilient, concurrently maintainable data centers
- Significant financial cost reductions derived from OT infrastructure consolidation, DC consolidation, and avoidance of new DC buildout due to currently stranded power constrained by limited remaining whitespace
- Improved service delivery engagement model that aligns technology investment with business outcomes – implement tighter integration with business
- Reduced complexity and business risk due to consolidation of 15 data centers to 2 modern hosting centers
- Improved workload flexibility
- Aligns with regulated utility core infrastructure under rate base and rate of return regulation
- Aligns with Avangrid's operational strategic objectives of providing internal operations and customers within its footprint increased capabilities and results for situational awareness, reporting capacity, system reliability, and system availability
- Aligns with Avangrid's operational strategy of aligning all networks under a single unified data model
- Aligns with Avangrid's operational objective of orienting investment toward innovative solutions which prepare the company for future and emerging needs

#### Project Risks and Mitigation Plan:

This long-term strategy will allow a reduction of the current footprint by virtualizing and consolidating the current infrastructure to increase the operational reliability, incorporate Avangrid's cybersecurity solutions, and provide enhanced service to the different business areas in the coming years, and allow capturing a total annual net infrastructure and operational efficiencies due to the consolidation of locations & services reduction. This new data center will allow leverage with the implementation of a new Disaster Recovery (DR) schema (with another AVANGRID data center most likely the one located in Portland-Oregon), that will enhance current DR model.

OT Infrastructure documentation is not evident preventing complete assessment. Avangrid is advised to remediate the following gaps:

- Improving Business Impact Analysis (BIA) would produce proper Recovery Time Objective (RTO) and Recovery Point Objective (RPO) tiering specifications
- Approximated storage information, with no available differentiation between used and available storage amounts
- Lack of operational controls and metrics prevents properly administered infrastructure management
- Application to infrastructure mapping
- Unavailable compute, storage and network historical growth trends

This long-term strategy will allow a reduction of the current footprint by virtualizing and consolidating the current infrastructure to increase the operational reliability, incorporate Avangrid's cybersecurity solutions, and provide enhanced service to the different business areas in the coming years, and allow capturing a total annual net infrastructure and operational efficiencies due to the consolidation of locations & services reduction. This new data center will allow leverage with the implementation of a new Disaster Recovery (DR) schema (with another AVANGRID data center most likely the one located in Portland-Oregon), that will enhance current DR model.

**Risk of No Action:**

- Existing data center portfolio is not suitable for long-term technology hosting with significant resiliency gaps and stranded power
- All data centers included in the assessment process have at least one critical infrastructure system with no redundancy (i.e., Uptime Tier I Equivalent)
- Most data centers are utilizing a very low percentage of the available power, yet available space
- Maintenance and operations practices for critical electrical and mechanical equipment is deficient across all data centers
- Physical security protocols for systems for each data center are inconsistent, and in many cases are lacking

If **Data Center Consolidation project is not executed**, the obsolescence risk of current Rochester and Augusta data centers will not be mitigated. At minimum, the two options shown below should be considered:

- Enhance the current Data Centers in order to be compliant with Corporate Standards, implementing Tier 3 Data Centers (See Datacenter TIER Classification).
- Increase operational reliability by upgrading current electrical and mechanical services' redundancy levels, and where applicable consolidate data centers.

**Project Alternatives:**

Avangrid is now prepared to move forward in establishing Avangrid's data center consolidation strategy with the development of the following:

- Deep-Dive Analysis: (Deep-Dive Discovery/Application Analysis, and Detailed Design & Business Case)
- Migration Planning and Execution
- Approval of the next steps is strongly recommended as these activities will enable Avangrid to meet their desired operational and procedural efficiency goals.

**Basis for Project Estimates**

The estimate for this project was based on the following:

1. External Services: An estimate from General Services was provided for the cost to build/create a new space and to be able to house a secure location for the new data centers. This included quotes from Delta Engineering and other external vendor services utilized for DC2 Relocation project. Known External Services were added into the project forecast estimate based on contractor SMEs and the timeline of the project. Management support and application vendors assumed to be available when needed for Professional Services.
2. Materials: A Bill of Materials (BOM) was created to determine all hardware, software, and professional services needed to build/create a new data centers.
3. AFUDC (Used avg. of 0.06757% for the over all budget)
4. Overheads - Internal & External (Used avg. of 0.06% for the over all budget)
5. Internal Labor charges (Project Management and Field Operations personnel charging their time during the implementation)

Details provided in the Cost Estimates sheet. Vendor quotes attached for reference.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total         | 2020        | 2021        | 2022        | 2023          | 2024         |  |  |
|------------------------|---------------|-------------|-------------|-------------|---------------|--------------|--|--|
| # AFUDC                | \$ -          | \$ -        | \$ -        | \$ -        | \$ 6          | \$ -6        |  |  |
| # CIAC                 | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # External Services    | \$ 297        | \$ -        | \$ -        | \$ -        | \$ 203        | \$ 94        |  |  |
| # Internal - Non-AC    | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Labor      | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Internal, Overheads  | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Materials            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| # Overheads - External | \$ -          | \$ -        | \$ -        | \$ -        | \$ -          | \$ -         |  |  |
| <b>Total</b>           | <b>\$ 297</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ 209</b> | <b>\$ 88</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ 1,332         | \$ 130          | \$ 65           | \$ 260          | \$ 219          | \$ 219          | \$ 219          | \$ 219          |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 9,267         | \$ 880          | \$ 1,051        | \$ 1,685        | \$ 1,413        | \$ 1,413        | \$ 1,413        | \$ 1,413        |
| # Internal - Non-AC    | \$ 2,194         | \$ 43           | \$ 427          | \$ 355          | \$ 342          | \$ 342          | \$ 342          | \$ 342          |
| # Internal, Labor      | \$ 1,971         | \$ 192          | \$ 96           | \$ 384          | \$ 325          | \$ 325          | \$ 325          | \$ 325          |
| # Internal, Overheads  | \$ 1,033         | \$ 149          | \$ 59           | \$ 232          | \$ 171          | \$ 145          | \$ 136          | \$ 140          |
| # Materials            | \$ 11,261        | \$ 1,093        | \$ -            | \$ 2,304        | \$ 1,966        | \$ 1,966        | \$ 1,966        | \$ 1,966        |
| # Overheads - External | \$ 2,082         | \$ 276          | \$ 136          | \$ 470          | \$ 346          | \$ 294          | \$ 276          | \$ 284          |
| <b>Total</b>           | <b>\$ 29,141</b> | <b>\$ 2,763</b> | <b>\$ 1,835</b> | <b>\$ 5,689</b> | <b>\$ 4,782</b> | <b>\$ 4,704</b> | <b>\$ 4,678</b> | <b>\$ 4,689</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Storm System (ARCOS improvement / Replacement)

### PROJECT INFORMATION

|                                                     |                                                      |                                        |                                                  |                                    |
|-----------------------------------------------------|------------------------------------------------------|----------------------------------------|--------------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E                                | <b>Project ID:</b><br>PRJ-005330                     | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Santiago Vale, Felipe | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Processes and Technologies | <b>Rate Case Category</b><br>Operational Smart Grids | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing                    | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

System for both daily operations and emergency scenarios. Seamless API integration with SAP, Salesforce platform and OMS systems for automatic update of data and shifts for the creation of call outs, managing how to communicate resource request and receive resource responses from responding contractors with Avangrid and industry standards.

#### Project Scope:

The following sections identify business requirements at a high level.

- The feature needs to support automated phone calls, text messages, and emails to alert and notify team members and external resources.
- Include the ability to track responses, receive acknowledgments, and escalate notifications if necessary.
- The solution must be user-friendly and integrate seamlessly with our current system.
- Support from the solution team is needed to increase adoption/utilization to ensure full benefit of the solutions. Support is also needed to ensure it can be fully integrated with, SAP, and our new scheduler/mobile solution.
- Responses to callouts that are real time.
- The ability to manage, gain real time visibility of people and collaborate with both internal and external resources using one system.
- One system to transition from day-to-day operations to emergency mode and back again.
- Mobile technologies that get information from people in the field to the managing teams back at the home office.
- Mobile application for field workers to check status of availability.
- Reporting and Analytics: Provide automated detailed reports for callout performance.
- Reporting functions in mass vs one by one
- Ability for employees to update status or alerts vs manually updating
- Mass updating work mode (Blue sky to Gray and vice versa)
- Functionality to search employees, roles, and areas by keywords
- Call out list automatically updates vs manual updates
- Easy and fast contractor resource mobilizations.
- Ability to manage responding partners (contractors) through sharing rosters, automated request, and responses.
- Ability to build in union regulatory requirements for call outs.
- SIREN notifications for company wide information to all employees (email, Text, mobile app)
- Single Sign on.
- On-site training at Avangrid facilities in the USA territory.
- Message Personalization: Enable customization of call-out message with specific details.

#### Project Benefits:

- Reduce restoration time
- Real-time GPS Tracking
- Timesheet & invoice automation
- Save money & improve cost recovery
- Better information to make decisions
- Improve regulatory relations
- Fully integrate with core systems
- Vendors already on-boarded (probably)
- Easy to use

#### Project Risks and Mitigation Plan:

The biggest risk is the recoverability of the cost associated with storm events, as well as not being able to follow the recommendations of the NYMA audit and continue using manual processes for storm response. The contingency plan would be to reach out to our current vendor that we are using for emergency response for a call-out system as they currently don't have an emergency response solution that meets the regulatory and operational needs we have, with the hopes of getting them to develop one as we don't have ownership of the solution.

#### Risk of No Action:

Service reliability. Increased CAIDI/SAIDI response time and puts the company at risk of potential penalties. Conflicts with callout rules regarding union contracts and other policies.

WRM, SEW, ARCOS and Salesforce were evaluated as possible solutions for this project. But due to technical feasibilities, growth and future considerations and evaluating operational efficiencies and costs, Salesforce ended up being the winning bid.

The project still hasn't selected the final vendors yet, but this project could be considered a continuation of the FieldForce/ New Scheduler project , which is implementing the new scheduling and dispatching solution, as this project is implementing a storm response system building on top of what FieldForce/New Scheduler had accomplished. The costs for external services were estimated from early conversations with vendors, this estimation was able to be done as the audience will be the same as in FieldForce/New Scheduler, therefore providing a basis for the estimate.

[illegible]

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

| Capital Details:       | Total           | 2025          | 2026            | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|---------------|-----------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 53           | \$ 53         | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 1,995        | \$ 591        | \$ 936          | \$ 468        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 600          | \$ 253        | \$ 231          | \$ 115        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 90           | \$ -          | \$ 62           | \$ 28         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -          | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 233          | \$ -          | \$ 161          | \$ 72         | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 2,971</b> | <b>\$ 898</b> | <b>\$ 1,390</b> | <b>\$ 683</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

[illegible]

## DC2 (Station 80) Relocation Project RGE

### PROJECT INFORMATION

|                                 |                                  |                                      |                                    |                                     |
|---------------------------------|----------------------------------|--------------------------------------|------------------------------------|-------------------------------------|
| <b>OpCo:</b><br>RG&E            | <b>Project ID:</b><br>PRJ-005882 | <b>Charge Code:</b><br>Project       | <b>Project Sponsor:</b><br>Capital | <b>Project Type:</b><br>Jones, Paul |
| <b>Business Area:</b><br>Common | <b>Rate Case Category</b><br>0   | <b>Project Stage:</b><br>Jones, Paul | <b>Start Date:</b><br>Sep-2024     | <b>In-Service Date:</b><br>H2 2027  |

#### Project description:

The equipment and applications, as well as the current DC2 (Station 80) site, are not stable and must be moved to a new location. DC2 (Station 80) is not a suitable data center for this critical equipment as it is currently a mobile trailer with insufficient environmental capacity. In June 2023 there was a catastrophic failure of the HVAC system and all the equipment within the structure was exposed to prolonged high temperatures. This resulted in DC2 (Station 80) going down and damaged ASD equipment. The relocation and installation of new equipment to support the ASD will ensure Avangrid's ability for the Physical Security, Security Operations Center (SOC), Network Operations Center (NOC), and the Network Monitoring Center (NMC) to comply with and support cybersecurity, regulatory and operational needs that are supported by the ASD. This project's objective is to purchase and install new equipment (Telecom, Network and Servers) into the Operational Smart Grid (OSG) Disaster Recovery (DR) location at 18 Link Dr., Kirkwood, NY. Once the equipment and applications are successfully transitioned, the existing DC2 (Station 80) located at 485 Lehigh Station Rd., West Henrietta, NY. All equipment located at DC2 (Station 80) will then be decommissioned and no longer used in support of the ASD.

#### Project Scope:

The project's scope is to move the existing Avangrid Secure Domain (ASD) Disaster Recovery infrastructure at DC2 (Station 80) in West Henrietta, NY, to the Kirkwood, NY Data Center. Specifically, this includes equipment (Telecom, Network and Servers) and applications for the ASD Data Center 1 (DC1) PROD environment (all OpCos). Applications and Services supported by the ASD include:

- AMAG (American MAGnetics) Symmetry & Connect: Physical Access Security Management System used to perform badge ID management functions and to ensure management and surveillance of physical access including intrusions and provide access history and management linked to the ASD monitoring and cybersecurity tools.
- Video Management Systems: Provides a unified video gathering and analytics software that enables intelligent analysis of pre-defined event types as they are streamed from all video surveillance cameras deployed on the Avangrid sites.
- Centralized Internet Protocol (IP): Provides connected intercom functionality to all connected remote sites that can eventually be linked to incident response activities.
- Applications: Centrally store (using a digital password vault), manage, control and log access to privileged account passwords.
- LogRhythm (Security Information and Event Management (SIEM) Software Platform): Collects all logs coming from network devices or applications to produce correlation events and trigger the incident response process. This application is interfaced with the Governance Risk Management functionality.
- Tenable, TrendMicro: Assess and manage any potential Malware, Threat, and Vulnerabilities.

The above will be accomplished by leveraging the existing Kirkwood Datacenter site, building out all new supporting infrastructure and equipment and then transitioning all the existing applications to the new infrastructure. Once operational and in production, the old Station 80 location will be shut down, old equipment removed and decommissioned.

#### Project Benefits:

"Relocation of the current Data Center 2 (Station 80) location (DC2), provides a stable Disaster Recovery site for the Avangrid Secure Domain (ASD) and meets the Cyber Security requirement needs at all Avangrid USA locations including Threat, Vulnerability, and Risk Management Controls per NERC CIP Standards to include:

- CIP-005 Electronic Security Perimeter(s).
- CIP-006 Physical Security of BES Cyber Systems.
- CIP-007 System Security Management.
- CIP-009 Recovery Plans for BES Cyber Systems.
- CIP-010 Configuration Change Management and Vulnerability Assessments.

**Project Risks and Mitigation Plan:**

Top Risks & Mitigation Plan(s) for this project include:

1. Station 80 is unstable. This is evident from the failure with HVAC units in 2023. The mitigation plan is to relocate this Data Center to Kirkwood NY and build a new Data Center (DC2).
2. Build-out of space at Kirkwood for the new DC2 Data Center timeline is nearly 1 year. The mitigation plan is to have weekly meetings with external services (Delta Engineers) and General Services, along with periodic design review meetings with a larger group of internal Stakeholders. This plan is to identify any areas of schedule crashing/compression to reduce the 1 year timeline.
3. The project's budget is above what was previously approved at ESP/GSP on 9/4/2024. The mitigation plan is to complete a new PPM template and prepare for another ESP/GSP meeting on 3/4/2025 with the goal of obtaining more funding.
4. The project team SMEs are working with UTI to maintain a temporary level of stability at Station 80 until the new data center can be build in Kirkwood NY.

**Risk of No Action:**

1. Station 80 is currently unstable and there is a risk of failure again if we do not relocate this data center from a stand-alone shelter to an actual building where it can be properly maintained environmentally and physically by staff.
2. The schedule needs to be crashed/compressed where possible to reduce the overall project's timeline to reduce the risks listed above with the instability of Station 80.
3. The project cannot be completed in scope if we do not secure sufficient budget.
4. Failure to complete the project would result in reactive dollars spent if/when additional failures at Station 80 occur due to inadequacies and instability of the structure.
5. Additional failures at Station 80 would directly affect the stakeholders (i.e., customers, shareholders, and communities) serviced by NYSEG & RGE.

**Project Alternatives:**

Alternative 1: Stabilize Station 80. SMEs on the project team reviewed this and there is no way to create permanent stability to Station 80 at its current location. The reason for this is that Station 80 is an existing shelter at an Electric Transmission substation. Space is limited and the data center cannot be expanded. There is no onsite personnel. Only alarms monitored by a 3rd party contractor, UTI, is the current reaction to any temperature changes in the shelter. The alternative ideas included a new shelter and transferring equipment to a new shelter, but even the largest shelter would not accommodate future growth or provide a proper climate controlled environment or sufficient personnel space. Therefore, this alternative was not cost estimated.

The preferred solution is to build-out a new space in an existing Avangrid/NYSEG building located at 18 Link Drive in Kirkwood NY. This was selected as the office location is the main headquarters for NYSEG and that Station 80 is a backup data center to the former 89 East Ave data center in Rochester that has been/is in the process of being relocated to Vestal, NY which is only several miles from the Kirkwood NY location. This solution address the above risk #1 to Station 80 as well as allowing for increased data center growth and monitoring by Avangrid personnel.

**Basis for Project Estimates**

The estimate for this project was based on the following:

1. A Bill of Materials (BOM) was created to determine all hardware, software, and professional services needed to build/create a new data center at Kirkwood NY.
2. An estimate from General Services was provided for the cost to build/create a new space at the Kirkwood NY location to be able to house a secure location for the new data center, DC2.
3. Known External Services were added into the project forecast estimate based on contractor SMEs and the timeline of the project.
4. Assumed percentages for both internal and external Overheads, as well as AFUDC were calculated and added to the project estimate.
5. Internal labor hours were based on the 89 East Ave actual hours because this DC2 project is very similar in project scope to that project.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total        | 2020 | 2021 | 2022 | 2023 | 2024  |  |  |
|------------------------|--------------|------|------|------|------|-------|--|--|
| # AFUDC                | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| # CIAC                 | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| # External Services    | \$ 97        | \$ - | \$ - | \$ - | \$ - | \$ 97 |  |  |
| # Internal - Non-AC    | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| # Internal, Labor      | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| # Internal, Overheads  | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| # Materials            | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| # Overheads - External | \$ -         | \$ - | \$ - | \$ - | \$ - | \$ -  |  |  |
| <b>Total</b>           | <b>\$ 97</b> | \$ - | \$ - | \$ - | \$ - | \$ 97 |  |  |

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027          | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-------------|-----------------|---------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ 702          | \$ -        | \$ 202          | \$ 500        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 777          | \$ -        | \$ 753          | \$ 25         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ 17           | \$ -        | \$ 17           | \$ 1          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ 351          | \$ -        | \$ 339          | \$ 12         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ 249          | \$ -        | \$ 242          | \$ 7          | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ 2,885        | \$ -        | \$ 2,796        | \$ 89         | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ 483          | \$ -        | \$ 470          | \$ 14         | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 5,465</b> | <b>\$ -</b> | <b>\$ 4,818</b> | <b>\$ 647</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]





# **NYSEG Common Security**

## Physical Security Lifecycle Management Program-NYSEG

### PROJECT INFORMATION

|                                   |                                       |                                                |                                         |                                        |
|-----------------------------------|---------------------------------------|------------------------------------------------|-----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-005488      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Hicks, Roger | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Security | <b>Rate Case Category</b><br>Security | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing           | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The company has a duty to its employees and the public to ensure their safety by ensuring that Corporate Security has the most up to date systems. The upgrade of the systems impacts everyone by giving a greater ability to protect the company's physical assets and the safety of the public. The main goal of the project is to upgrade existing or installing new security systems at critical facilities. There is a continued need to ensure that the electric grid is protected from physical attack. The current equipment installed is aged and, in most cases, using analog cameras. This prevents the Security Operations Center from properly monitoring the Physical Access Control and Video Management systems efficiently and effectively. To keep the system in compliance with regulators and mitigate to risk of fines being levied it is important to complete this work.

#### Project Scope:

The scope of work includes replacing antiquated systems. Antiquated systems are systems that have equipment that is end of life, no longer supported by the manufacturer, or no longer functioning as required by Corporate Security. The systems being replaced are no longer efficient for monitoring the companies critical assets. Most manufacturers recommend replacing equipment every five to seven years. With new equipment Corporate Security will have the ability to have a clearer overall picture for detection and recognition. This will be a phased approach assessing and upgrading the most critical locations. A project plan will then be created to determine the schedule for rollout / upgrade. Corporate Security will be replacing aged equipment such as Cameras, Card Readers, Electric locks, Door Controllers, Video Management servers, and switches. As part of this install Corporate Security will utilize the built-in analytics that are provided in the newer more advanced cameras. The use of Analytics provides early detection of alarms that the Security Operations Center receives and acts on. Existing systems that have recently been installed will be outside the scope of the project. NYSEG currently has 50 sites that have security equipment installed that are part of the lifecycle program. The following sites are projected to be completed in 2025 by priority.

High: Cadyville Hydro, Kent Falls Hydro, Mechanicsville Hydro, Mill C Hydro, High Falls Hydro

Medium: Ithaca, Oneonta

Low: Chatam, Cooperstown, Chateaugay

#### Project Benefits:

Updating and installing new equipment at out critical locations gives the company an advantage against malicious actors that are trying to breach our physical security perimeter and systems. Upgrading the systems allows for a greater opportunity to detect and determine potential threats before they are given the chance to act. The upgrade or installation of new equipment allows the Security Operations Center to have enhanced tools to better monitor critical facilities that let Avangrid provide safe and reliable services to both commercial and residential customers.

#### Project Risks and Mitigation Plan:

Delay or non-execution of critical asset protection could result in fines, penalties, and reputational damage. Risks to the project would long-lead time items, staffing, end user support budget. Each of these risks have a potential to impact project timeline, budget, and quality. These risks are mitigated by creating a project plan including scope of work, project stakeholders, project plan including specific milestones. Determining long lead-time items at the onset of the project to ensure that they can be ordered right away to keep the project on schedule. A contingency to this would be having an alternative device that has a similar function. Another mitigation is keeping the systems in place up to date on all patches and firmware updates as per the manufactures standards.

#### Risk of No Action:

Failure to maintain current devices and headend for Physical Security systems will result in a lack of support from manufacturers, cyber vulnerabilities through lack of patching and lack of support; and the loss of devices and systems through attrition or lifecycle failure resulting in overall open vulnerability to both physical and cyber intrusion or attacks against the resource such as undetected entry and larger grid overall. Aside from the actual threats to continuity of operations and stable operating environment, these conditions would result in non-compliant (near-miss and/or self-report requirements) NERC CIP status as there are many Physical Security Perimeters within RGE footprint. Non-compliant status may result in fines up to \$1,000,000 per day per violation.

#### Project Alternatives:

Project alternative keep the system the way it is and work with the existing infrastructure that creates a bottleneck. The current network puts restrictions on the amount of bandwidth that is available to Corporate Security. Another alternative is to keep installing leased fiber that has a monthly recurring OPEX cost. This would cost the company approximately \$1 million a year.

#### Basis for Project Estimates

Existing quotes as possible; Analogous costing from prior year, similar scale and scope projects. Projects are competitively sourced with two rounds of marketplace testing through Framework Agreement process (competitive awards) and competitively awarding site work between Framework Agreement vendors.

### FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 39,423        | \$ 5,266        | \$ 5,392        | \$ 5,527        | \$ 5,638        | \$ 5,751        | \$ 5,866        | \$ 5,983        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 39,423</b> | <b>\$ 5,266</b> | <b>\$ 5,392</b> | <b>\$ 5,527</b> | <b>\$ 5,638</b> | <b>\$ 5,751</b> | <b>\$ 5,866</b> | <b>\$ 5,983</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## OT Cybersecurity - Architecture NYSEG

### PROJECT INFORMATION

|                                   |                                       |                                        |                                          |                                    |
|-----------------------------------|---------------------------------------|----------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG             | <b>Project ID:</b><br>PRJ-006609      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Hill, Chelsea | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Security | <b>Rate Case Category</b><br>Security | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

OT Cybersecurity Architecture is a vertical within Corporate Security and Resilience focused on the protection and defense of NYSEG's operational technology (OT) networks. This Cybersecurity Architecture project encompasses three primary initiatives:

- Risk-Mitigating Foundational Architecture
- Risk-Mitigating Reference Architecture
- Risk-Mitigating Transformational Architecture.

With over 40 security zones spread out through all its operating companies, Avangrid faces the urgent need to transform to an agile, adaptive architecture with network segmentation and new adaptive technologies to meet increasing dynamic threats. Transformation is essential to address technology challenges, enhance security and reduce risks associated with security zones and well-publicized increasing threats specifically targeting critical infrastructure. Objectives include life safety for employees and the public, enhancement of reliability and resiliency at a reasonable cost, and ensuring business continuity in the face of increasing risk as identified by FBI Director Christopher Wray as "The Defining Threat of our Generation" - namely the Adversarial Nation State Threat.

#### Project Scope:

- Implement effective countermeasures to increasing Adversarial Nation State Threat
- Mitigate accelerating threat from disruptive technologies, such as Artificial Intelligence (AI) and Quantum, by inserting risk reduction technologies such as Automated Moving Target Defense (AMTD), Deceptive Technologies (e.g. Honeypots), Post Quantum Cryptography (PQC) algorithms and Quantum Key Distribution (QKD) cryptography
- Improve our overall cybersecurity program maturity through alignment with standards and frameworks such as NIST CSF
- Incorporate risk-mitigating Zero-Trust Architecture (ZTA) principles to include identity-based micro-segmentation, situational awareness, and device and user authentication and authorization
- Acknowledging that critical infrastructure networks are most likely compromised (cf, recent US Worldwide Threat Assessments), we aim to increase resiliency through new technologies that enable continued operations in the face network compromise
- Enhance protection technology for high-risk applications to reduce the risk of a successful network intrusion while maintaining business requirements and continue security zone expansion in ASD (Avangrid Secure Domain) for electrical and gas environment
- Protect sensitive data and systems from unauthorized access and exposure by incorporating advanced technologies such as Distributed Repositories, Data Mesh / Data Fabric with Big Data Analytics, restricting lateral movement of attackers per NERC CIP-015
- Install Meet-Me-Points (MMP) to provide traffic aggregation, deduplication, and decryption capabilities without increasing the load on the network
- Speed system development by automating discovery of Current State and facilitating Agile Development Framework (ADF) process in alignment with Congressional-directed DOE Cyber-Informed Engineering (CIE)
- Develop Standards and replicate artifacts of reliable, proven reference architecture to foster understanding and adoption of standards
- Enhance efficiency by providing greater visibility into operational architecture by centralizing disparate dashboards to improve security and reduce risk and operating cost

#### Project Benefits:

- Increase resiliency and reliability to ensure service to rate payers
- Reduced risk and improved cybersecurity in alignment with regulatory, government, industry and corporate policies and standards
- Mitigation of significant increase in risk from Adversarial Nation States magnified by the advent of AI and Quantum that have burrowed into US critical infrastructure with the ability to physically wreak havoc
- Decrease likelihood of attacker compromise by dynamically changing the attack surface such that countermeasures may be applied
- Improved business continuity
- Improved life safety for employees and the public
- Preservation of financial and business reputation
- Ensuring business continuity through protection of assets from increasing risk
- Cost reduction through shared network resources, streamlined network operations and increased speed in development

#### Project Risks and Mitigation Plan:

All Project Risks will follow the Risk Mitigation Plan (RMP) outlined in our ADF (Agile Development Framework) in compliance with DOE (Department of Energy) CIE (Cyber-Informed Engineering):

- **Cost Risk:** Funding risks will be mitigated by leveraging existing technologies where possible
- **Performance Risk:** Risk to insertion of new technologies will be mitigated by quantifying performance in the Cyber Lab via formal test planning that measures specific metrics, followed by a Pilot to evaluate performance in Development and Production environments prior to full implementation at operating companies
- **Schedule Risk:** Risks that could impact schedule including procurement, logistics, material availability, resource availability, etc. will be mitigated by proper planning and strict adherence to the process outlined in our ADF

**Risk of No Action:**

- Per 2024 Cost of a Data Breach Report from IBM, the cost of a data breach has reached alarming levels, with the global average spiking to \$4.88 million—a 10% increase over the previous year. This surge, emphasizes the severe financial and reputational damage that organizations face during and after a breach.
- Per FBI, “China’s hacking program is greater than every other nation combined, outnumbering us more than 50 to 1. China has burrowed into US critical infrastructure with ability (and intent) to physically wreak havoc on our critical infrastructure.” Estimated impact is incalculable--many \$10M's.
- Per NERC response to FERC Order No. 887 directing NERC to develop Reliability Standards requirements that are “forward-looking, objective-based,...the CIP networked environment remains vulnerable to attacks that bypass network perimeter-based security controls traditionally used to identify the early phases of an attack.” Estimated impact is incalculable, but significant attack would be on the order of tens of millions of dollars.
- Non-compliance of the forthcoming NERC CIP-015 requirements may result in fines up to \$10M per incident.
- No action regarding the Quantum Computing related threat essentially compromises ALL our encryption.
- No action regarding automating current state will hinder our ability to discern and respond to complex attacks.
- No action on Moving Target, Deception other advanced technologies will leave our infrastructure less resilient and less able to maintain operations in the face of compromise.
- No action to mitigate AI related attacks will result in Avangrid systems being overwhelmed by automated AI-driven systems.
- No action regarding Large-Scale Situational Awareness will result in difficulty discerning and responding to complex attacks.

**Project Alternatives:**

Few alternatives exist to mitigate the massive threat to critical infrastructure represented by adversarial nation-state use of AI and Quantum. Other technologies we plan to explore include:

- Isolation from the internet
- Development of full manual operations capability

**Basis for Project Estimates**

For expansion of applications and tools currently in use at Avangrid Networks, invoices of actual procurement and historical installation are the basis for our estimates with accommodations for inflation and future cost increases factored in.

For new technologies, vendor quotes will serve as the basis of estimate. Team experience will be leveraged. Project planning will be supported with integration, test and evaluation in the Cyber Lab. In addition, subsequent Pilots at Development and Production environments will be included where appropriate.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|------------------------|-------|------|------|------|------|------|--|--|
| # AFUDC                | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # CIAC                 | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # External Services    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal - Non-AC    | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Labor      | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Internal, Overheads  | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Materials            | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| # Overheads - External | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |
| <b>Total</b>           | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027          | 2028         | 2029            | 2030            | 2031         |
|------------------------|-----------------|-------------|-----------------|---------------|--------------|-----------------|-----------------|--------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| # External Services    | \$ 8,864        | \$ -        | \$ 4,991        | \$ 820        | \$ 44        | \$ 1,483        | \$ 1,483        | \$ 44        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -            | \$ -            | \$ -         |
| <b>Total</b>           | <b>\$ 8,864</b> | <b>\$ -</b> | <b>\$ 4,991</b> | <b>\$ 820</b> | <b>\$ 44</b> | <b>\$ 1,483</b> | <b>\$ 1,483</b> | <b>\$ 44</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **RG&E Common Security**

## OT Cybersecurity - Architecture RGE

### PROJECT INFORMATION

|                                   |                                       |                                        |                                          |                                    |
|-----------------------------------|---------------------------------------|----------------------------------------|------------------------------------------|------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-006610      | <b>Charge Code:</b><br>Common          | <b>Project Sponsor:</b><br>Hill, Chelsea | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>Security | <b>Rate Case Category</b><br>Security | <b>Project Stage:</b><br>IP1 Originate | <b>Start Date:</b><br>Ongoing            | <b>In-Service Date:</b><br>Ongoing |

#### Project description:

OT Cybersecurity Architecture is a vertical within Corporate Security and Resilience focused on the protection and defense of RGE's operational technology (OT) networks. This Cybersecurity Architecture project encompasses three primary initiatives:

- Risk-Mitigating Foundational Architecture
- Risk-Mitigating Reference Architecture
- Risk-Mitigating Transformational Architecture.

With over 40 security zones spread out through all its operating companies, Avangrid faces the urgent need to transform to an agile, adaptive architecture with network segmentation and new adaptive technologies to meet increasing dynamic threats. Transformation is essential to address technology challenges, enhance security and reduce risks associated with security zones and well-publicized increasing threats specifically targeting critical infrastructure. Objectives include life safety for employees and the public, enhancement of reliability and resiliency at a reasonable cost, and ensuring business continuity in the face of increasing risk as identified by FBI Director Christopher Wray as "The Defining Threat of our Generation" - namely the Adversarial Nation State Threat.

#### Project Scope:

- Implement effective countermeasures to increasing Adversarial Nation State Threat
- Mitigate accelerating threat from disruptive technologies, such as Artificial Intelligence (AI) and Quantum, by inserting risk reduction technologies such as Automated Moving Target Defense (AMTD), Deceptive Technologies (e.g. Honeypots), Post Quantum Cryptography (PQC) algorithms and Quantum Key Distribution (QKD) cryptography
- Improve our overall cybersecurity program maturity through alignment with standards and frameworks such as NIST CSF
- Incorporate risk-mitigating Zero-Trust Architecture (ZTA) principles to include identity-based micro-segmentation, situational awareness, and device and user authentication and authorization
- Acknowledging that critical infrastructure networks are most likely compromised (cf, recent US Worldwide Threat Assessments), we aim to increase resiliency through new technologies that enable continued operations in the face network compromise
- Enhance protection technology for high-risk applications to reduce the risk of a successful network intrusion while maintaining business requirements and continue security zone expansion in ASD (Avangrid Secure Domain) for electrical and gas environment
- Protect sensitive data and systems from unauthorized access and exposure by incorporating advanced technologies such as Distributed Repositories, Data Mesh / Data Fabric with Big Data Analytics, restricting lateral movement of attackers per NERC CIP-015
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- Develop Standards and replicate artifacts of reliable, proven reference architecture to foster understanding and adoption of standards
- Enhance efficiency by providing greater visibility into operational architecture by centralizing disparate dashboards to improve security and reduce risk and operating cost

#### Project Benefits:

- Increase resiliency and reliability to ensure service to rate payers
- Reduced risk and improved cybersecurity in alignment with regulatory, government, industry and corporate policies and standards
- Mitigation of significant increase in risk from Adversarial Nation States magnified by the advent of AI and Quantum that have burrowed into US critical infrastructure with the ability to physically wreak havoc
- Decrease likelihood of attacker compromise by dynamically changing the attack surface such that countermeasures may be applied
- Improved business continuity
- Improved life safety for employees and the public
- Preservation of financial and business reputation
- Ensuring business continuity through protection of assets from increasing risk
- Cost reduction through shared network resources, streamlined network operations and increased speed in development

#### Project Risks and Mitigation Plan:

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- **Performance Risk:** Risk to insertion of new technologies will be mitigated by quantifying performance in the Cyber Lab via formal test planning that measures specific metrics, followed by a Pilot to evaluate performance in Development and Production environments prior to full implementation at operating companies
- **Schedule Risk:** Risks that could impact schedule including procurement, logistics, material availability, resource availability, etc. will be mitigated by proper planning and strict adherence to the process outlined in our ADF



**Risk of No Action:**

- Per 2024 Cost of a Data Breach Report from IBM, the cost of a data breach has reached alarming levels, with the global average spiking to \$4.88 million—a 10% increase over the previous year. This surge, emphasizes the severe financial and reputational damage that organizations face during and after a breach.
- Per FBI, “China’s hacking program is greater than every other nation combined, outnumbering us more than 50 to 1. China has burrowed into US critical infrastructure with ability (and intent) to physically wreak havoc on our critical infrastructure.” Estimated impact is incalculable--many \$10M's.
- Per NERC response to FERC Order No. 887 directing NERC to develop Reliability Standards requirements that are “forward-looking, objective-based,...the CIP networked environment remains vulnerable to attacks that bypass network perimeter-based security controls traditionally used to identify the early phases of an attack.” Estimated impact is incalculable, but significant attack would be on the order of tens of millions of dollars.
- Non-compliance of the forthcoming NERC CIP-015 requirements may result in fines up to \$10M per incident.
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- No action to mitigate AI related attacks will result in Avangrid systems being overwhelmed by automated AI-driven systems.
- No action regarding Large-Scale Situational Awareness will result in difficulty discerning and responding to complex attacks.

**Project Alternatives:**

Few alternatives exist to mitigate the massive threat to critical infrastructure represented by adversarial nation-state use of AI and Quantum. Other technologies we plan to explore include:

- Isolation from the internet
- Development of full manual operations capability

**Basis for Project Estimates**

For expansion of applications and tools currently in use at Avangrid Networks, invoices of actual procurement and historical installation are the basis for our estimates.

For new technologies, vendor quotes will serve as the basis of estimate. Team experience will be leveraged. Project planning will be supported with integration, test and evaluation in the Cyber Lab. In addition, subsequent Pilots at Development and Production environments will be included where appropriate.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| <b>Total</b> | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025        | 2026            | 2027          | 2028         | 2029          | 2030          | 2031         |
|------------------------|-----------------|-------------|-----------------|---------------|--------------|---------------|---------------|--------------|
| # AFUDC                | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| # External Services    | \$ 4,508        | \$ -        | \$ 2,538        | \$ 417        | \$ 22        | \$ 754        | \$ 754        | \$ 22        |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| # Materials            | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -          | \$ -         | \$ -          | \$ -          | \$ -         |
| <b>Total</b>           | <b>\$ 4,508</b> | <b>\$ -</b> | <b>\$ 2,538</b> | <b>\$ 417</b> | <b>\$ 22</b> | <b>\$ 754</b> | <b>\$ 754</b> | <b>\$ 22</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]

## Physical Security Lifecycle Management Program-RGE

### PROJECT INFORMATION

|                                   |                                       |                                                |                                         |                                        |
|-----------------------------------|---------------------------------------|------------------------------------------------|-----------------------------------------|----------------------------------------|
| <b>OpCo:</b><br>RG&E              | <b>Project ID:</b><br>PRJ-005482      | <b>Charge Code:</b><br>Common                  | <b>Project Sponsor:</b><br>Hicks, Roger | <b>Project Type:</b><br>Annual Program |
| <b>Business Area:</b><br>Security | <b>Rate Case Category</b><br>Security | <b>Project Stage:</b><br>IP3 Financial Execute | <b>Start Date:</b><br>Ongoing           | <b>In-Service Date:</b><br>Ongoing     |

#### Project description:

The company has a duty to its employees and the public to ensure their safety by ensuring that Corporate Security has the most up to date systems. The upgrade of the systems impacts everyone by giving a greater ability to protect the company's physical assets and the safety of the public. The main goal of the project is to upgrade existing or installing new security systems at critical facilities. There is a continued need to ensure that the electric grid is protected from physical attack. The current equipment installed is aged and, in most cases, using analog cameras. This prevents the Security Operations Center from properly monitoring the Physical Access Control and Video Management systems efficiently and effectively. To keep the system in compliance with regulators and mitigate to risk of fines being levied it is important to complete this work.

#### Project Scope:

The scope of work includes replacing antiquated systems. Antiquated systems are systems that have equipment that is end of life, no longer supported by the manufacturer, or no longer functioning as required by Corporate Security. The systems being replaced are no longer efficient for monitoring the companies critical assets. Most manufacturers recommend replacing equipment every five to seven years. With new equipment Corporate Security will have the ability to have a clearer overall picture for detection and recognition. This will be a phased approach assessing and upgrading the most critical locations. A project plan will then be created to determine the schedule for rollout / upgrade. Corporate Security will be replacing aged equipment such as Cameras, Card Readers, Electric locks, Door Controllers, Video Management servers, and switches. As part of this install Corporate Security will utilize the built-in analytics that are provided in the newer more advanced cameras. The use of Analytics provides early detection of alarms that the Security Operations Center receives and acts on. Existing systems that have recently been installed will be outside the scope of the project. RG&E currently has 33 sites that have security equipment installed that are part of the lifecycle program. The following sites are projected to be completed in 2025 by priority.

High: Station 37, Station 5 Powerhouse, West Ave Service Center

Medium: Dansville Service Center

#### Project Benefits:

Updating and installing new equipment at out critical locations gives the company an advantage against malicious actors that are trying to breach our physical security perimeter and systems. Upgrading the systems allows for a greater opportunity to detect and determine potential threats before they are given the chance to act. The upgrade or installation of new equipment allows the Security Operations Center to have enhanced tools to better monitor critical facilities that let Avangrid provide safe and reliable services to both commercial and residential customers.

#### Project Risks and Mitigation Plan:

Delay or non-execution of critical asset protection could result in fines, penalties, and reputational damage. Risks to the project would long-lead time items, staffing, end user support budget. Each of these risks have a potential to impact project timeline, budget, and quality. These risks are mitigated by creating a project plan including scope of work, project stakeholders, project plan including specific milestones. Determining long lead-time items at the onset of the project to ensure that they can be ordered right away to keep the project on schedule. A contingency to this would be having an alternative device that has a similar function. Another mitigation is keeping the systems in place up to date on all patches and firmware updates as per the manufactures standards.

#### Risk of No Action:

Failure to maintain current devices and headend for Physical Security systems will result in a lack of support from manufacturers, cyber vulnerabilities through lack of patching and lack of support; and the loss of devices and systems through attrition or lifecycle failure resulting in overall open vulnerability to both physical and cyber intrusion or attacks against the resource such as undetected entry and larger grid overall. Aside from the actual threats to continuity of operations and stable operating environment, these conditions would result in non-compliant (near-miss and/or self-report requirements) NERC CIP status as there are many Physical Security Perimeters within RGE footprint. Non-compliant status may result in fines up to \$1,000,000 per day per violation.

#### Project Alternatives:

Project alternative keep the system the way it is and work with the existing infrastructure that creates a bottleneck. The current network puts restrictions on the amount of bandwidth that is available to Corporate Security. Another alternative is to keep installing leased fiber that has a monthly recurring OPEX cost. This would cost the company approximately \$1 million a year.

#### Basis for Project Estimates

Existing quotes as possible; Analogous costing from prior year, similar scale and scope projects. Projects are competitively sourced with two rounds of marketplace testing through Framework Agreement process (competitive awards) and competitively awarding site work between Framework Agreement vendors.

## FINANCIAL INFORMATION

**Actual Capital Spent, all amounts shown below in thousands (\$000's)**

[illegible]

**Actual O&M, all amounts shown below in thousands (\$000's)**

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total            | 2025            | 2026            | 2027            | 2028            | 2029            | 2030            | 2031            |
|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| # AFUDC                | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # CIAC                 | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # External Services    | \$ 16,211        | \$ 2,154        | \$ 2,206        | \$ 2,259        | \$ 2,313        | \$ 2,369        | \$ 2,426        | \$ 2,484        |
| # Internal - Non-AC    | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Labor      | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Internal, Overheads  | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Materials            | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| # Overheads - External | \$ -             | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            | \$ -            |
| <b>Total</b>           | <b>\$ 16,211</b> | <b>\$ 2,154</b> | <b>\$ 2,206</b> | <b>\$ 2,259</b> | <b>\$ 2,313</b> | <b>\$ 2,369</b> | <b>\$ 2,426</b> | <b>\$ 2,484</b> |

**Forecasted O&M, all amounts shown below in thousands (\$000's)**

[illegible]



# **NYSEG Common Training**

## GS - Training Facilities (HR) NYSEG Johnson City Reynolds Trng Yard

### PROJECT INFORMATION

|                                           |                                       |                                     |                                |                                    |
|-------------------------------------------|---------------------------------------|-------------------------------------|--------------------------------|------------------------------------|
| <b>OpCo:</b><br>NYSEG                     | <b>Project ID:</b><br>PRJ-003111      | <b>Charge Code:</b><br>Common       | <b>Project Sponsor:</b>        | <b>Project Type:</b><br>Project    |
| <b>Business Area:</b><br>General Services | <b>Rate Case Category</b><br>Training | <b>Project Stage:</b><br>IP4 Change | <b>Start Date:</b><br>Sep-2021 | <b>In-Service Date:</b><br>H2 2025 |

#### Project description:

The NYSEG Johnson City Reynolds Training Yard project consists of the construction of a new two-story state of the art training facility to house Electric, Gas, and Field Customer Service Training programs in Johnson City, NY. This project will enhance reliability and mitigate risks to provide safer working conditions, avoid disruption to Electric and Electric Operations, while creating an overall safer more efficient building to support operational needs, responses times and storm support.

#### Project Scope:

Specific projects at the Johnson City Reynolds Training Yard consist of the procurement and installation of required materials needed in order to construct a new two-story state of the art training facility (structure 1) to house Electric, Gas, and Field Customer Service Training programs in Johnson City, NY. Additional project scope includes ancillary needs for an enclosed structure (structure 2) to store 12 poles at 30 foot height with a total clearance of 40 foot height and a max capacity of 75 people to conduct pole top training.

The project objectives will be achieved by utilizing the following systematic approach as a basis:

- (1) Planning and Assessment: conduct a thorough assessment of the current infrastructure to identify specific needs and areas for improvement.
- (2) Quality Control and Monitoring: Implement regular inspections and quality control measures throughout the project to ensure compliance with standards and timely completion.

#### Project Benefits:

Benefits of this project include:

- 1) Training facility with adequate capacity to fully qualify incoming workforce
- 2) Enhanced operator response and efficiency during emergency and day to day operations
- 3) Safety of customers and employees in the field and at the yard
- 4) Shorter time to mastery & ease of knowledge transfer between subject matter experts and students
- 5) Mixed reality solutions offering safer work environment and repetition of rare/dangerous scenarios
- 6) Training able to be conducted during harsh weather when outdoor training is not an option

#### Project Risks and Mitigation Plan:

Project risks include lengthy lead time for permitting and the procurement and installation of necessary equipment, as equipment availability is dependent on the availability at the time of procurement. Mitigation Plans include developing Avangrid Standards and preemptively creating Frame Agreements with vendors to speed up the purchasing process.

#### Risk of No Action:

Risk of no action includes lack of building reliability, increased operational costs, and inadequate work conditions and space for employees to perform tasks safely and efficiently in order to respond to the critical needs of customers and operations timely and accurately. Lack of space to perform training exercises leads to a lack of quality trained employees to perform the work, causing delays in outage response and new service.

#### Project Alternatives:

Alternatives are limited to increased operational Costs (Opex) in order to rent or lease additional space and storage facilities needed to accomodate employees.

#### Basis for Project Estimates

Bid Process

## FINANCIAL INFORMATION

Actual Capital Spent, all amounts shown below in thousands (\$000's)

| Capital Details:       | Total           | 2020        | 2021            | 2022            | 2023            | 2024          |  |  |
|------------------------|-----------------|-------------|-----------------|-----------------|-----------------|---------------|--|--|
| # AFUDC                | \$ 436          | \$ -        | \$ 3            | \$ 70           | \$ 147          | \$ 216        |  |  |
| # CIAC                 | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # External Services    | \$ 3,858        | \$ -        | \$ 1,037        | \$ 1,178        | \$ 1,144        | \$ 498        |  |  |
| # Internal - Non-AC    | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # Internal, Labor      | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # Internal, Overheads  | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| # Materials            | \$ 151          | \$ -        | \$ 111          | \$ 12           | \$ 20           | \$ 8          |  |  |
| # Overheads - External | \$ -            | \$ -        | \$ -            | \$ -            | \$ -            | \$ -          |  |  |
| <b>Total</b>           | <b>\$ 4,445</b> | <b>\$ -</b> | <b>\$ 1,151</b> | <b>\$ 1,260</b> | <b>\$ 1,312</b> | <b>\$ 721</b> |  |  |

Actual O&M, all amounts shown below in thousands (\$000's)

| O&M Details: | Total | 2020 | 2021 | 2022 | 2023 | 2024 |  |  |
|--------------|-------|------|------|------|------|------|--|--|
| Total        | \$ -  | \$ - | \$ - | \$ - | \$ - | \$ - |  |  |

**Forecasted Capital, all amounts shown below in thousands (\$000's)**

| Capital Details:       | Total           | 2025            | 2026          | 2027        | 2028        | 2029        | 2030        | 2031        |
|------------------------|-----------------|-----------------|---------------|-------------|-------------|-------------|-------------|-------------|
| # AFUDC                | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # CIAC                 | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # External Services    | \$ 7,775        | \$ 7,400        | \$ 375        | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal - Non-AC    | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Labor      | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Internal, Overheads  | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Materials            | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| # Overheads - External | \$ -            | \$ -            | \$ -          | \$ -        | \$ -        | \$ -        | \$ -        | \$ -        |
| <b>Total</b>           | <b>\$ 7,775</b> | <b>\$ 7,400</b> | <b>\$ 375</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

Forecasted O&M, all amounts shown below in thousands (\$000's)

[illegible]



April 1, 2026

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## NYSEG and RG&E 5-Year Capital Investment Plan

### Appendix C - Disadvantaged Communities



Take care of the environment.  
Print in black and white and only if necessary.





## NYSEG and RG&E 5-Year Capital Investment Plan

### NYSEG Electric Projects

| New York State Electric & Gas Corporation Electric Projects by Disadvantaged Communities |                                                                                      |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>City of Binghamton</b>                                                                |                                                                                      |
|                                                                                          | EMS/ADMS Deployment                                                                  |
|                                                                                          | NYSEG Substation Modernization - Noyes Island D                                      |
| <b>City of Ithaca</b>                                                                    |                                                                                      |
|                                                                                          | Ithaca Electrification Project Phase 1                                               |
| <b>Town of Ausable</b>                                                                   |                                                                                      |
|                                                                                          | Line 880 Rebuild                                                                     |
|                                                                                          | NYSEG Minor Capital Program                                                          |
|                                                                                          | Rainbow Falls Low Level Floodgate Upgrades & Downstream Abutment Resurfacing Project |
|                                                                                          | Rainbow Falls Penstock Replacement                                                   |
|                                                                                          | Rainbow Falls Powerhouse Entrance Hill Stabilization                                 |
| <b>Town of Bradford</b>                                                                  |                                                                                      |
|                                                                                          | Bradford Concrete Spillway And Toe Resurfacing Improvement Project                   |
|                                                                                          | Bradford Dam Automation Project                                                      |
| <b>Town of Indian Lake</b>                                                               |                                                                                      |
|                                                                                          | Line 890 Rebuild                                                                     |
| <b>Town of Java</b>                                                                      |                                                                                      |
|                                                                                          | Java SS Microgrid BESS                                                               |
| <b>Town of North Dansville</b>                                                           |                                                                                      |
|                                                                                          | Meyer Substation Rebuild                                                             |
| <b>Town of Perry</b>                                                                     |                                                                                      |
|                                                                                          | South Perry New Sub & Trans Line Upgrade                                             |
| <b>Town of Plattsburgh</b>                                                               |                                                                                      |
|                                                                                          | Mill C Spillway Concrete Improvements Project                                        |
|                                                                                          | Saranac Plant Control Systems Upgrade Project                                        |
| <b>Town of Saranac</b>                                                                   |                                                                                      |
|                                                                                          | High Falls Intake Upgrade Project                                                    |
|                                                                                          | High Falls U1 T-G Major Rebuild                                                      |
|                                                                                          | High Falls Unit 2 Generator Rewind                                                   |
|                                                                                          | High Falls Unit 3 Turbine Rebuild & Draft Tube Upgrade Project                       |
| <b>Town of Schuyler Falls</b>                                                            |                                                                                      |
|                                                                                          | Cadyville Right Abutment Spillway Improvements Project                               |
|                                                                                          | Cadyville Switchgear And Generator Protection Upgrade Project                        |





## NYSEG and RG&E 5-Year Capital Investment Plan

|                                                                                          |
|------------------------------------------------------------------------------------------|
| Cadyville Unit 1 Turbine Major Overhaul                                                  |
| Cadyville Upgrade Unit 1 & Unit 2 Turbine-Generator Cooling Water System Upgrade Project |
| Kents Falls - Capital Project                                                            |
| Kents Falls Dam Low Level Floodgate Project                                              |
| Kents Falls Internal Riser Shaft and Tank Project                                        |
| Kents Falls Unit 1 Generator Rewind Project                                              |
| Kents Falls Unit 2 Turbine-Generator Major Rebuild                                       |
| Kents Falls Upstream Training Wall Extension Project                                     |
| <b>Town of Stephentown</b>                                                               |
| Stephentown BESS NYSEG                                                                   |
| <b>Town of Stillwater</b>                                                                |
| Mechanicville Upstream Eel Ladder Project                                                |
| Upper Mechanicville Generator Protection and Controls Upgrade Project                    |
| Upper Mechanicville Intake Upgrades And Downstream Passage Project                       |
| <b>Town of West Seneca</b>                                                               |
| New Gardenville Substation Rebuild                                                       |
| <b>Village of Brewster</b>                                                               |
| Crafts 13.2kV Load Transfer to Croton Falls                                              |
| Dingle Ridge - 2nd Bank and 13.2kV Conv                                                  |
| <b>Village of Penn Yan</b>                                                               |
| Milo Substation Rebuild                                                                  |
| <b>Implementations/enhancements are system wide and not community specific.</b>          |
| Application Interface Upgrades NYSEG                                                     |
| Circuit Sensor Implementation - NYSEG                                                    |
| Cost Sharing 2.0                                                                         |
| CYME Server - Hardware & Software NYSEG                                                  |
| General Equipment - OPS-SO                                                               |
| General Equipment - OPS-T&D                                                              |
| Make Ready                                                                               |
| MV90/IEEE Service Mode                                                                   |
| NYSEG - AMI Project                                                                      |
| NYSEG - Battery Program                                                                  |
| NYSEG - Breaker Replacement Program                                                      |
| NYSEG - Dist Line                                                                        |
| NYSEG - Elec Better                                                                      |





## NYSEG and RG&E 5-Year Capital Investment Plan

|                                                       |
|-------------------------------------------------------|
| NYSEG - Electric Ops (Line Insp CAP)                  |
| NYSEG - Gov't Highway                                 |
| NYSEG - Ind/Comm                                      |
| NYSEG - Pole Replace (WPIT) Program CAP               |
| NYSEG - Res Line                                      |
| NYSEG - SCADA/Automation                              |
| NYSEG - Serv Conn                                     |
| NYSEG - Street Light                                  |
| NYSEG - Subst Major Capital                           |
| NYSEG - Subst Minor Capital                           |
| NYSEG - Trans line                                    |
| NYSEG Animal Guard Program                            |
| NYSEG CAPEX EL Meters                                 |
| NYSEG CAS Plattsburgh Ashley                          |
| NYSEG Distribution Load Relief Program                |
| NYSEG DSIP - Advanced Planning Tools                  |
| NYSEG DSIP - GIS Enhancements GMEP                    |
| NYSEG FERC 2222                                       |
| NYSEG IEDR Phase II                                   |
| NYSEG LED Streetlighting                              |
| NYSEG Mobile #2 Replacement                           |
| NYSEG Mobile #4 Replacement                           |
| NYSEG PCB Transformer Replacements                    |
| NYSEG T&S Asset Condition Replacement Program         |
| NYSEG Transmission GIS and GIS Interface optimization |
| NYSEG Transmission Reinforcement Program              |
| NYSEG URD Replacement Program                         |
| Resiliency                                            |
| REV - Electric Vehicles                               |
| TLD Replacements NYSEG                                |
| <b>Not going to Disadvantaged communities</b>         |
| SMSI Field Deployment - NYSEG                         |
| Wood Street New 3rd 345/115kV Trans                   |
| <b>Town of Afton</b>                                  |
| Afton Sub - Add new 34.5kV Circuit                    |





April 1, 2026

## NYSEG and RG&E 5-Year Capital Investment Plan

|                                              |
|----------------------------------------------|
| <b>Town of Barton</b>                        |
| PNY Phase-1 Line 962 Rebuild                 |
| <b>Town of Dryden</b>                        |
| Etna 115/34.5/4.8 kV Substation Full Rebuild |
| <b>Town of Wales</b>                         |
| Wales Center Energy Storage                  |
| <b>Town of Amenia</b>                        |
| North Brewster Reinforcement                 |



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Print in black and white and only if necessary.

**NYSEG and RG&E 5-Year Capital Investment Plan****RG&E Electric Projects**

| <b>Rochester Gas &amp; Electric Electric Projects by Disadvantaged Communities</b> |                                                                                            |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>City of Rochester</b>                                                           |                                                                                            |
|                                                                                    | Aqueduct Re-Imagined                                                                       |
|                                                                                    | EMS/ADMS Deployment                                                                        |
|                                                                                    | Hydro Generation Station 2 Modernization Project                                           |
|                                                                                    | RG&E Minor Capital Program                                                                 |
|                                                                                    | S5 Unit 3 Turbine-Generator New Runner                                                     |
|                                                                                    | Station 2 Central Ave Dam Superstructure Modernization                                     |
|                                                                                    | Station 2 Generator Protection and Controls Upgrade Project                                |
|                                                                                    | Station 26 Generator Protection and Controls Upgrade Project                               |
|                                                                                    | Station 26 Intake Deck/Gate Hoist Upgrades and Resurfacing                                 |
|                                                                                    | Station 29 Modernization Project                                                           |
|                                                                                    | Station 34 Modernization Project                                                           |
|                                                                                    | Station 37 Modernization Project                                                           |
|                                                                                    | Station 43 Modernization Project                                                           |
|                                                                                    | Station 5 Gate 2 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project       |
|                                                                                    | Station 5 Gate 3 Rubplate, Rubplate and Breastwall Seal Upgrade Project                    |
|                                                                                    | Station 5 Gate 5 Rubplate, Bottom Seal, Hinge Upgrade and Rock Stabilization Project       |
|                                                                                    | Station 5 Intake Stop Log Gantry Upgrade Project                                           |
|                                                                                    | Station 5 Substation Mod D                                                                 |
|                                                                                    | Station 5 Surge Tank Expansion Project                                                     |
|                                                                                    | Station 5 Unit 1, Unit 2 & Unit 3 Turbine-Generator Guide Bearing Water Filtration Upgrade |
|                                                                                    | Station 5 Unit 3 Turbine-Generator New Turbine Isolation Valve                             |
|                                                                                    | Station 5 Water Conveyance (Tunnel) System Project                                         |
| <b>Town of Brighton</b>                                                            |                                                                                            |
|                                                                                    | Station 82 Upgrades                                                                        |
|                                                                                    | Town of Brighton Arc-Lighting Circuit                                                      |
| <b>Town of Hume</b>                                                                |                                                                                            |
|                                                                                    | Station 170 Dam Resurfacing and Power Upgrades Projects                                    |
| <b>Town of Irondequoit</b>                                                         |                                                                                            |
|                                                                                    | Station 51                                                                                 |
| <b>Town of Perinton</b>                                                            |                                                                                            |
|                                                                                    | Station 117                                                                                |
| <b>Village of Wolcott</b>                                                          |                                                                                            |





## NYSEG and RG&E 5-Year Capital Investment Plan

|                                                                                 |
|---------------------------------------------------------------------------------|
| Station 192 Trans Facilities Upgrade                                            |
| <b>Implementations/enhancements are system wide and not community specific.</b> |
| Application Interface Upgrades RGE                                              |
| Battery Prog RGE                                                                |
| Circuit Sensor Implementation - RGE                                             |
| Cost Sharing 2.0                                                                |
| CYME Server - Hardware & Software RG&E                                          |
| Distribution Automation - RGE                                                   |
| General Equipment - OPS-SO                                                      |
| General Equipment - OPS-T&D                                                     |
| Make Ready                                                                      |
| MV90/IEE Service Mode                                                           |
| New TL 812 & DL 418                                                             |
| Replace DC Pilot Wire System                                                    |
| Resiliency                                                                      |
| REV - Electric Vehicles                                                         |
| RG&E Distribution Load Relief Program                                           |
| RG&E FERC 2222                                                                  |
| RG&E IEDR Phase II                                                              |
| RGE - AMI Project                                                               |
| RGE - Breaker Replacement Program                                               |
| RGE - Elec Better                                                               |
| RGE - Electric Ops (Line Insp CAP)                                              |
| RGE - Gov't Highway Majors CAP                                                  |
| RGE - Gov't HW                                                                  |
| RGE - Ind/Comm                                                                  |
| RGE - Pole Replace (WPIT) Program                                               |
| RGE - Res Line                                                                  |
| RGE - Serv Conn                                                                 |
| RGE - Street Light                                                              |
| RGE - Subst Major Capital                                                       |
| RGE - Subst Minor Capital                                                       |
| RGE - Trans line                                                                |
| RGE - UG Cable Replacements                                                     |
| RGE Animal Guards                                                               |





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**NYSEG and RG&E 5-Year Capital Investment Plan**

|                                               |
|-----------------------------------------------|
| RGE CAPEX EL Meters                           |
| RGE CAS Greece                                |
| RGE DER-ICCP connection to NYISO              |
| RGE Dist Line                                 |
| RGE DSIP - Advanced Planning Tools            |
| RGE DSIP - GIS Enhancements GMEP              |
| RGE LED Streetlighting                        |
| RGE PCB Transformer Replacements              |
| RGE T&S Asset Condition Replacement Program   |
| RGE Transmission Reinforcement Program        |
| RGE URD Replacement Program                   |
| SCADA/Automation RGE                          |
| TLD Replacements RGE                          |
| Trip Saver                                    |
| <b>Not going to Disadvantaged communities</b> |
| FICS Scalability Plan RG&E                    |
| SMSI Field Deployment - RG&E                  |
| <b>Town of Canandaigua</b>                    |
| GMI-Station 168 Svc Area Reinforcements D     |
| <b>Town of Greece</b>                         |
| Station 46 - Replace #1 #3 Transf. Banks D    |
| <b>Village of Sodus</b>                       |
| 0                                             |
| <b>Town of Farmington</b>                     |
| 0                                             |





## NYSEG and RG&E 5-Year Capital Investment Plan

### NYSEG Gas Projects

| New York State Electric & Gas Corporation Gas Projects by Disadvantaged Communities |                                          |
|-------------------------------------------------------------------------------------|------------------------------------------|
| <b>City of Binghamton</b>                                                           |                                          |
|                                                                                     | Critical Valve Installations, Binghamton |
| <b>Town of Maine</b>                                                                |                                          |
|                                                                                     | Boswell Hill 124 Psig Bare Steel LPP     |
| <b>Implementations/enhancements are system wide and not community specific.</b>     |                                          |
|                                                                                     | Low Pressure Relief Valve Program        |
|                                                                                     | NYSEG CAPEX Gas Meters                   |
|                                                                                     | NYSEG CAPEX Regulators                   |
|                                                                                     | NYSEG Dist Main Replacement              |
|                                                                                     | NYSEG Dist Mains New Business            |
|                                                                                     | NYSEG Government Jobs                    |
|                                                                                     | Large Government Jobs - NYSEG            |
|                                                                                     | NYSEG Leak Prone Pipe Replace Prog - LPP |
|                                                                                     | NYSEG Leak Prone Srv Repl Program        |
|                                                                                     | NYSEG New Services                       |
|                                                                                     | NYSEG Non LP Srv Repl Program            |
|                                                                                     | NYSEG Reg Mod & Auto Pgm GRMP            |
|                                                                                     | NYSEG Gas Operations Departmental        |
|                                                                                     | NYSEG - AMI Project                      |
| <b>Not going to Disadvantaged communities</b>                                       |                                          |
|                                                                                     | Vienna Road Regulator Station GRMP       |
|                                                                                     | Town of Pendleton System Improvement     |
|                                                                                     | Hebron Station/Line J Retirement         |







## NYSEG and RG&E 5-Year Capital Investment Plan

### RG&E Gas Projects

| Rochester Gas & Electric Gas Projects by Disadvantaged Communities              |  |
|---------------------------------------------------------------------------------|--|
| <b>City of Rochester</b>                                                        |  |
| Mt Read (SF115 psig) Main Replacement                                           |  |
| <b>Implementations/enhancements are system wide and not community specific.</b> |  |
| RGE CAPEX Gas Meters                                                            |  |
| RGE CAPEX Regulators                                                            |  |
| RGE Dist Main Replacement                                                       |  |
| RGE Dist Mains New Business                                                     |  |
| RGE Government Jobs                                                             |  |
| Large Government Jobs - RG&E                                                    |  |
| RG&E Leak Prone Pipe Replace Prog - LPP                                         |  |
| RG&E Leak Prone Srv Repl Program                                                |  |
| RGE New Services                                                                |  |
| RGE Non LP Srv Repl Program                                                     |  |
| RGE Reg Mod & Auto Pgm GRMP                                                     |  |
| RGE Gas Operations Departmental                                                 |  |
| RGE - AMI Project                                                               |  |
| <b>Not going to Disadvantaged communities</b>                                   |  |
| Caledonia Station Rebuild                                                       |  |
| CM-1 Pipeline: Section 4 Chili GS to Bal                                        |  |
| MF60 SE Phase IV (Crowley Rd)                                                   |  |
| MF60 SE Phase III (Malone Rd)                                                   |  |
| MF60 SE Phase I (Mendon Gate - Rte 64)                                          |  |
| Mendon Gate Station                                                             |  |





## NYSEG and RG&E 5-Year Capital Investment Plan

### NYSEG Common Projects

| New York State Electric & Gas Corporation Common Projects by Disadvantaged Communities |                                                               |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------|
| <b>City of Auburn</b>                                                                  |                                                               |
|                                                                                        | Avangrid Security Domain (ASD) OSG Telecommunications (NYSEG) |
|                                                                                        | NYSEG Auburn Service Center Projects                          |
| <b>City of Binghamton</b>                                                              |                                                               |
|                                                                                        | NYSEG ECC Projects                                            |
|                                                                                        | NYSEG KGO Cooling Tower Replacement                           |
|                                                                                        | NYSEG KGO Projects                                            |
| <b>City of Elmira</b>                                                                  |                                                               |
|                                                                                        | NYSEG Elmira Service Center Projects                          |
|                                                                                        | NYSEG Geneva Service Center Projects                          |
|                                                                                        | NYSEG OSG Communications Tower Shelter Facility Improvements  |
|                                                                                        | Telecomm Vertical Builds                                      |
| <b>City of Hornell</b>                                                                 |                                                               |
|                                                                                        | NYSEG Hornell Service Center Projects                         |
| <b>City of Ithaca</b>                                                                  |                                                               |
|                                                                                        | NYSEG Consolidation Ithaca                                    |
| <b>City of Lockport</b>                                                                |                                                               |
|                                                                                        | NYSEG Lockport Service Center Projects                        |
| <b>City of Mechanicville</b>                                                           |                                                               |
|                                                                                        | NYSEG Mechanicville Service Center Projects                   |
| <b>City of Norwich</b>                                                                 |                                                               |
|                                                                                        | NYSEG Norwich Operations Center Projects                      |
| <b>City of Oneonta</b>                                                                 |                                                               |
|                                                                                        | NYSEG Oneonta Service Center Projects                         |
| <b>Town of Lancaster</b>                                                               |                                                               |
|                                                                                        | NYSEG Hamburg Operations Center Projects                      |
|                                                                                        | NYSEG Lancaster Service Center Garage Projects                |
|                                                                                        | NYSEG Lancaster Service Center Projects                       |
| <b>Town of Liberty</b>                                                                 |                                                               |
|                                                                                        | NYSEG Liberty Service Center Projects                         |
| <b>Town of Long Lake</b>                                                               |                                                               |
|                                                                                        | NYSEG Long Lake Building Expansion                            |
| <b>Town of Vestal</b>                                                                  |                                                               |





## NYSEG and RG&E 5-Year Capital Investment Plan

|                                                                                 |
|---------------------------------------------------------------------------------|
| NYSEG ECC Life cycle                                                            |
| <b>Village of Brewster</b>                                                      |
| NYSEG Brewster Service Center Projects                                          |
| NYSEG Solar Panels                                                              |
| <b>Village of Johnson City</b>                                                  |
| GS - Training Facilities (HR) NYSEG Johnson City Reynolds Trng Yard             |
| NYSEG HR Training Equipment & Tools                                             |
| NYSEG HR Training Technology Projects                                           |
| <b>Implementations/enhancements are system wide and not community specific.</b> |
| AGR - IOC-Microsoft Deployment LC - NYSEG                                       |
| AGR - IOC-NET-END USER LC-NYSEG                                                 |
| AGR - IOC-NETENG LC-NYSEG                                                       |
| AGR - IOC-NETSEC LC-NYSEG                                                       |
| AGR - IOC-STORAGE LC-NYSEG                                                      |
| AGR - IOC-UNIX LC-NYSEG                                                         |
| AGR - IOC-WINTEL LC-NYSEG                                                       |
| ASD Infrastructure Firewalls NYSEG                                              |
| Client Project Requests and Integration Projects - NYSEG                        |
| DRAGOS NYSEG                                                                    |
| ECS Infrastructure Firewalls NYSEG                                              |
| Energy Manager Enhancements                                                     |
| Global Cybersecurity Directors Plan NYSEG                                       |
| Historian and Analytic Upgrades Program (NYSEG CP Portion)                      |
| NMC Solar Winds NYSEG                                                           |
| NY Smart Metering Lifecycle                                                     |
| NYSEG - Regulatory Driven Efforts / Rate Case                                   |
| NYSEG BMS System                                                                |
| NYSEG CAPEX Lab Equipment                                                       |
| NYSEG Data Center Consolidation                                                 |
| NYSEG EV Chargers                                                               |
| NYSEG FAN +Mobile technology refresh and expansion                              |
| NYSEG FCC License Radio Spectrum purchase                                       |
| NYSEG Fleet Replacement Program                                                 |
| NYSEG Global Telematics Solution                                                |
| NYSEG Minor Projects                                                            |





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## NYSEG and RG&E 5-Year Capital Investment Plan

|                                           |
|-------------------------------------------|
| NYSEG OMS Alignment Spectrum              |
| NYSEG OMS Enhancements                    |
| Orchestration Platform - Customer Journey |
| Telecomm Fiber                            |
| Telecomm Infrastructure                   |
| <b>City of Plattsburgh</b>                |
| NYSEG Plattsburgh Service Center          |
| <b>Town of Lyons</b>                      |
| NY WAN Expansion                          |
| <b>Town of Walton</b>                     |
| NYSEG Walton Service Center Projects      |
| <b>Town of Stamford</b>                   |
| NYSEG Stamford Operations Center Projects |



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**NYSEG and RG&E 5-Year Capital Investment Plan****RG&E Common Projects**

| <b>Rochester Gas &amp; Electric Common Projects by Disadvantaged Communities</b> |                                                             |
|----------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>City of Rochester</b>                                                         |                                                             |
|                                                                                  | Avangrid Security Domain (ASD) OSG Telecommunications (RGE) |
|                                                                                  | RGE 3 City Center                                           |
|                                                                                  | RGE Scottsville Rd Service Center Projects                  |
|                                                                                  | RGE Solar Panels                                            |
|                                                                                  | Telecomm Fiber                                              |
| <b>Town of Vestal</b>                                                            |                                                             |
|                                                                                  | RGE ECC Life cycle                                          |
| <b>Village of Fillmore</b>                                                       |                                                             |
|                                                                                  | RGE Fillmore Operations Center Projects                     |
| <b>Village of Johnson City</b>                                                   |                                                             |
|                                                                                  | RGE HR Training Equipment & Tools                           |
|                                                                                  | RGE HR Training Technology Projects                         |
| <b>Implementations/enhancements are system wide and not community specific.</b>  |                                                             |
|                                                                                  | AGR - IOC-Microsoft Deployment LC - RGE                     |
|                                                                                  | AGR - IOC-NET-END USER LC-RGE                               |
|                                                                                  | AGR - IOC-NETENG LC-RGE                                     |
|                                                                                  | AGR - IOC-NETSEC LC-RGE                                     |
|                                                                                  | AGR - IOC-STORAGE LC-RGE                                    |
|                                                                                  | AGR - IOC-UNIX LC-RGE                                       |
|                                                                                  | AGR - IOC-WINTEL LC-RGE                                     |
|                                                                                  | ASD Infrastructure Firewalls RGE                            |
|                                                                                  | Client Project Requests and Integration Projects - RGE      |
|                                                                                  | DRAGOS RGE                                                  |
|                                                                                  | ECS Infrastructure Firewalls RGE                            |
|                                                                                  | Energy Manager Enhancements                                 |
|                                                                                  | Global Cybersecurity Directors Plan RGE                     |
|                                                                                  | Historian and Analytic Upgrades Program (RG&E CP Portion)   |
|                                                                                  | NMC Solar Winds RGE                                         |
|                                                                                  | NY Smart Metering Lifecycle                                 |
|                                                                                  | Orchestration Platform - Customer Journey                   |
|                                                                                  | RGE - Regulatory Driven Efforts / Rate Case                 |
|                                                                                  | RGE BMS System                                              |





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## NYSEG and RG&E 5-Year Capital Investment Plan

|                                                            |
|------------------------------------------------------------|
| RGE CAPEX Lab Equipment                                    |
| RGE Data Center Consolidation                              |
| RGE EV Chargers                                            |
| RGE FAN + mobile technology refresh and expansion          |
| RGE Fleet Replacement Program                              |
| RGE Global Telematics Solution                             |
| RGE Minor Projects                                         |
| RGE OMS Alignment Spectrum                                 |
| RGE OMS Enhancements                                       |
| Telecomm Infrastructure                                    |
| <b>Town of Bergen</b>                                      |
| RGE OSG Communications Tower Shelter Facility Improvements |
| Telecomm Vertical Builds                                   |
| <b>Town of Wolcott</b>                                     |
| Telecomm NY WAN Buildout                                   |
| <b>Village of Henrietta</b>                                |
| RGE Mushroom Blvd Projects                                 |
| <b>Town of Sodus</b>                                       |
| RGE Sodus Service Center Projects                          |
| <b>City of Canandaigua</b>                                 |
| RGE Canandaigua Truck Garage Projects                      |
| <b>Town of Webster</b>                                     |
| RGE Eastern Monroe Operations Center Projects              |



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