



PJM Recertification Application for PSE&G

August 19, 2019

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1. Name, Address, and Point of Contacts

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2. Technical and Engineering Qualifications

PSE&G is a direct subsidiary of its holding company parent Public Service Enterprise Group Incorporated (PSEG). PSE&G provides electric and gas service to customers in New Jersey in an area consisting of 2,600-square-miles. PSE&G serves 2.2 million electric customers and 1.8 million gas customers in more than 300 urban, suburban, and rural communities, including New Jersey's six largest cities. In addition, PSE&G owns and maintains 834 miles of transmission right-of-way with 1,579 miles of transmission lines over 100kV and 484 miles of 500kV transmission lines. As an infrastructure company, PSE&G has an outstanding record of consistently delivering challenging projects within schedule and on budget.

PSE&G has developed a team of experienced professionals to support the entire project life cycle of a transmission project. This team includes individuals focused on environmental assessment and permitting, project engineering, project management, project controls, procurement, construction, public affairs and community outreach, commissioning, operations and maintenance, and regulatory compliance.

PSE&G's transmission engineering team has experience designing transmission line projects in voltages ranging from 69kV to 765kV. The team always seeks to design projects in a way that anticipates and mitigates potential risks. PSE&G's team typically utilizes software tools like PLS-CADD, PLS-Pole, PLS-Tower, EPRI TL Workstation, STAAD, LPILE, FAD Tools, and others to complete their work. The engineering staff also attends external and internal training sessions to stay current on industry standards and to expand their technical skill sets.

3. Demonstrated Experience

As an infrastructure company located in one of the most congested areas of the United States, PSE&G has a record of consistently delivering challenging transmission projects within schedule and on budget. Our experience with overhead, underground, and station work in New Jersey makes us well-suited to construct transmission solutions in other environmentally challenging and densely populated portions of the PJM footprint. Some examples of the non-traditional construction methods we have recently deployed include:

- The utilization of alternative construction techniques (helicopter, wetland matting, etc.) to minimize the environmental impact of our projects and to optimize construction sequencing
- The siting, permitting, and construction of numerous projects - including GIS stations, in concentrated, urban areas across northern and central New Jersey
- The utilization of horizontal directional drilling under the Newark Bay to accommodate two underground circuits in the Bergen Linden Corridor Upgrade Project
- The successful creation of a temporary routing of the Appalachian Trail to minimize the length of the trail through the right-of-way of the Susquehanna Roseland project; the initiative minimized the negative visual impacts of the project and ensured that hikers were separate from the habitats of key endangered species in the area

Below is a list of representative projects that PSE&G owns, is constructing, or operates.

Project	Circuit Miles	Voltage (kV)	Cost	Scope	In-Service Dates
Metuchen-Trenton-Burlington 230kV Conversion Project	54	230	Up to \$739M	Upgrade overhead transmission lines to 230kV; 12 station upgrades	2022 Target Completion
Bergen-Linden Corridor Upgrade Project	30	345	\$1.2B	1 new station; 9 station upgrades, new overhead and underground lines	2019
Sewaren-Metuchen 230kV Conversion Project	14	230	\$125M	Convert existing lines to 230kV; 4 station upgrades	August 2016
Northeast Grid Reliability Project	69	138/230	\$975M	11 stations, upgrade overhead transmission line (50 miles) and underground transmission lines (19 miles)	July 2016
Mickleton-Gloucester-Camden	16	230	\$435M	Two new 230kV overhead lines; three new 230kV underground lines, upgrade 5 stations	2015
Susquehanna-Roseland	45	500	\$790M (PSE&G portion)	New 500kV overhead lines, construct new 500kV GIS station and expand an existing station	2014 (PSE&G portion); Energized 2015
Burlington-Camden Network Reinforcement Project	37	230	\$399M	Reconfigure overhead transmission lines and upgrade	2014
Bayonne 3 rd Source	5.5	230	\$123M	New underground transmission line from Bayonne to Marion stations	2013

4. Previous Record-Standardized Construction, Maintenance, and Operating Practices

PSE&G's ability to manage projects effectively and deliver consistent, high quality services lies in its standardized practices and procedures. PSE&G's extensive experience building transmission projects has led to a set of standardized practices and procedures to guide the execution of our work. Our standards can stand alone or be integrated with other Transmission Owner Interconnection Requirements as needed.

Project Management Procedures

PSE&G has various project management procedures addressing topics ranging from scope management to contractor safety. All of our procedures closely model the Project Management Body of Knowledge, published by the Project Management Institute. Additionally, PSE&G has 22 reference manuals (playbooks), for critical project functions.

Licensing, Permitting, and Community Outreach

PSE&G's Environmental Licensing and Permitting organization oversees all county, state, and Federal siting and permitting activities. Our Environmental Licensing and Permitting organization also manages any environmental compliance and remediation issues we may encounter throughout the course of a project.

Additionally, because of the impacts that our transmission projects may have on residents, PSE&G maintains a communication and outreach team to interface with local communities, siting boards, residents, and other key stakeholders in the communities affected by our operations.

Engineering, Construction, and Maintenance Practices

PSE&G's Asset Management and Engineering groups prepare and maintain transmission project standards and practices for the design, construction, operation, and maintenance of transmission facilities. Below is a high level summary of PSE&G's standard manuals for construction, maintenance, and operating practices:

Transmission Line

- Overhead Transmission Construction Manual
- Underground Transmission Construction Manual
- Transmission Live Line Maintenance Manual

Substation/Switching Station

- Engineering Design Guide
- Civil / Structural / Environmental Design and Construction Standards
- Construction Standards Inside Plant Manual
- Controls Design Standards
- Relay Test Manual
- Substation Maintenance Manual
- Substation Operating Manual

In addition, PSE&G has the ability to prepare project specific standard specifications that meet or exceed industry guidelines for construction materials and transmission facility material and equipment. Examples of these stand-alone specifications include those for:

- Tubular steel transmission pole structures
- Cable and conductor
- Station equipment and materials

- Concrete mix design

Health and Safety

PSE&G has a demonstrated commitment to preserving the safety and well-being of its employees and the employees of its contractors. This commitment is evidenced by our corporate vision, which describes our desire to be a leader for providing safe, reliable, economic, and green energy.

PSE&G is proud to foster a culture that makes the health, safety, and well-being of our employees and contractors doing work for us our number one priority - more important than production, profits, and serving the customer. This culture provides every employee and contractor the absolute right and obligation to question, stop, and correct any unsafe act or condition. This culture of safety is based on four key pillars:

- **Trust** – We respect and trust each other’s opinions and decisions and follow through on all health and safety concerns
- **Care** – We approach each day with the determination to care for ourselves, co-workers, contractors, and the communities we serve
- **Knowledge** – We have the knowledge and skills to be healthy and safe
- **Communication** – We communicate in a clear, open, and honest manner

All of PSE&G’s projects and operations are governed by our Safety Standards and Procedures Manual. In addition, PSE&G has a safety program that requires project-specific health and safety plans, job hazard analysis, and pre-job briefings.

5. Capabilities-Standardized Construction, Maintenance, and Operating Practices

PSE&G adheres to standardized construction, maintenance, and operating practices as described in Section 4.0. PSE&G complies with industry standards as well as PJM and NERC requirements.

6. Financial Statements

PSE&G’s strategy is to maintain a focus on operational excellence, financial strength and disciplined investment. For more on PSE&G’s financial strength and recent fiscal quarter (Form 10Q), as well as the most recent three fiscal years (Form 10K), see the link for the Investor Relations page at:

<http://investor.pseg.com/>

7. Consolidated Transmission Owners Agreement Commitment

PSE&G is a transmission owner member of PJM and is a party to the Consolidated Transmission Owners Agreement and the PJM Operating Agreement.

8. Facility Failure Remedy Experience

PSE&G operations personnel are on duty 24 hours per day, 365 days per year for immediate response to emergency events. Maintenance and repair supervisors are on call 24 hours per day, 365 days per year. If an incident should occur resulting in equipment damage or failure, the on call supervisor is notified immediately to evaluate the situation. Maintenance and repair staff is called in as necessary once the nature of the repair is determined. PSE&G has a comprehensive set of policies and procedures which cover emergency repair for substations and transmission lines. PSE&G maintains an inventory of critical spare equipment available for immediate replacement in the event of a catastrophic failure.

PSE&G has award-winning experience in emergency preparedness and in responding to storms and catastrophic outages. PSE&G closely monitors the track of all significant events likely to impact the

project or territory and makes emergency preparations in advance to address the potential impacts. The purpose of such preparations is to ensure PSE&G is ready to respond to potentially widespread power outages. PSE&G has agreements in place with other utilities across the country for mutual aid in emergency situations.

Outside Industry Recognition for Emergency Response and Reliability

PSE&G earned the Edison Electric Institute Award for outstanding restoration efforts after Superstorm Sandy in 2012 and Hurricane Irene in 2011. The awards highlighted both our ability to restore power to our ratepayers, as well how we communicated with ratepayers before, during, and after these weather events.

PSE&G has also earned industry recognition for operational excellence in key operating areas. PSE&G was named Electric Light & Power's 2015 Utility of the Year for its high ranking performance in customer satisfaction, leadership in employing state-of-the-art technology, and capital investment programs designed to enhance reliability and improved system resiliency.

Additionally in 2018, PSE&G was awarded the ReliabilityOne award from PA Consulting for outstanding reliability performance in the Mid-Atlantic region for the 17th consecutive year.

9. Right-of-Way Acquisition Experience

PSE&G has 834 miles of transmission right-of-way which is either owned-in-fee or has been acquired through easements. PSE&G has significant experience securing certificates of public necessity and acquiring the necessary rights-of-way to site transmission facilities.

PSE&G, as an electric public utility regulated by the New Jersey Board of Public Utilities (“BPU”) has the right to build in city streets and also has the right of condemnation under applicable New Jersey law.

PSE&G has in-house staff to manage the acquisition of property for transmission projects. PSE&G also hires the services of local vendors, including Member of Appraisal Institute (MAI) designated appraisers, who prepare market analysis and appraisals for properties that require acquisition rights.