



**COMPANY EVALUATION AND CONSTRUCTABILITY INFORMATION  
FOR NEET MIDATLANTIC 2A\_2016  
SALEM 345/138 KV SUBSTATION PROJECT**

**Submitted to:**



**August 15, 2016**

**2016 RTEP Proposal Window #2**

**Prepared by:**



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## ACRONYMS AND DEFINITIONS

Abbreviation	Definition
AEP	American Electric Power
AFUDC	Allowance for Funds Used During Construction
AMP	Asset Management Program
ANSI	American National Standard Institute
ASCE	American Society of Civil Engineers
BGEPA	Bald and Golden Eagle Protection Act
CAISO	California Independent System Operator
CEII	Critical Energy Infrastructure Information
CEMP	Corporate Emergency Management Plan
CIP	Critical Infrastructure Protection
CRO	Compliance and Responsibility Organization
CWA	Clean Water Act
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
EHV	Extra High-Voltage
EMS	Energy Management System
ERCOT	Electric Reliability Council of Texas
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission



Abbreviation	Definition
FPL	Florida Power & Light Company
GIS	Geographic Information System
ICP	Internal Compliance Program
ICS	Incident Command System
IEEE	Institute of Electrical and Electronics Engineers
IPaC	Information for Planning and Conservation
ISC	Integrated Supply Chain
kV	Kilovolt
[REDACTED]	[REDACTED]
Lone Star	Lone Star Transmission, LLC
MVA	Megavolt-Ampere
MVAR	Megavolt-Ampere Reactive
MW	Megawatt
NEECH	NextEra Energy Capital Holdings, Inc.
NEER	NextEra Energy Resources, LLC
NEET	NextEra Energy Transmission, LLC
NEET MidAtlantic	NextEra Energy Transmission MidAtlantic, LLC
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NextEra	NextEra Energy, Inc.
NFHL	National Flood Hazard Layer



Abbreviation	Definition
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
O&E	Outreach and Education
O&M	Operations and Maintenance
[REDACTED]	[REDACTED]
OPGW	Optical Ground Wire
OSHA	U.S. Occupational Safety and Health Administration
PDDC	Power Delivery Diagnostic Center
PG&E	Pacific Gas & Electric
PJM	PJM Interconnection, LLC
Project	The Salem 345/138 kV Substation Project
PSS/E	Power Transmission System Planning Software (Siemens)
PUA	Possession and Use Agreement
ROE	Return on Equity
ROW	Right of Way
RTEP	Regional Transmission Expansion Plan
SCE	Southern California Edison
SCG	Southern California Gas
SIS	System Impact Studies
SMEs	Subject Matter Experts
T&Cs	Terms and Conditions



Abbreviation	Definition
T&S	Transmission & Substation
TO	Transmission Owner
TOP	Transmission Operator
TP	Transmission Planner
UCA	Unrestricted Construction Access
UCT	Upper Canada Transmission Inc.
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WBS	Work Breakdown Structure





## SIGNATURE PAGE

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Approvals:



8/15/2016

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**David Davis**

Executive Director, Development

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Date



8/15/2016

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**Michael Sheehan**

Vice President, Development

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Date

### Inquiries:

Questions and comments regarding this document should be referred to:

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## A. EXECUTIVE SUMMARY

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### Name of Proposing Entity

NextEra Energy Transmission, LLC (NEET) and NextEra Energy Transmission MidAtlantic, LLC (NEET MidAtlantic) are pleased to submit the Salem 345/138 kV Substation Project (the Project) for consideration by PJM Interconnection LLC (PJM) in the 2016 Regional Transmission Expansion Plan (RTEP) Proposal Window #2.

NextEra Energy, Inc. (NextEra) is a leading clean energy company with consolidated revenues of approximately \$17 billion, approximately 46,400 megawatts of generating capacity, and approximately 14,300 employees in 27 states and 4 Canadian provinces as of year-end 2015. Headquartered in Juno Beach, Florida, NextEra's principal subsidiaries are:

- Florida Power & Light Company (FPL), which serves more than 4.8 million customer accounts in Florida and is one of the largest rate-regulated electric utilities in the United States,
- NextEra Energy Resources, LLC (NEER), which, together with its affiliated entities, is the world's largest generator of renewable energy from the wind and sun, and
- NEET, which owns, operates, and is building transmission assets in several US states and Canada.

Through its subsidiaries, NextEra has been recognized by third parties for its efforts in sustainability, corporate responsibility, ethics and compliance, and diversity. In March of 2016, NextEra was ranked No. 1 in the electric and gas utilities industry in Fortune's 2016 list of "World's Most Admired Companies" and has been named a World's Most Ethical Company® for the 9<sup>th</sup> time by the Ethisphere Institute, the global leader in defining and advancing the standards of ethical business practices.

As requested by PJM, NEET MidAtlantic has organized this proposal in conformance with PJM's Greenfield Project Proposal Template.

### Name and Address of the Proposing Entity

#### **NextEra Energy Transmission MidAtlantic, LLC**

700 Universe Blvd  
UST/JB  
Juno Beach, FL 33408

### Proposal Window and associated violation/issue being addressed

- 2016 RTEP Proposal Window #2
- Common Mode Outage Violation – Flowgate 907 – Nickel-Warren 138 kV
- N-1-1 Thermal Overload – Flowgate N2-T6 – TodHunter 345/138 kV transformer 17
- N-1-1 Thermal Overload – Flowgate N2-T7 – TodHunter 345/138 kV transformer 16



- N-1-1 Thermal Overload – Flowgate N2-T8 – TodHunter 345/138 kV transformer 17
- N-1-1 Thermal Overload – Flowgate N2-T9 – TodHunter 345/138 kV transformer 15
- N-1-1 Thermal Overload – Flowgate N2-T10 – TodHunter 345/138 kV transformer 15

### Violations Caused by Proposal/Nearby Violations Not Addressed by Proposal

Powerflow analysis results show that when the Project is studied there are no new violations based on the data supplied by PJM.

### Identify Projects That Span Zones

[Redacted]

### Intent to Construct/Own/Operate/Maintain

NEET MidAtlantic is seeking to be designated to construct, own, and maintain the proposed project. Based on PJM's approval in the prequalification process, NEET MidAtlantic requests Designated Entity status for this Project.

### Proposed Solution and Corresponding Violation(s) Resolves

[Redacted]

### Project Consideration

The proposed project consists of a 345/138 kV substation (Salem 345/138 kV Substation) that interconnects three existing transmission lines. The Project should be considered as a whole and not as separate proposals to interconnect each line.

### High Level Cost Overview and Commitment

NEET MidAtlantic estimates that the total project will cost \$17.1 million, with \$0.7 million in work to be performed by the incumbent Transmission Owner (TO). A more detailed cost breakdown is included in [Appendix 6](#) of this Proposal. As described in this Proposal, NEET MidAtlantic has invested substantial resources in developing its project cost estimate and believes that the Project can be completed for this project cost estimate.

[Redacted]

### Additional Benefits of the Proposal

The proposed Project resolves the targeted Common Mode Outage and N-1-1 Thermal overloads identified by PJM. Further, it enhances the 345 kV and 138 kV transmission systems allowing for more efficient delivery of power to key load pockets. There are also potential market efficiency improvements that could be associated with the Project.



## B. COMPANY EVALUATION INFORMATION

### Name and Address of Entity

The name and address of the proposing entity is:

Name of company:	<b>NextEra Energy Transmission MidAtlantic, LLC</b>				
Mailing Address:	700 Universe Boulevard, UST/JB				
City:	Juno Beach	State:	Florida	Zip:	33408

The points of contact are:

	Primary Contact	Secondary Contact
Contact Name:	<b>David Davis</b> Executive Director, Development NextEra Energy Transmission, LLC	<b>Stephen Gibelli</b> Director of Regulatory Affairs NextEra Energy Transmission, LLC
Address:	700 Universe Boulevard, UST/JB Juno Beach, Florida 33408	700 Universe Boulevard, FEW/JB Juno Beach, FL 33408
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Please ensure that all correspondence regarding this proposal is sent to both the primary and secondary contact personnel.

### Pre-Qualification Number

NEET's and NEET MidAtlantic's PJM pre-qualification ID Number is Q13-18.



## Additional Company Information

### NextEra's Transmission Experience

To prepare its response to PJM's 2016 RTEP Proposal Window #2, NEET MidAtlantic engaged a number of legal, environmental, permitting, engineering, land acquisition, and other specialty groups in the NextEra family of companies. With respect to the facility design, a permitting study effort was completed prior to the anticipated site being provided to the engineering team (consisting of both in-house and external Subject Matter Expert (SMEs)) for the facility design effort.

The NextEra family of companies has a wealth of experience in transmission line and substation siting, design, construction, operation and maintenance (O&M), and financing – including a substantial amount of experience for extra high-voltage (EHV) transmission line and substation projects. The NextEra companies operate over 8,500 circuit miles of high-voltage transmission lines.

The construction of large-scale infrastructure projects is a core competency of NEET MidAtlantic through its experienced team and NextEra affiliates. NEET MidAtlantic brings depth of experience in construction management of transmission facilities. Our team has proven capabilities in constructing and managing substation projects of similar size, type, and technology as this Project. NextEra affiliates have completed projects comply with the design, reliability, and operational standards of applicable authorities across the region. Please see Table 1 below for a list of some major 345 kV and 500 kV substation projects completed over the years throughout the United States.

NEET MidAtlantic will establish a local construction management office within the construction site and will staff the Project with an execution project manager, substation construction leads, safety manager, environmental compliance manager, commissioning manager, and administrative support. During the project execution phase, NEET MidAtlantic will draw upon the resources of its affiliates to ensure success. This includes personnel from FPL, NEET, and NEER. These substantial resources give NEET MidAtlantic access to pools of specialized talent within the NextEra organization, and enable NEET MidAtlantic to assemble a team of accomplished professionals and SMEs to make up the core project team. NEET MidAtlantic can draw on the following NextEra resource capabilities in different areas of expertise:

- 90+ design, engineering and construction professionals with transmission experience
- 70+ materials and equipment procurement experts
- 35+ environmental assessment, licensing, and permitting experts
- 30+ regulatory affairs professionals
- 20+ land acquisition experts and technical supporting staff
- 750+ transmission operations and maintenance personnel
- 35+ safety experts



NextEra's substantial experience developing, constructing, and operating 345 kV facilities, most notably Lone Star Transmission, LLC (Lone Star) and ability to meet aggressive construction schedules (e.g., the Texas Clean Energy Express), is summarized below.

### **Lone Star**

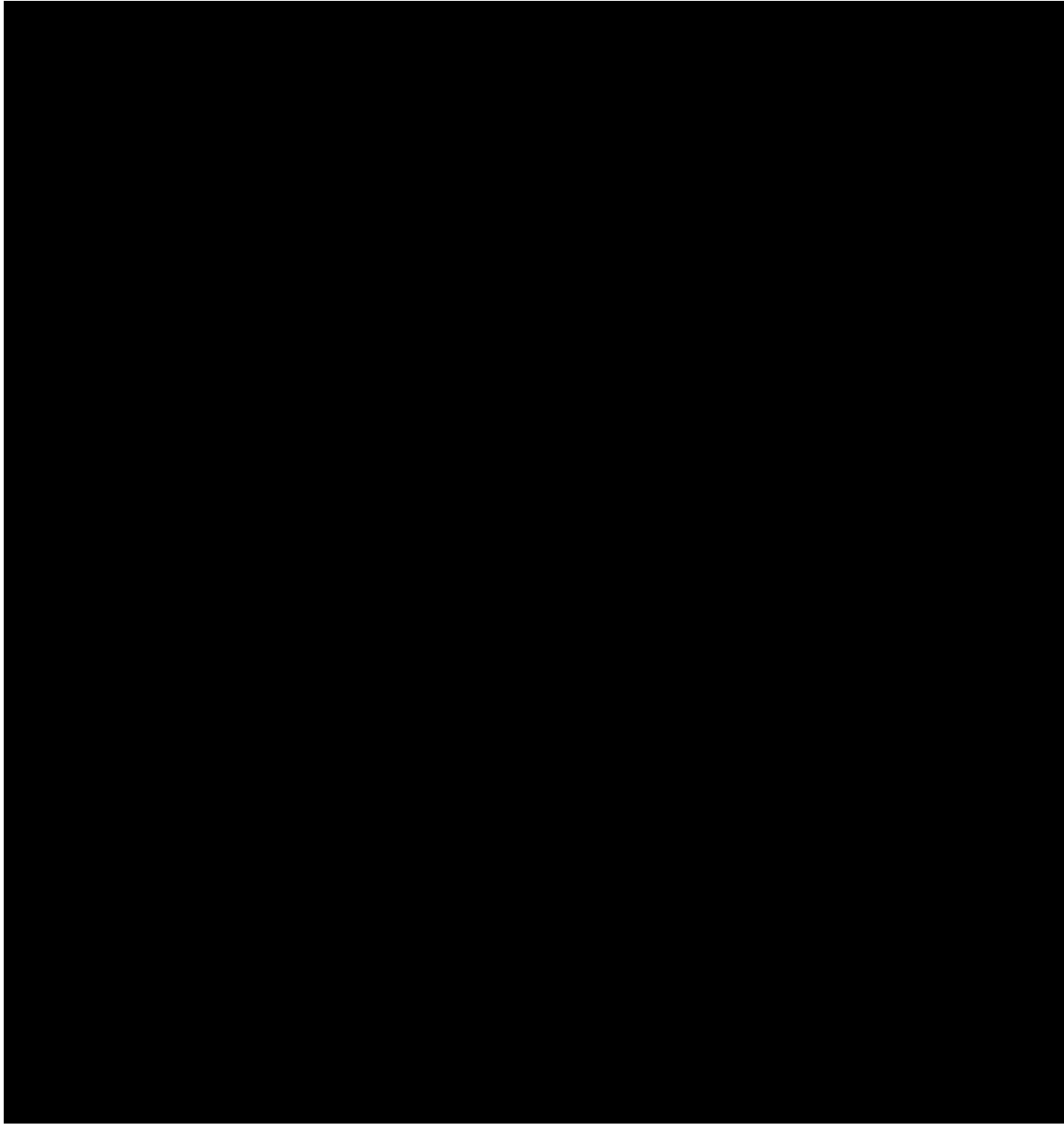
NEET's subsidiary, Lone Star, was awarded a Certificate of Convenience and Necessity from the Public Utility Commission of Texas to become a new-entrant regulated public utility to develop, construct, and operate approximately 300 miles of double circuit and 30 miles of single circuit 345 kV lines, five 345 kV substations, and associated facilities. In early 2013, Lone Star completed construction and energized the project on-time and for tens of millions of dollars less than its initial cost estimate for the \$700+ million project. This project is part of the Electric Reliability Council of Texas (ERCOT) Competitive Renewable Energy Zone transmission grid improvement program, mandated by the Texas Legislature. The Lone Star team, including support from NEET and other NextEra affiliates, managed all aspects of this project including development, permitting, land acquisition, regulatory filings, design, construction, and operations to establish a new transmission utility in Texas.

NEET established a Lone Star operations team, which included targeted support from FPL personnel. The operations team assisted Lone Star in obtaining the necessary pre-operations certifications from the North American Electric Reliability Corporation (NERC) and the Texas Reliability Entity, Inc. as a NERC registered Transmission Operator, and, also, a Transmission Service Provider from ERCOT. Lone Star relies on shared NextEra affiliate Transmission and Substation personnel, processes and procedures to operate the business. Further, Lone Star benefits from the operational efficiencies of a well-established, shared support organization in the NextEra family of companies. The Lone Star business demonstrates how NextEra successfully applies resources to projects located anywhere in the U.S.

### **Texas Clean Energy Express**

The Texas Clean Energy Express project is an example of an EHV transmission project completed on a very aggressive schedule. A NextEra subsidiary launched this long gen-tie at a transmission voltage level to interconnect a large wind generation site to a host utility. The project includes a 213-mile, 345 kV transmission voltage level line with two 345 kV substations. From conception to commercial operation, this project was completed in only 16 months. This project demonstrates NextEra's ability to design, develop, and construct voltage level transmission lines on extremely short timeframes, while completing appropriate processes for engineering, land acquisition, material and equipment procurement, geotechnical and ground-based surveying, environmental permitting, mitigation measures for existing utility crossings, and pre-operational testing.







## NextEra's Development Experience

NEET is a wholly-owned, indirect subsidiary of NextEra. NEET MidAtlantic, through NEET, will draw upon the resources of the NextEra family of companies to ensure successful project execution. NextEra companies have a long-standing presence in PJM as developers, owners, and operators of clean energy generation and transmission voltage level facilities. NEET can draw on these resources and this experience to operate effectively and efficiently in the region.

### NextEra

NextEra, headquartered in Juno Beach, Florida, is a leading clean energy company with consolidated revenues of approximately \$17 billion, with approximately 46,400 megawatts of generating capacity, and 14,300 employees in 27 states and 4 Canadian provinces as of year-end 2015. NextEra has over 50 years of technical expertise in engineering, constructing, and operating large infrastructure projects, including transmission systems. NextEra's family of companies constructed, owns, operates, and maintains more than 66,000 miles of distribution lines, approximately 8,500 circuit miles of transmission lines between 69 kV and 500 kV, and 770 substations across North America. Additionally, NextEra is a nationally recognized company, which has a demonstrated capability for completing large transmission projects in a timely and cost-effective manner.

### FPL

A principal subsidiary of NextEra and affiliate of NEET, FPL is the largest rate-regulated electric utility in Florida, and one of the largest in the United States. As of December 31, 2015, FPL's assets totaled approximately \$42.5 billion, and FPL's generating resources for serving load consisted of 26,073 megawatts (MW), of which 25,254 MW were served from FPL-owned facilities. FPL serves more than 9.5

million people through approximately 4.8 million customer accounts in Florida. Due to FPL's ongoing investment in smart, cost-effective, and efficient technologies, FPL is able to provide the most affordable electric service in Florida. For example, FPL's typical residential customer bill continues to be the lowest of the state's 55 electric utilities (based on a 1,000 kilowatt-hour typical bill) and 30% lower than the national average in 2015.

## **NEER**

A principal subsidiary of NextEra and affiliate of NEET, NEER is the largest producer of energy from the wind and sun in the world. As of December 31, 2015, NEER had nearly 12,414 MWs of wind generating capacity and nearly 1,026 MWs of solar generation in its portfolio. Electric output from NEER's generating assets is sold to companies and businesses with an interest in clean energy, including utilities, retail electricity providers, power cooperatives, municipal electric providers, and large industrial customers. NEER has earned a strong reputation in power plant development, construction, and operations including numerous transmission voltage level gen-ties and generation switchyards, using standardized processes, best practices, and superior execution.

## **NEET**

NEET currently owns, operates, and maintains transmission utilities in New Hampshire and Texas, and is developing transmission projects throughout North America. In January of 2015, the California Independent System Operator (CAISO) selected NEET West, a subsidiary of NEET, as the developer for the Suncrest 230 kV 300 Megavolt-Ampere Reactive (MVAR) dynamic reactive power support project under its 2013-2014 transmission plan. CAISO specifically cited NEET West's operational experience, which it draws from the NextEra family of companies, as one of the factors in its selection. NEET West was the first non-incumbent to win a CAISO competitive solicitation transmission project. In March of the same year, CAISO again selected NEET West as the developer for the Estrella 230/70 kV substation located in Pacific Gas & Electric (PG&E) service territory, in San Luis Obispo County, California.

In August 2013, the Ontario Energy Board selected Upper Canada Transmission Inc. (UCT), a partnership of NextEra Energy Canada ULC (a NEET affiliate), Enbridge Transmission Holdings Inc., and Borealis EWT Inc. as the developer for the East-West Tie, which involves construction of a new, approximately 250-mile long double circuit 230 kV electrical transmission line running between Thunder Bay and Wawa, Ontario. The East-West Tie, in conjunction with an existing transmission line, will increase the capacity and reliability of the Bulk Electric System between northeast and northwest Ontario. UCT prevailed in a competitive proceeding involving six applicants who submitted detailed proposals for the project.

In addition, as explained above, Lone Star, a wholly-owned subsidiary of NEET, constructed, operates, and maintains 300 miles of double-circuit and 30 miles of single-circuit 345 kV transmission line, using spun concrete and tubular steel monopoles with braced post insulators. The project traverses various terrains and geological conditions, which required multiple specialized foundation types. The project also required the construction of three large greenfield substations and two series compensation



stations. In June 2016, Lone Star constructed a 4<sup>th</sup> large 345 kV greenfield transmission substation on schedule and under budget in order to serve localized load to Big Country Electric Cooperative.

Lone Star's primary and backup Energy Management System is in Florida and primary and back-up control centers are located in Austin, Texas for system operations. In addition to its Texas operations team, Lone Star relies on shared affiliate transmission and substation personnel, processes and procedures, and benefits from the operational efficiencies of a well-established shared services organization.

### NextEra's Engineering Expertise

The NextEra family of companies has a highly qualified engineering organization that will lead the execution of the Project. NextEra affiliates' design and engineering capabilities include:

- In-house engineering expertise in transmission line and substation engineering and design; civil and structure engineering; protection, control, and communications systems expertise;
- Experienced transmission line designers and SMEs who will develop the scope of work documents for the construction plan, including structure drawings, plan and profile drawings, and construction specifications; and
- Long-standing, collaborative relationships with many of the most experienced engineering firms in the power industry, which are already being used to support wind, solar, fossil, and transmission projects in development – bringing cost certainty and execution confidence.
- Strength in material and equipment procurement:
- Experienced in-house procurement staff with the ability to work through vendor selection;
- Long-standing relationships with vendors and significant buying power that allows NEET to access better pricing from reputable suppliers, as well as expedite purchase and delivery during critical times;
- Established procurement processes that incorporate quality, cost, reliability, financial stability, delivery, field support, safety track record, commitment to continuous improvement, and innovation when selecting suppliers; and
- Practice of buying major and critical equipment in advance, mitigating risks such as delivery delays or material cost escalation.

Also, the NextEra family of companies has a long history and significant experience in the construction of transmission lines, substation facilities, and related infrastructure. The NextEra team has proven capabilities in constructing and managing high voltage transmission line projects in compliance with the design, reliability, and operational standards set forth by a variety of authorities in North America. Since 2007, NEET and its affiliates completed over 1,476 miles of new transmission voltage level line construction at voltages ranging from 69 kV to 500 kV. NextEra's experience includes the full range of activities needed to support successful project development. We have extensive experience with licensing and permitting processes in PJM, as well as other jurisdictions. We have over 35 staff members who are specifically focused on permitting and licensing activities, and have the following capabilities:



- Experience developing strategy and planning for emerging federal and state legislative and regulatory developments that have the potential to impact ongoing activities;
- Ability to evaluate and ensure compliance with and the appropriate adherence to federal, state and local environmental requirements including environmental audits;
- Expertise identifying and obtaining required licenses and regulatory agency approvals to construct new non-utility fossil and renewable energy generating facilities, gas infrastructure and transmission facilities;
- Experience performing environmental due diligence for potential acquisitions, divestitures, and financings; and
- Experience promoting environmental relationships with external environmental groups, and integrating and communicating sustainability.

Affiliates of NEET MidAtlantic have numerous environmental professionals who work solely on new project development activities. They are involved in projects from the concept stage through the first year of operation and bring the following capabilities:

- An emphasis on environmental sustainability and responsibility for assessing environmental issues and developing mitigation strategies; ensuring the timely receipt of environmental approvals; assisting project teams in understanding environmental regulatory requirements and ensuring environmental compliance during construction; and liaising with regulators;
- In-house aquatic environment experts, soils experts, wildlife biologists, geotechnical engineers, and environmental engineers;
- Established environmental compliance monitoring program via a permit condition compliance matrix, regular compliance team meetings, and formal environmental audits; and
- Relationships with qualified and trained environmental inspectors to monitor work being completed on rights-of-way (ROW), and specifically to identify any additional mitigation to ensure compliance with regulations.

### NextEra Project Operation Experience

Affiliates of NextEra have a substantial O&M organization that delivers operational excellence. Its capabilities include:

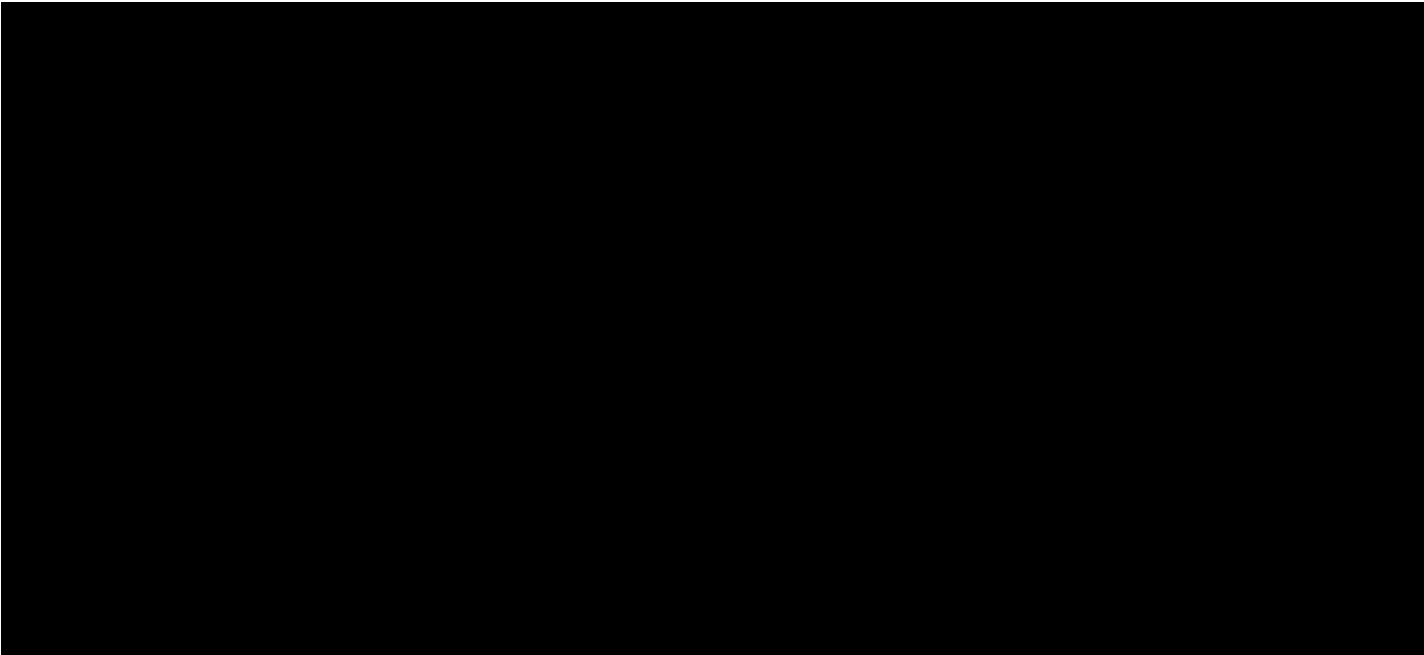
- Supporting NEET's operations with in-house and external specialists that have industry experience operating and maintaining a variety of transmission equipment, including switched capacitors, series compensators, substations, and transmission lines up to 500 kV. NextEra's transmission specialists currently support NEER's existing transmission-voltage level facilities in the PJM region. In addition to receiving support from the existing staff supporting assets in the PJM region, the project would be monitored and controlled by NEET's in-house Transmission Operations team, located in Austin, Texas;
- O&M of more than 8,500 circuit miles of transmission voltage level lines and 770 substations across North America, including more than 3,200 miles of 230 kV lines, more than 1,000 miles at 345 kV and over 1,100 miles of 500 kV lines; and



- Owning, operating, and maintaining reactive power support equipment, including 365 MVARs of synchronous condensers, 8,115 MVARs of transmission level switched capacitors, and 3,000 MVARs of series compensation equipment. These assets include 345 kV reactive power compensation equipment. The total power transformer capability operated and maintained by NextEra affiliates is approximately 160,000 Megavolt-Ampere (MVA), of which over 139,000 MVA is subject to NERC Reliability Standards.

As explained above, NextEra has a well-qualified O&M team, and NEET MidAtlantic will leverage both internal resources and external contractors for the safe, reliable, and efficient operation and maintenance of the project. Below are highlights of our O&M capabilities:

- NextEra companies own NERC registered assets in all eight NERC regions; including being a NERC registered Transmission Owner in five regions and a Transmission Operator in two regions. NextEra has processes and procedures in place to comply with all applicable reliability criteria, including compliance with all NERC operation and maintenance Reliability Standards.
- NextEra companies have access to over 750 power system professionals including technicians and other staff with expertise in all aspects of transmission and substation equipment installation, maintenance, and repair. The Power Delivery Performance & Diagnostics Center (PDDC) in South Florida serves as a hub for technical knowledge, as well as remote condition assessment in support of operations; the PDDC (pictured below) uses advanced technology to monitor and manage equipment, and detect and prevent issues before they happen.



- NextEra affiliates oversee a large number of transmission projects annually, including major system upgrades and maintenance initiatives, and also supports O&M services in 27 U.S. states and in 4 Canadian provinces at transmission level facilities and for regulated transmission assets in Florida, ISO New England, and ERCOT.



- NEET affiliate FPL exhibited top-decile transmission reliability performance in a recent benchmarking study (2015 Southeast Electric Exchange Reliability Survey, SAIDI performance).
- NextEra affiliates implement O&M transmission solutions that include new designs, new condition assessment processes, and/or new products. Our staff often works directly with equipment manufacturers to develop these solutions in order to continually improve the reliability of our transmission systems. This background prepares us well to manage geographic and climate conditions that we are likely to face in future projects.
- NEET MidAtlantic will rely on affiliate transmission operations personnel both in the project area and in support functions to ensure a rapid response to emergency operating conditions. NextEra field operations personnel, directly and through applicable contracts with third-party vendors in the project area, will respond to all operating events during normal and emergency conditions. NextEra companies are experienced at devising recovery plans, specifically for storms, to help respond to system emergencies.

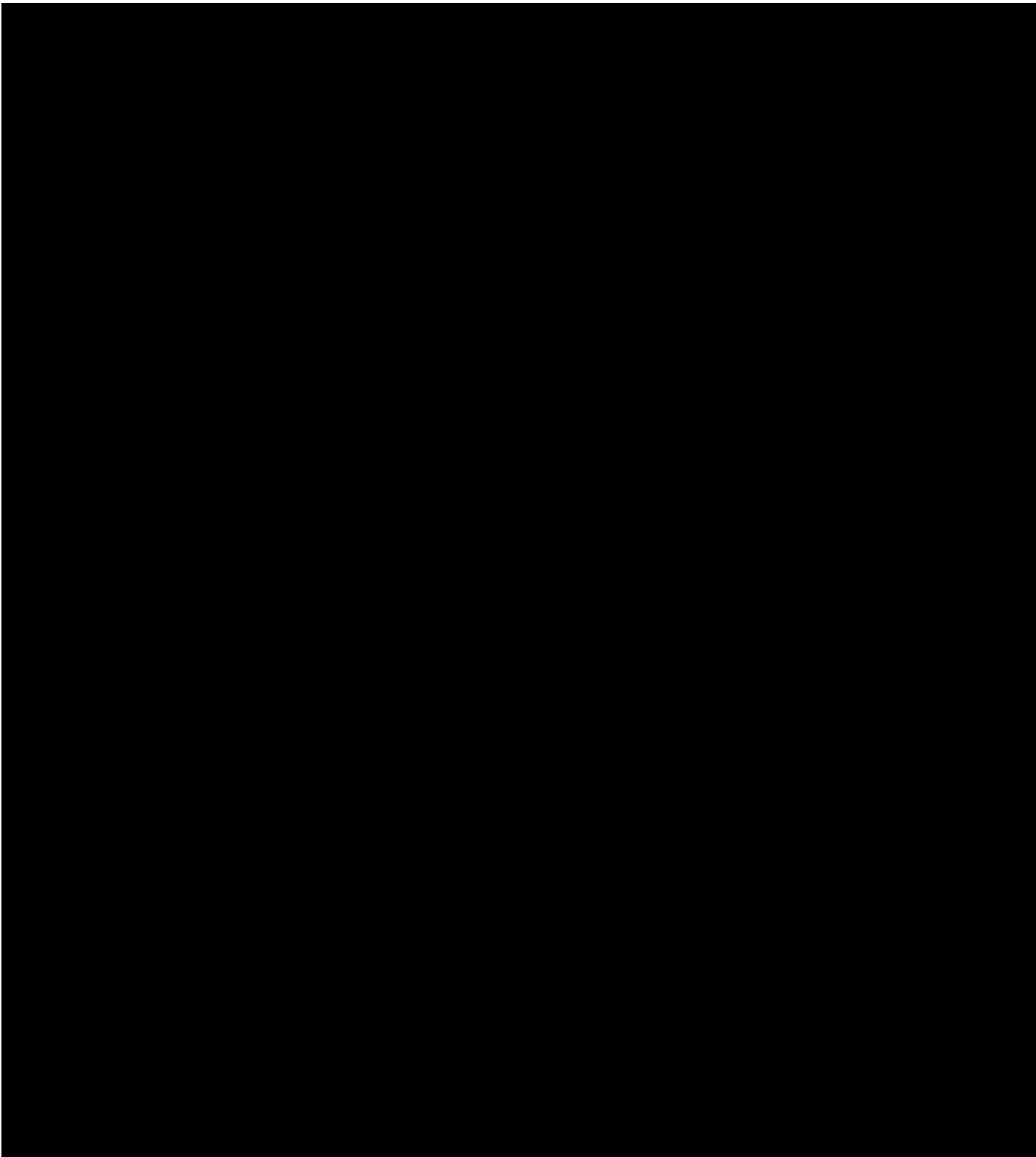
The NextEra companies have extensive experience adhering to standardized construction, maintenance, and operating practices, including the following:

- NERC Reliability Standards;
- American National Standard Institute (ANSI) C2-2012 National Electrical Safety Code (NESC);
- American Society of Civil Engineers (ASCE) 74 Guidelines for Electrical Transmission Line Structure, 3rd Edition, 2010;
- ASCE 10-97 Design of Latticed Steel Transmission Structures;
- CIGRE 299 Guide for Selection of Weather Parameters for Bare Overhead Conductor Ratings;
- Institute of Electrical and Electronics Engineers (IEEE) 738-2006 Standard for Calculating the Current-Temperature of Bare Overhead Conductors;
- IEEE 1243 Guide for Improving the Lightning Performance of Transmission Lines; and
- IEEE 1313.2 Guide for the Application of Insulation Coordination.

### NextEra's Experience in PJM

The following table describes NEER's experience working in the geographical region of PJM on transmission voltage level projects.





## NextEra's Project Execution Track Record

[REDACTED]

NEET MidAtlantic, by being able to draw from expertise across the NextEra family of companies, supplemented with key consultant expertise, has the capacity to successfully execute the Project on-time and within budget. NextEra affiliates' project management experience in managing and adhering to scope and schedule for transmission projects is highlighted by summaries of the two following projects:

*Blythe Energy Project:* This 230 kV voltage level transmission interconnection line—located approximately seven miles west of the California and Arizona border—is an excellent example of a challenging project that was delivered ahead of schedule and under budget. The 67 mile, single and double circuit 230 kV voltage level transmission line was built to interconnect NEER's 520 MW natural gas-fired Blythe Energy Plant with the Southern California Edison (SCE) 230 kV transmission grid. The line paralleled existing 161 kV and 500 kV lines for 30% of the route and was constructed within a 100-foot ROW. Additionally, the project was built in an environmentally sensitive Desert Tortoise and Mojave Fringe-Toed Lizard habitat in the Mojave Desert in Southeastern California. The project required cultural, archaeological, biological, paleontological, and Native American inspectors on site during all periods of construction. In addition, the new line crossed numerous existing transmission lines and paralleled a major gas infrastructure line into Southern California, creating various design and execution challenges. NEER, in conjunction with Southern California Gas (SCG), initiated pipeline mitigation studies and identified mitigation improvements, and SCG constructed the improvements. Despite these challenges, the project was completed approximately 25% below its original budget of \$100 million and 51 days ahead of schedule.

*Lone Star's Competitive Renewable Energy Zone Project:* This project is another example of superior management of project scope and schedule. Lone Star's transmission system consists of 300 miles of double circuit and 30 miles of single circuit 345 kV transmission lines, broken into three segments, with five 345 kV substations. Managing a project which traverses a long distance and diverse terrains presents scope and schedule challenges. The Lone Star project team used geographic information system (GIS) based project management software to coordinate land acquisition and construction activities, as well as to track progress, report to management and document quality assurance and quality control processes. Using Primavera software, the project team conducted weekly project schedule reviews, including validation sessions with management and monthly executive dashboard reviews on all work streams. The project team also participated in regular engineering design reviews; assisted in managing the coordination of design criteria, system studies, equipment and material specifications, procurement, and relay protection settings with all interconnecting utilities in Texas; and ensured that all required changes were executed according to change management processes. The

[REDACTED]



Lone Star team was able to effectively manage design and construction of this large, complex project and successfully complete it on time and more than \$50 million under budget.

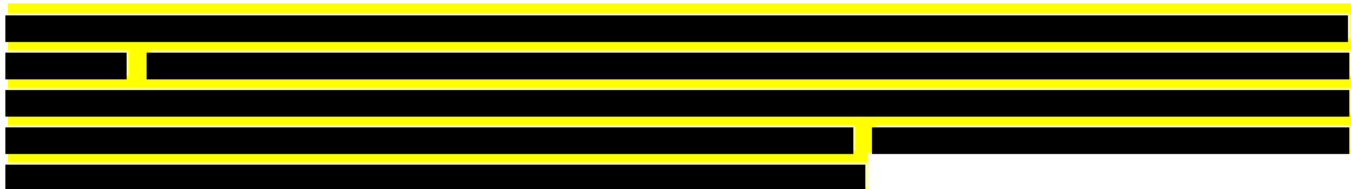
As with the other comparable projects described above and throughout this application, NEET MidAtlantic will employ best practices in project management, including rigorous adherence to schedule and effective oversight, to complete the project. These proven project management techniques, as well as our transmission and substation experience will be used to ensure timely project delivery and cost control.

### NextEra's Record of Standardized Construction, Maintenance, and Operating Practices

#### Construction Practices

The construction of large-scale infrastructure projects is a core competency of NEET MidAtlantic. Through its team and affiliates, NEET MidAtlantic brings depth of experience in construction management of transmission and substation facilities. NextEra affiliates' have proven capabilities in constructing and managing substation projects of similar size, type, and technology as the Salem 345/138 kV Substation Project. NextEra affiliates' completed projects comply with the design, reliability, and operational standards of applicable authorities across North America.

NEET MidAtlantic will staff the Project with a project manager, substation construction lead, project engineer, safety manager, environmental compliance manager, commissioning manager, and administrative support. In addition, NEET MidAtlantic will hire a design engineer (Engineer of Record) and substation construction contractor.



The NEET MidAtlantic construction management and inspection team will be active through all phases of construction including mobilization; receiving, offloading and storage of equipment/materials, installation and commissioning. Based on NextEra's established practice, NEET MidAtlantic will use a three-part approach in addressing inspection and quality assurance and control during the execution of this Project.

1. NEET MidAtlantic construction leads and managers are required to perform construction inspections prior to critical milestones and energization using a Verification and Validations (V&V) matrix developed for the Project;
2. NEET MidAtlantic requires each contractor to develop and use a Quality Assurance and Control plan; and



3. NEET MidAtlantic requires the Engineer(s) of Record to perform site visits, inspections, walkdowns and witnessing of tests prior to energization.

Each element of this approach is discussed below.

### **Construction Inspections**

During construction, NEET MidAtlantic construction lead and managers are required to perform construction inspections using the V&V matrix developed for the Project. Developed before construction commences, the V&V matrix is project-specific, addressing necessary inspections, witness points, confirmations, and verification of documentation and drawings. The V&V process verifies that the facilities are constructed as designed and that all compliance documentation is provided by the appropriate construction or engineering contractor. This allows NEET MidAtlantic to document all of the required compliance activities, manage the commissioning process, and ensure that the facilities perform as designed prior to energization.

The team developing the V&V Matrix will consist of the Project Director, engineering and environmental leads, construction lead, and director of commissioning, as well as SMEs from NextEra affiliates' Engineering and Construction, and Substation Divisions. The V&Vs are categorized and can be sorted for the specific phase of the Project. For example, all design drawing and document checks can be filtered for completeness prior to site mobilization or start of construction. Another critical checkpoint in the project schedule is just prior to energization, when all required verifications can be sorted and confirmed prior to energization of any equipment. During the construction phase of the Project the NEET MidAtlantic construction lead and team will witness and inspect the work and as required using the V&V matrix. Additionally, the NEET MidAtlantic commissioning manager and team will witness and verify the electrical/mechanical operation and functionality of all equipment, protection, and control systems and communication systems prior to energization. The V&Vs are confirmed and signed off by qualified NEET MidAtlantic construction managers and engineers.

### **Contractor Quality Assurance and Control Plans**

NEET MidAtlantic's quality control process applies to all work products, including reports, planning studies, calculations, material/equipment specifications, construction drawings and every other exhibit, drawing or document associated with the design and construction of the facility. NEET MidAtlantic will require the contractor to develop and provide QA/QC plans. The substation construction contractor must, prior to site mobilization, produce a site-specific plan for the scope of work, including applicable procedures, and proper verification forms and checklists with adequate supervisory sign-off. NEET MidAtlantic project management, with support of SMEs, Engineer of Record and managers responsible for quality, will review each contractor's QA/QC plan for completeness, and require the contractor to make any necessary changes.

The substation contractor, along with on-site NEET MidAtlantic construction management, will be responsible for daily and weekly inspection and construction quality control. The contractor will supply



personnel experienced in both substation and transmission construction who will perform the construction inspections. Daily and weekly inspections will be documented using forms approved by NEET MidAtlantic. Project specific inspection forms will be developed early in the Project. When completed, inspectors will scan the inspection forms and place them on the Project's electronic site for review by contractor, engineering, and project management staff. This inspection process is ongoing and continues until project completion.

The contractor will also retain independent local firms (approved by NEET MidAtlantic) to perform laboratory testing services associated with concrete placement and strength. Independent compaction testing will be conducted on grading levels to confirm the grading contractor's work. Compaction testing will also be performed on the backfilling of trenches for duct banks, conduit, and grounding by the independent testing firm. Compaction rates (frequency of compaction tests) will be identified in the project specifications.

The selected independent testing contractor will perform material testing on concrete for slump, air entrainment, temperature, and concrete compressive strength. The rate of material testing (every 10 yards, etc.) will be identified in the project specifications. Nondestructive testing techniques will be considered on large diameter drilled piers, such as sonic echo tests (pile integrity tests; pits), crosshole sonic logging (CSL), or thermal integrity profiling (TIP). However, dry hole construction is anticipated, so NDTs most likely will not be required.

Additional inspection activities to be performed by NEET MidAtlantic and its contractor for the substation includes visual inspection, monitoring and reporting of the installation for fencing, duct banks, below/above grade conduit, below/above grade grounding, structural steel, electrical bussing, insulators, power transformers, group-operated switches, power circuit breakers, power transformers, instrument transformers, control building and associated accessories, relay panels, station batteries, station lighting, station service power and yard cable.

Throughout the course of the work, NEET MidAtlantic's construction management and inspection team will conduct preparatory meetings with the construction contractor prior to initiation of major work scopes. The preparatory meetings will help ensure that the engineers, managers, and inspectors are fully knowledgeable and capable of approving the work processes, materials, safety processes, and plans that the construction contractor will apply to a specific component of work. For example, a specific preparatory meeting will be scheduled for drilled pier foundations, spread footing, and direct embedded foundations. The construction contractor will be required to submit written plans prior to each preparatory meeting.

**Engineers of Record to perform site visits, inspections, walkdowns, and witnessing of tests prior to energization**

The third approach to quality includes the requirement that the substation Engineer of Record perform site visits, inspections, walkdowns and witnessing of tests prior to energization to ensure all specified equipment is actually installed and that the equipment installation meets the construction



specifications. The final site walkdowns are the critical final step in verifying that the Project is ready to be energized.

### Operations and Maintenance Practices

NextEra affiliates' transmission businesses have well-established, practices, and procedures for the operations and maintenance of its facilities, which are derived from FPL's practices for its transmission line and substation facilities. NextEra's safety culture, organizational structure, and internal auditing processes ensure compliance with maintenance standards. This is evidenced by:

- FPL's and Lone Star's annual reporting obligations to their respective Public Service Commissions. These include the actual transmission inspection and maintenance tasks completed each year compared to the previously reported annual maintenance plan.
- For its protection schemes, as applicable, NextEra facilities provide quarterly protection status information to their respective NERC Regional Entities.
- SMEs within the NextEra Technical Services team continuously monitor all aspects of transmission and substation equipment to ensure adequate levels of reliability are maintained. Equipment SMEs work closely with the NextEra Energy's 24/7 Transmission PDDC. This center serves as a hub for asset health data continuously gathered by remote condition assessment technologies and assessed by the center's smart-analytic tools. The PDDC provides oversight of NextEra affiliates' facilities and the Technical Services team continuously audit the information collected.

To ensure the safety and reliability of NEET MidAtlantic facilities, its maintenance practices will be based on those of NextEra affiliate's existing O&M organization, responsible for approximately 8,500 miles of transmission lines up to 500 kV across the United States. These facilities are operated and maintained in compliance with NERC TO and TOP Standard requirements. The existing NextEra affiliate's O&M organization has a program of maintenance standards providing the capability to manage compliance to the provisions of the PJM operating agreement and standards and procedures. The NEET MidAtlantic O&M team is supported by NextEra affiliate's O&M SMEs with experience in complying with ISO operating agreements and NERC Reliability Standards across a significant number of jurisdictions in North America.

The existing maintenance plan for NextEra companies covers all elements of the proposed project. NextEra companies' practices include a formalized program of procedures and processes and reinforced by continuous monitoring and condition assessment practices.

### Operations and Maintenance Capabilities

NEET MidAtlantic will leverage in-house and third-party resources for the safe, reliable and efficient maintenance of the Project. NEET MidAtlantic, in conjunction with the NextEra affiliate's power delivery team, brings significant O&M capabilities as outlined below:

- Well-established O&M practices and standardized processes, which are already being used at NextEra's operating EHV transmission facilities.



- Access to over 766 power system professionals, including technicians and other staff, with expertise in all aspects of transmission and substation equipment installation, maintenance and repair. Many of these personnel will provide support to NEET MidAtlantic through our PDDC located in south Florida. This center serves as a hub for technical knowledge, as well as remote condition assessment and field asset health information, in support of operations.
- Experiences from operating and maintaining power delivery assets in all NERC jurisdictions at voltages up to 500 kV, and in several jurisdictions that have transmission operation agreement Terms and Conditions (T&Cs) similar to the PJM operating agreement.
- An excellent record of transmission and substation reliability, built on robust design and O&M programs that incorporate condition assessment, diagnostics, and asset management for effective and efficient investment of resources and capital.
- Inspection and maintenance practices cover all elements of transmission line circuit maintenance and station maintenance for operating voltages between 69-500 kV.
- Central equipment SMEs based in Florida are responsible for NERC compliance and the health of facility asset groups such as transformers and protection equipment. The centralized groups of SMEs provide technical support for field staff and also manage specialized support vendors who provide resources for vegetation management and equipment failure recovery at facilities.
- Reliability Metric SMEs work within the Delivery Assurance group and are responsible for transmission and substation availability/reliability reporting for facilities across all NERC regions. This group will leverage its current role to support the proposed projects compliance with PJM procedures addressing: maintenance; outage data formatting; maintenance reporting for the past and future periods; and classifying forced outages. Any deviations from a facility availability target are assessed by members of the Technical Services group. This approach ensures that expertise in all aspects of transmission and substation equipment is adequately engaged to ensure the correct action plans quickly restore availability and equipment reliability to acceptable levels.
- Equipment SMEs in the Technical Services team are responsible for assessing maintenance practice effectiveness and introducing innovative new maintenance techniques. This capability will be leveraged for the Project to ensure compliance with PJM procedures and reviews. The team will support the preparation of the Project maintenance practices to ensure PJM grants their approval before the start of commercial operations. The team will also support any amendments to the agreed maintenance practices to ensure compliance with PJM maintenance change protocols.

[Redacted text block]

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The NextEra family of companies has inventory and spare strategies for routine maintenance requirements and loss of functionality for all its facilities. NEET MidAtlantic will have its own strategic spares covering facility equipment.

NextEra affiliates' operating procedures describe the processes for scheduling and reporting planned and unplanned transmission outages that may affect the reliability of interconnected. NextEra affiliates are familiar with major system disturbances and the procedures in place to cope with events and restore the integrity of the system to a normal state as quickly as possible.

NextEra's Compliance and Responsibility Organization (CRO) is a centralized group of compliance SMEs who manage, report and audit the NextEra affiliates Registered Entities NERC compliance programs. CRO will work with NEET MidAtlantic to establish the required agreements, processes, and procedures for assuring compliance.

NEET MidAtlantic will follow the NextEra Internal Compliance Program (ICP) to address the NERC requirements. NextEra's CRO oversees the implementation of the ICP. Compliance monitoring is accomplished by internal reviews, spot checks, investigations, along with, letters of certification, and data submittals. Internal audits are conducted to ensure NextEra affiliates are compliant in accordance with the applicable NERC Reliability Standards. NEET's existing projects have had no NERC standards violations to date. NEET MidAtlantic support personnel have recent project experience in establishing and executing TOP Reliability Standards compliance programs in ERCOT.

NEET MidAtlantic will follow NextEra's robust practice of complying with numerous requirements. NextEra's transmission businesses have well-established, reasonable practices and procedures for the operations and maintenance of its facilities, which are derived from FPL's practices for its facilities.

### NextEra's Financial Strength

NEET MidAtlantic benefits from the extensive, enterprise-wide financial resources of NextEra's affiliates. A Fortune 100 company, NextEra's year-end 2015 balance sheet included over \$82 billion of assets and \$22 billion of shareholder equity, with more than 67% of NextEra's \$17 billion in 2015 revenues derived from regulated utility sources. Consequently, NEET MidAtlantic, through its parent company, has the financial capacity to finance, develop, construct, operate, and maintain projects over the long-term.

Current and historical financial information related to NextEra, including Annual Reports and financial statements filed with the Securities and Exchange Commission can be obtained from the following:

- [Appendix 9](#) for NextEra 2013-2015 Annual Reports
- [Appendix 10](#) for NextEra 2<sup>nd</sup> Quarter 2016 Financial Statements

### NextEra Energy Capital Holdings (NEECH)

NextEra Energy Capital Holdings, Inc. (NEECH) is a wholly-owned subsidiary of NextEra, which holds ownership interests in and provides funding for NextEra's operating subsidiaries, other than FPL. NEET MidAtlantic plans to finance the project from development through operations with corporate parent funding, both equity and debt, received from NEECH. NEECH maintains a strong investment grade credit rating and has access to and regularly secures financing in public debt and equity markets on behalf of NextEra and affiliates, including NEET MidAtlantic. At some point in the future, after construction and during operation, the project could benefit from a portfolio financing of multiple assets that could be undertaken by NEET, or another NextEra affiliate. NEET's project will be supported by NEECH's approximately \$4.6 billion of net available liquidity, primarily consisting of bank revolving line of credit facilities and cash equivalents, less letters of credit issued under the credit facilities, and commercial paper outstanding and notes payable. Consequently, NEET MidAtlantic, through NextEra and its financial affiliate NEECH, has the financial capacity to finance, develop, construct, operate, and maintain projects over the long-term.

NEECH's current credit ratings are as follows:

Table 3: **NEECH's Credit Ratings as of 31<sup>st</sup> December 2015**

Company	Moody's	S&P	Fitch
NEECH	Baa1	A-	A-

As discussed previously, during development, permitting and construction, and operation, the project will be supported 100% through corporate parent funding, which will consist of both equity and debt. Therefore, ratepayers will receive the benefit of a project constructed with strong equity support, without any risk of project-level leverage. Further, corporate parent funding benefits ratepayers by avoiding unnecessary and costly third-party transaction costs and providing the flexibility to complete the Project under a range of possible scenarios (e.g., construction delays, regulatory interventions, etc.).

On or around the date of commercial operation, NEET MidAtlantic will seek to convert its short-term variable rate debt into long-term fixed rate financing.

The Project may further benefit from a portfolio financing post-construction that could include a series of multiple fixed rate debt issuances that align with the forecasted depreciable net book value of the project assets, when viewed as a diversified portfolio. Such a structure allows ratepayers to benefit from a portfolio of debt terms and rates, which minimize the overall financing cost.

NEET's affiliate, Lone Star, recently utilized a similar permanent financing structure for its recently energized transmission assets. Lone Star was able to issue its debt, excluding issuance costs, at a blended weighted average long-term cost of 3.46%, which was lower than the 3.59% weighted average cost of debt for A-rated utility debt of the same weighted average life as Lone Star debt. Additionally,



comparable transaction analysis indicated that such financing carries the lowest credit spreads of any private placement, and the lowest coupon rate for a 30-year debt issuance in recent history for a regulated utility in Texas. As a result of this financing, Lone Star has the lowest cost of debt and the lowest cost of capital of any investor-owned utility in Texas.

Another NEET affiliate, New Hampshire Transmission, LLC, owner of a controlling interest in and operator of the Seabrook Substation in New Hampshire, recently refinanced its long-term debt with NEECH. The flexible financing, approved by both state and federal regulators, provides access to commercially attractive cost debt, when needed, without incurring unnecessary or costly transaction fees.

In addition to the capital markets, NextEra often looks to the bank market for attractive financing opportunities. Banks can sometimes provide greater flexibility with respect to our financing needs, but generally speaking, bank loans are considered an equivalent source of financing and the two are used interchangeably to support the company's development pipeline. Strong demand exists from banks to lend to good quality credits with stable cash flow at attractive rates. Through NEECH, NEET has access to a balanced and well-diversified lending group that can support bank financing.

### **Commitment to Execute the Consolidated Transmission Owners Agreement**

If it is selected to be the Designated Entity, NEET MidAtlantic is prepared to execute the Consolidated Transmission Owners Agreement.

### **NextEra's Experience Responding to Contingencies**

The NextEra Corporate Emergency Management Plan (CEMP) describes the processes and procedures that guide how NextEra plans for and responds to incidents. CEMP applies to all threats or incident responses including, but not limited to: severe weather; cybersecurity; grid or supply disruptions; physical security; floods; fires; chemical spills; pandemics; civil unrest; or any other hazards that threaten NextEra systems, reputation, employees, or contractors. NEET MidAtlantic will rely upon the CEMP to respond effectively. The objectives of the CEMP are to ensure that:

- All employees have been accounted for;
- Resources will be effectively deployed from across the enterprise to respond to the incident;
- Response personnel understand the common emergency response organization and incident management practices used by NextEra;
- Response team members understand their roles and responsibilities and key processes applicable during any incident;
- There is clear, effective communication regarding the incident to both employees and the public;
- NextEra uses a "one voice" approach to communicating with all internal and external stakeholders;





- The principles of the Incident Command System (ICS) are employed, including the activation of an emergency response organization; and
- Assistance is provided to impacted employees and their families.

NEET MidAtlantic will develop an event response plan supported by a comprehensive spare strategy and emergency plans, to ensure an appropriate response to catastrophic events. NEET MidAtlantic will augment the process and strategies in the emergency plan to account for the effects of a project's unique environmental, weather and topography conditions. In particular, NEET MidAtlantic will incorporate specific weather operating plans and experiences from NextEra's operation of assets throughout North America. NEET MidAtlantic will leverage the extensive experience of NextEra affiliates, such as FPL and Lone Star, to develop NEET MidAtlantic specific plans to respond to large-scale emergencies involving project facilities. For instance, FPL's service area is uniquely susceptible to impacts of severe weather systems such as tropical storms and hurricanes, and the organization has a comprehensive plan to respond safely and as quickly as possible when the electric infrastructure is damaged by a hurricane, tropical storm, or any other severe weather event. NextEra recognizes that the severity and nature of storm damage can vary widely and accounts for the fact that power restoration will be affected by the path and intensity of the storm, the storm's impact on other utilities and how quickly additional restoration workers and supplies can reach Florida. FPL updates its storm plan every year based on lessons learned from the previous year's storms across North America. Although each project can be in a much different operating climate and geography, NextEra uses equivalent processes for organization and response to severe weather and system events in the project area. These plans are adjusted as necessary to apply to the facilities and coordinate with applicable regional emergency processes.

NextEra affiliates operate transmission facilities all over the US many in harsh environments. NextEra has amassed a vast skill-set from operating and maintaining these assets including: component end-of-life estimating and responding to the impact from severe weather events such as tropical storms, hurricanes, tornados, conductor icing, and fires. It continuously works to improve its response plans to catastrophic events, by bolstering guidelines and regularly training staff with storm drills.

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[REDACTED]

[REDACTED]

[REDACTED]

### NextEra's Experience Acquiring Rights of Way

NextEra and its subsidiaries, including NEET MidAtlantic, have significant and geographically diverse experience in acquiring ROW for energy infrastructure across North America. In constructing a transmission project, many of NextEra's business organizations, such as Development, Land Services, Law, and Environmental Services, are responsible for negotiating and acquiring the necessary land interests for a project. These professionals are active through the site selection process, and the environmental assessment phase in support of regulatory applications.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

## C. PROPOSED PROJECT CONSTRUCTABILITY INFORMATION

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### Scope of Project

[REDACTED]

### Solution to Cross-Border Issues

The Salem 345/138 kV Substation is not being proposed as a solution to Cross-Border issues.

### Interregional Cost Allocation

Evaluation for Interregional Cost Allocation is not desired.

### Coordinated Interregional Analysis

Not Applicable

### Regional and Interregional Violations and Issues

- 2016 RTEP Proposal Window #2
- Common Mode Outage Violation – Flowgate 907 – Nickel-Warren 138 kV
- N-1-1 Thermal Overload – Flowgate N2-T6 – TodHunter 345/138 kV transformer 17
- N-1-1 Thermal Overload – Flowgate N2-T7 – TodHunter 345/138 kV transformer 16
- N-1-1 Thermal Overload – Flowgate N2-T8 – TodHunter 345/138 kV transformer 17
- N-1-1 Thermal Overload – Flowgate N2-T9 – TodHunter 345/138 kV transformer 15
- N-1-1 Thermal Overload – Flowgate N2-T10 – TodHunter 345/138 kV transformer 15

### Detailed Breakdown of All Proposal Elements

#### General Description

[REDACTED]

[REDACTED]

[Redacted]

## Geographic Description

[Redacted]

## Site Description

[Redacted]

## Summary of Methods

[Redacted]

[Redacted]

[Redacted]

- Federal Emergency Management Agency (FEMA) 100-year floodplain boundaries
- U.S. Fish and Wildlife (USFWS) National Wetland Inventory (NWI) wetland polygons
- USFWS Information Planning and Conservation System (IPAC)

[Redacted]

[Redacted]

[Redacted]

- U.S. Department of Agriculture (USDA) web soil survey

[Redacted]

[Redacted]

[REDACTED]

### Potential Siting Issues Related to Environmental and Cultural Impacts

Utilizing available GIS data layers and information accessed through state agency websites, potential constraints to development as well as impacts to streams, wetland habitats, floodplains, known bald eagle nest sites, potential T&E species, and cultural resources were assessed. [REDACTED]

[REDACTED]

[REDACTED]

A summary of potential environmental and cultural resources that may be impacted by the proposed substation location and associated connecting transmission line is provided below. However, verification of actual potential impacts can only be completed through future field studies.

### Salem 345/138 kV Substation Site – Potential Impacts

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[Redacted text block]

### ROW and Land Acquisition Plan

[Redacted text block]

### Permitting Plan and Approach

[Redacted text block]

[Redacted text block]

[Redacted text block]

### Discussion of Potential Public Opposition

[Redacted text block]

[Redacted text block]

[Redacted text block]



### Physical Characteristics

[REDACTED]

All equipment will be properly grounded and mounted on cast in place concrete foundations (either pedestal or mat slabs) and fully compliant secondary containment will be provided for the transformer. The station will also include a control house with associated relay and protection equipment. See [Appendix 8](#) for preliminary substation General Arrangement and [Appendix 2A](#) for One-Line Drawings that further describe the physical characteristics.

### Maps and Supporting Diagrams

Appendix 3 previously submitted shows the aerial map of the Project, [Appendix 3A](#) contains more detailed information on potential parcels. Previously submitted Appendix 2 contains a one-line diagram of the proposed substation, and [Appendix 2A](#) contains a detailed one-line diagram. [Appendix 8](#) contains the Project General Arrangement.

### Specific Location of Interconnection with Incumbent TO Facilities

[REDACTED]

### Generation/Transmission Outages Required for Construction

NEET MidAtlantic has assumed that PJM will be able to schedule outages such that there will be no impact on NEET MidAtlantic's schedule or cost.

[REDACTED]

[REDACTED]

### Total Cost of Project and Total Cost for Each Major Component

Please see [Appendix 6](#) for the Total Project Implementation Cost.

### Identification of Construction Responsibility

[REDACTED]

[REDACTED]

[REDACTED] All other work associated with the design, supply and installation of the substation facility as indicated on the General Arrangement drawing will be performed by NEET MidAtlantic.

[REDACTED]

## D. ANALYTICAL ASSESSMENT

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NEET MidAtlantic studied the project according to various PJM RTEP analyses including:

- N-1 Contingency Analysis (Thermal and Voltage)
- N-1-1 Contingency Analysis (Thermal and Voltage)
- Generator Deliverability Analysis
- Common Mode Outage

The Project resolves the common mode outage issue for Flowgate 907 Nickel – Warren 138 kV overload and a number of N-1-1 Thermal overloads on TodHunters 345/138 kV transformers (Flowgates: N2-T6, N2-T7, N2-T8, N2-T9, and N2-T10). Additionally, the Project does not result in any additional violations on the PJM transmission system.

The complete details of NEET MidAtlantic's analytical assessment can be found in the zip file uploaded to PJM's website. As verified by emails received from PJM, the following files were submitted to PJM at approximately 10:50 am July 29, 2016:

NEET2A\_2016 Salem 345/138 kV Substation - Appendices & RTEP Template Final submitted.zip has been sent to PJM.

The zip file contained a number of documents as follows:

Name	Type	Compressed size	Password pr...	Size	Ratio	Date modified
Appendix 1 - Powerflow Results - NEET2A_2016.pdf	Adobe Acrobat Document	114 KB	No	126 KB	10%	8/2/2016 11:17 AM
Appendix 2 - SLG - NEET2A_2016.pdf	Adobe Acrobat Document	211 KB	No	276 KB	24%	8/2/2016 11:17 AM
Appendix 3 - Aerial Map - NEET2A_2016.pdf	Adobe Acrobat Document	755 KB	No	967 KB	22%	8/2/2016 11:17 AM
Appendix 4 - Contingencies - NEET2A_2016.con	CON File	2 KB	No	8 KB	87%	8/2/2016 11:17 AM
Appendix 5 - NEET2A_2016.idv	IDV File	1 KB	No	1 KB	45%	8/2/2016 11:17 AM
NEET2A_2016-RTEP Proposal Template 2016.xlsx	Microsoft Excel Worksheet	26 KB	No	51 KB	50%	8/2/2016 11:17 AM

NEET MidAtlantic has through the July 29, 2016 proposal submittal, provided PJM with the following:

- Detailed analysis report on proposed solutions,
- Equipment parameters and assumptions
- All necessary PSS/E idev files as appropriate data to model upgrade
- Proposal Template spreadsheet (in excel format) including Flowgates the project is addressing, general scope, detailed solution components, and total cost
- All supporting documentation required by PJM to perform verification review, including:
- Modifications to existing contingencies and new contingencies necessary to properly model the proposed project



As requested by PJM, an updated RTEP Proposal Template (in excel format) which includes both an overall project cost and detailed cost of each component is being submitted with this Greenfield RTEP Proposal document (Redacted and Un-redacted).



## E. COST

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NEET MidAtlantic estimates that the total project will cost approximately \$17.1 million (in 2016 dollars), of which approximately \$16.4 million is estimated to be designated to NEET MidAtlantic, and approximately \$0.7 million is estimated to be performed by the incumbent transmission owner. NEET MidAtlantic further estimates that the total project will cost approximately \$18.0 million (In-Service Year dollars), of which approximately \$17.2 million is estimated to be designated to NEET MidAtlantic, and approximately \$0.8 million is estimated to be performed by the incumbent transmission owner.

A more detailed cost estimate breakdown and explanation of NEET MidAtlantic's cost cap is included in [Appendix 6](#) of this application, including the details of the cost commitment being offered by NEET MidAtlantic.



## F. SCHEDULE

### Detailed Conceptual Schedule

NEET MidAtlantic conducted scheduling meetings with the project development team, including NextEra internal support teams (environmental and permitting, finance, engineering and construction, legal, and regulatory), as well as external consultants to develop a preliminary schedule to support this Proposal. Input from multiple sources was integrated with logic ties to ensure proper sequencing and duration of activities. This preliminary schedule has been developed using Primavera 6 software, NEET Atlantic's primary scheduling software.

NEET MidAtlantic will coordinate and conduct focused workshops to detail all permitting, pre-construction compliance tasks, environmental restrictions, construction clearance limitations, engineering, procurement, and construction activities. Full development of the schedule will require NEET MidAtlantic to conduct several schedule meetings and reviews early in the Project. NEET MidAtlantic will integrate schedules from all contractors and participating entities into the master schedule. As part of schedule development, NEET MidAtlantic will conduct several reviews to verify and confirm schedule tasks and logic.

NEET MidAtlantic will hold weekly schedule meetings with all participants throughout the development of the Project to update the schedule, review the three-week look ahead, and address critical path items. Any slip in the schedule will require the participating engineer, consultant, or contractor to develop a mitigation plan to recover the schedule. Please see [Appendix 7](#) for detailed project schedule.

Table 4: **Project Milestones**

Schedule Milestones	Date
Project Award	[REDACTED]
Permitting Complete (including federal/state/local)	[REDACTED]
Site Control Obtain	[REDACTED]
Engineering and Design Complete	[REDACTED]
Material Procurement	[REDACTED]
Start Construction/Activities	[REDACTED] 8
Start Testing and Commissioning	[REDACTED]
Project COD	[REDACTED]



## G. OPERATIONS/MAINTENANCE

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### Overview Plan for Operating and Maintaining the Transmission Facilities

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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