

**THE STATE OF NEW HAMPSHIRE
BEFORE THE
SITE EVALUATION COMMITTEE
DOCKET NO. 2015-04**

PRE-FILED DIRECT TESTIMONY OF DAVID L. PLANTE

**APPLICATION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
D/B/A EVERSOURCE ENERGY
FOR A CERTIFICATE OF SITE AND FACILITY FOR CONSTRUCTION OF A
NEW 115 kV TRANSMISSION LINE**

THE SEACOAST RELIABILITY PROJECT

April 12, 2016

1 **Qualifications and Purpose of Testimony**

2 **Q. Please state your name, title, and business address.**

3 A. My name is David L. Plante. I am the Manager of the Project Management
4 Department for Public Service Company of New Hampshire d/b/a Eversource Energy
5 (“PSNH”). My business address is 13 Legends Drive, Hooksett, NH.

6 **Q. Briefly summarize your educational background and work
7 experience.**

8 A. I hold a Bachelor of Science degree in Civil Engineering from the
9 University of New Hampshire and am a licensed professional engineer in the State of
10 New Hampshire. I also hold a Masters Certificate in Project Management from George
11 Washington University, School of Business and Public Management. I have more than 25
12 years of professional experience in the electric transmission and distribution industry that
13 includes the design, management and construction of high voltage transmission line and
14 substation projects. I joined PSNH in 1988 and served in the positions of Staff Engineer
15 and Senior Engineer through 2002. I have served in the position of Lead Project Manager
16 – Transmission Projects from 2002 until organizational re-alignment in late 2015
17 resulting in a title change and am responsible for the execution of the Eversource
18 Transmission capital program in NH, including many high profile, complex transmission
19 line and substation projects. *See* Attachment A for my resume.

20 **Q. Please describe your relevant experience, other projects you have
21 worked on, and your role in those projects.**

22 A. Over the course of my career at PSNH, I have been involved with the
23 design, management and construction of transmission projects. In my current and
24 previous roles leading the Transmission Project Management Department, I have been
25 responsible for the execution of the transmission capital program, consisting of over \$700
26 million of transmission assets in NH over the past 10 years.

27 In addition to managing the Project Management Department and managing the
28 overall capital program for the transmission business in NH, I also have direct project
29 management responsibilities for a significant number of projects. Please see Attachment
30 A for my resume providing a list of projects that I have been involved with while
31 working at PSNH.

1 **Q. Please describe the right-of-way (ROW) and any widening that will be**
2 **required before Project construction can commence.**

3 A. For a detailed description of the ROW and any tree clearing required for
4 the project, please see section 301.03 (g)(3) and (g)(9) of the Application. The Project
5 will be constructed primarily within existing PSNH electric utility corridor. A majority of
6 the existing corridor is currently occupied by one or two 34.5 kV distribution circuits
7 owned and operated by PSNH. Through Newington, some portions of the corridor are
8 occupied by existing 115 kV and 345 kV transmission circuits. The line exits Madbury
9 Substation and enters the Pan Am railroad corridor for one span, then crosses onto PSNH
10 property. From this point to Madbury Road in Durham, the proposed centerline is
11 primarily located on existing and newly acquired PSNH property and easement adjacent
12 to the Pan Am railroad corridor. This section will require clearing a width of
13 approximately 75 feet from the west edge of the RR corridor.

14 After crossing Madbury Road and continuing to the University of New
15 Hampshire Campus in Durham, the proposed centerline is located within new ROW that
16 has been contracted to be acquired by PSNH, adjacent to the Pan Am railway. A current
17 license exists with the railroad for the existing distribution circuit within the corridor. A
18 new license has been obtained from the railroad to allow for construction of the 115 kV
19 circuit. PSNH has an agreement to obtain additional permanent easement rights 25' in
20 width from UNH and an additional 25' of temporary easement rights for underground
21 construction up to the new transition structure near the intersection of Colovos and
22 Waterworks Road. At the transition structure, the Project continues overhead in existing
23 ROW owned either in fee or under permanent easement by PSNH to Packers Falls
24 Substation.

25 The ROW then proceeds easterly in existing ROW for approximately four miles
26 to the western shore of Little Bay. The line will occupy an existing cable corridor as it
27 crosses Little Bay. Once reaching the eastern shore, the cable landing will occur on
28 property where PSNH has contracted to obtain a new easement. It will then continue
29 underground within the public roadway through Gundalow Landing to a point on the east
30 side of Little Bay Road where it again re-enters existing PSNH ROW. The line follows

1 existing PSNH ROW easements of varying width or fee property for the remaining
2 distance to Portsmouth Substation.

3 Since April 7, 2006, Eversource transmission ROW vegetation management
4 practices have been required to comply with mandatory standards adopted by the North
5 American Electric Reliability Corporation (NERC) following the August 14, 2003
6 Northeast blackout. These vegetation management practices are designed to allow the
7 reliable operation of the transmission facilities by preventing the growth of trees or
8 invasive vegetation that would otherwise interfere with the transmission facilities or
9 hinder access along the ROWs. As a result, the vegetation within the managed portions of
10 the ROWs typically consists of shrubs, herbaceous species, and other low-growing
11 species.

12 The existing ROW is currently cleared, in most locations, to approximately 20
13 feet from each edge. However, to accommodate the construction and subsequent reliable
14 operation of the Project, additional vegetation removal will be required to clear the full
15 width of the ROW. Vegetation along the corridor will be removed where necessary to
16 allow for construction, to provide and maintain access to structures and, as needed, along
17 the corridor to provide safe distances between the conductors and woody vegetation at all
18 times. However, the amount of and type of vegetation clearing required at any given
19 location will depend on factors such as the existing width of the managed ROW,
20 vegetation communities present (e.g., forested, herbaceous, scrub-shrub, open field), the
21 type of the new transmission structures, configuration and spacing of the transmission
22 line conductors, transmission line span lengths, and terrain. A detailed description of
23 required vegetation/tree clearing is presented in the SEC application, section 301.03
24 (g)(3). *See* Environmental Maps, Appendix 2, and Section Drawings contained in the
25 Engineering Design Drawings, Appendix 5, showing clearing limits.

26 **Q. Please describe how equipment and materials will be safely moved to**
27 **the site.**

28 A. As described in more detail in Section 301.08 of the Application, materials will
29 generally be delivered to marshalling yards. Most major substation materials will be
30 delivered directly to the respective substation from the various manufacturers. Most
31 major line materials will be delivered by the various manufacturers to one of two pre-

1 selected marshalling yards in Lee or Portsmouth. The construction contractor may select
2 additional material lay down sites in the Project vicinity. The manufacturers are
3 responsible for any permits, escorts or traffic control required to move their product over
4 public roadways. Other materials will be delivered to the Transmission Storeroom at 13
5 Legends Drive in Hooksett where they will be staged in box trailers. These trailers will
6 later be transported to the lay down area by conventional tractor trailer trucks.

7 The line contractor will be responsible for safely deploying line materials to the
8 individual Project sites. Of particular interest due to their size, movement of pole
9 structures will require careful planning to avoid traffic congestion and use of appropriate
10 precautions. Any vehicles or loads that are oversize (length, width or weight) will require
11 escorts and/or permits. The contractor is responsible for obtaining these permits and for
12 the safe transport and handling of material. In addition, construction equipment will
13 travel over public roads. Off road equipment will be delivered by trailer to roadside sites
14 and travel into the Project ROW.

15 Appropriate traffic control measures consisting of sign packages, flaggers and/or
16 police details in accordance with the requirements of MUTCD will be required if public
17 roadways are expected to be encumbered during delivery of materials to roadside sites.

18 **Q. Please describe the size and location of the construction marshalling**
19 **yards, laydown areas and work pads.**

20 A. Marshalling yards will be identified by either the Applicant or the selected
21 contractors prior to the start of construction. Marshalling yards will be utilized for receipt
22 of delivered material and equipment storage, work force parking, and clerical space for
23 field personnel. The marshalling yard locations will be chosen because they will have
24 little to no negative impact to environmental or cultural resources. Selection of
25 marshalling yard locations involves identifying convenient access to major transportation
26 routes to cut down on traffic impacts during the course of material delivery but also
27 within close proximity to the Project corridor to allow for the efficient daily mobilization
28 of manpower and equipment to the corridor. The marshalling yards will be established
29 in disturbed/industrial areas with existing access, a gravel or stone surface, and will not
30 require tree clearing or any impacts to wetland or other resource areas. Additional

1 marshalling yards may be proposed by the construction contractor during the construction
2 process. These will be established disturbed/developed areas.

3 Lay down areas may be located within the Project corridor and are utilized for the
4 temporary staging of materials and construction matting prior to installation. Potential
5 laydown areas will generally be previously disturbed and have exposed soils or modified
6 vegetation such as a maintained field. If minor grading is required or if soil disturbance
7 occurs in any proposed laydown areas, the laydown area will be restored to pre-existing
8 topography and seeded, as appropriate.

9 As part of this Application, and to the extent any other environmental approvals
10 are necessary, the Applicants request that the SEC delegate authority to NHDES to issue
11 approvals for marshalling yards and laydown areas.

12 Work pads will be located along the Project corridor. Upland work pads will be
13 created at structure locations by grading or adding gravel or crushed stone to provide a
14 level work surface for construction equipment and crews. Once construction is complete,
15 the work pad locations will be stabilized as required and mulched to allow vegetation to
16 re-establish. In wetlands, these work pads will be created with timber mats. Such
17 temporary timber mat access roads will be removed following completion of construction
18 and if necessary, areas will be restored to re-establish pre-existing topography and
19 hydrology.

20 Work pads for installation of structures requiring cast in place concrete
21 foundations will be generally 100 feet by 100 feet and utilized for the staging of materials
22 and equipment to install the proposed structures. Work pads for the direct embedded
23 structures will generally be 64 feet by 80 feet. Minor grading may be necessary in these
24 work areas to create a level surface for equipment to set up. In the majority of cases, the
25 location of work areas with respect to the structure is centered upon the structure. In areas
26 where environmentally sensitive areas are adjacent to structure locations, work pads will
27 be shifted to minimize potential impacts. In locations where it is impractical to shift work
28 pads out of environmentally sensitive areas, timber matting will be utilized. It is company
29 practice to restore work pads at the conclusion of construction.

30 Wire pulling work areas typically extend up to 300 feet ahead and back of pulling
31 structure locations and are up to 100 feet in width. Most pull sites are located near angle,

1 deadend, and transition structures. Wire pulling sites are generally defined as rectangular
2 areas ahead and back of proposed structures. These sites are shown as enlarged work
3 pads and are not called out separately on the Project Plans. Utilizing work pads for wire
4 pulling results in less overall pad area on the corridor. Pulling equipment will generally
5 be set up at a 1:3 distance or greater from the highest wire attachment point on the pulling
6 structure. Minor grading may be required to facilitate equipment set up and where
7 environmentally sensitive areas are located, equipment set-ups will be adjusted to
8 minimize impacts.

9 **Q. Where will you locate construction access points during construction**
10 **and what work must be completed for vehicles and other pieces of large equipment**
11 **to access the sites?**

12 A. Access points are typically from Town or State roads. Roads and parking lots
13 within the UNH campus will also be utilized. Most access points are located where the
14 corridor intersects the public way. Several off-corridor access roads are proposed as well. All
15 proposed access points and access roads are shown on the Environmental Maps, Appendix 2.

16 Access roads are required within the corridor to provide the ability to construct,
17 inspect, and maintain the proposed transmission line facilities. For the proposed Project,
18 existing access roads will require maintenance or upgrading to support the proposed
19 construction activities. For example, placement of clean gravel or trap rock, and minor
20 grading, may be necessary to stabilize and level the roads for construction vehicles. It will be
21 necessary to establish new access roads in certain locations within the corridor to facilitate
22 new construction. In several locations, off-ROW access roads will be used to access the
23 Project.

24 Access across wetlands and streams, where upland access is not available, will be
25 accomplished by the temporary placement of timber mats. Timber mats are bolted together
26 and placed over wetland areas so as to distribute equipment loads evenly and minimize
27 disturbance to the wetland and soil substrates. Such temporary timber mat access roads will
28 be removed following completion of construction and if necessary, areas will be restored to
29 re-establish pre-existing topography and hydrology.

1 Any access road improvements and/or maintenance will be carried out in compliance
2 with the conditions and approvals of the appropriate regulatory agencies. Exposed soils on
3 access roads will be wetted and stabilized as necessary to suppress dust generation.

4 Crushed stone aprons will be used at access road entrances to public roadways to
5 clean the tires of construction vehicles and minimize the migration of soils off-site.

6 The construction contractor will be allowed to propose additional on-corridor and off-
7 corridor access roads during the construction phase of the Project. Any additional access
8 roads will require SEC approval in accordance with the delegation request contained in
9 301.03 (d)(2) and (g)(9).

10 **Q. What special considerations were given to Project construction and**
11 **operation around Portsmouth International Airport at Pease?**

12 A. Recognizing the proximity of the existing ROW to the airport, Eversource
13 has solicited the services of a Federal Aviation Administration (FAA) consultant (Capitol
14 Airspace Group) to review the applicable FAA clearance requirements associated with
15 the Project. During the preliminary engineering design phase, Capitol Airspace Group
16 issued a report providing general guidance on maximum allowable structure and
17 equipment heights. Structure heights were designed to fall below FAA allowable heights.
18 To validate that the design meets FAA criteria, the conceptual layout with the double
19 circuit, monopole structures was previously submitted to the FAA for review. Each
20 structure location within the FAA's jurisdiction was submitted to their obstruction
21 evaluation group. The FAA issued a Determination of No Hazard letters for each
22 structure.

23 Each of the structures contained within the current design has a lower structure
24 height than what was initially submitted to the FAA. The Project will resubmit the new
25 Project design to the FAA with the recent structure modifications and expects to receive
26 updated Determination of No Hazard letters. These letters will confirm that the structure
27 heights are acceptable and will not negatively impact air traffic in the area. Neither
28 construction equipment nor structures will be allowed to exceed the permitted heights
29 above grade/elevation.

1 **Construction Management**

2 **Q. Please provide a general overview of how you will manage the**
3 **construction of this Project.**

4 A. The Project Manager (PM) for this Project will have the general day-to-
5 day responsibility to coordinate with and monitor the construction contractor, who will be
6 selected through a competitive bid process at a later date, and to ensure compliance with
7 the Project requirements. Other major project management activities include; confirming
8 that the contractors' operations comply with the contract documents, monitoring
9 construction activities for schedule compliance, review of daily construction reports for
10 completeness and accuracy, conduct and document weekly construction status update
11 meetings with contractor, review and address quality control concerns, participate in the
12 outage coordination process and management of the construction budget . The Project
13 Manager, in close coordination with the Construction Manager (CM) are responsible for
14 promoting a culture of safety and environmental stewardship for the project, reviewing
15 contractor's quality control plan and monitoring and reporting safety concerns.

16 The CM will report to the PM and is responsible for planning and coordinating all
17 construction activity as well as providing the field observations and monitoring of the
18 construction contractor's operations and compliance with the project Health and Safety
19 Plan (HASP). The CM, the local safety representative as well as the contractor's safety
20 representative are responsible for making routine work site visits, observing work
21 activities, and reviewing the contractor's safety plans. They will be responsible for
22 recording pertinent safety information in daily reports, attending weekly construction
23 status update meetings and monitoring the contractor's compliance with the project safety
24 plan.

25 Safety representatives will report to the PM and are responsible for providing the
26 field observations and monitoring of the construction contractor's operations and
27 compliance with the HASP. Safety representatives are responsible for making routine
28 work site visits and observing and reviewing the contractor's safety plans. The safety
29 representative is responsible for recording pertinent safety information in daily reports,
30 attending weekly construction status update meetings and monitoring the contractor's

1 compliance with the HASP. In the event of a safety incident or accident, the safety
2 representative oversees development of incident reports and investigations.

3 Environmental inspectors report to the PM and are responsible for providing the
4 field observations and monitoring the contractors construction activities for compliance
5 with permit requirements. Other major activities include: attend weekly construction
6 status meetings, serve as point of contact for agency interface, conduct daily inspections,
7 and provide daily field reports. In the event of an environmental incident, the
8 environmental representative oversees development of incident reports and
9 investigations.

10 Financial analysts provide support to the PM and review financial data such as
11 budgets, forecasts, variances, invoices, and actual project spending.

12 Schedulers provide support to the PM and have responsibilities to create, update
13 and report percent complete or variances for the integrated project schedule while
14 monitoring planned outages and in-service dates.

15 The community outreach representative is responsible for coordinating with the
16 Project Management team and the CM for community relations. They maintain
17 communications with stakeholder groups, such as municipalities, residents, businesses,
18 community-based organizations and special interest groups to keep them informed of
19 construction activities and address any concerns that may occur. *See Appendix 20*
20 *(Organizational Chart for Construction and Operation).*

21 **Q. Please describe how you developed the construction plan and**
22 **schedule.**

23 A. The construction schedule for the Project is developed by establishing key
24 milestones and in-service dates. An iterative process is then used to further develop the
25 schedule. A construction sequence plan for the Project is developed by incorporating the
26 vast experience from similar projects and the varied expertise of the Project team to
27 establish activity durations and the logical path to meet the milestones established for this
28 project. Consideration is given to the issues and risks that will be encountered including;
29 time of year restrictions for both environmental and transmission system requirements,
30 public relations and real estate agreements, long lead material procurements and permit
31 requirements. Using this information, a summary level schedule is developed placing

1 each activity in a progression to achieve the final in-service dates. The summary level
2 schedule will be included in all contractor agreements with the requirement that the
3 contractor(s) responsible for the construction of the major construction groups are to
4 develop, implement and update (regularly) a detailed construction schedule. This
5 schedule is typically used for tracking completed work and forecasting future work
6 activities and confirming key milestones will be met. This typically includes major work
7 categories such as foundations, cable trench and conduits, structural steel, poles,
8 conductor and will factor in major project milestones. The Project is not complete or
9 ready for energization until all components have been completed, including the 115 kV
10 overhead transmission, submarine/underground transmission, and substation terminal
11 additions at Madbury and Portsmouth.

12 The construction plan for the Project is developed using the summary schedule to
13 form the basis of the construction services and material supply of the substation and
14 transmission line work. A construction planning team will be involved in the further
15 refinement of the construction sequencing including final commissioning of the modified
16 stations and transmission line. There are numerous constraints within the transmission
17 system which require consideration. The factors that are considered in the development
18 of a construction plan include transmission and distribution line outage constraints,
19 seasonal constraints, maintaining system reliability and constructability. The construction
20 planning team includes members from the Project team, representatives from Eversource
21 system planning, system operations and engineering, The PM, the CM, outage
22 coordinator and the contractor(s) management team.

23 With the design layout, the environmental and construction groups can accurately
24 plan for access and construction to minimize impacts. Engineering drawings of the route
25 include plan and profile views for the entire alignment. These plan and profiles show the
26 location of the structures in relation to constraints such as roads, wetlands, edge of ROW,
27 and adjacent lines.

1 **Q. Will construction occur in more than one location simultaneously?**

2 **Please describe how you plan to manage what will be akin to multiple project sites.**

3 A. Yes, construction will be ongoing simultaneously at multiple sites. By its
4 very nature, transmission line construction is a serial effort, being accomplished by a
5 variety of different resources.

6 The major overhead line construction elements include ROW clearing,
7 construction access and installation of erosion and sediment control measures, civil works
8 (digging holes, installing casings, constructing foundations, etc.), material spotting to
9 construction sites, structure framing, structure erection and, lastly, conductor/shield wire
10 installation followed by ROW restoration.

11 All or most of these activities are required at each structure site and are performed
12 by different construction resources. In order to be efficient and cost effective, the line
13 contractor will need to schedule these resources sequentially to maintain productivity and
14 efficiency while maintaining compliance with the requirements of the Certificate.

15 The submarine cable installation and underground cable installation will take
16 place as essentially standalone projects, executed by contractors with specialized
17 techniques and skills for installing these types of cables. It is likely that other line
18 construction activities will be ongoing during this cable installation.

19 To support the construction activities, the Project Management team includes the
20 PM, the CM, safety specialist, environmental inspector and community outreach
21 representative. The field staff responsible for oversight and monitoring the work includes
22 construction superintendents, construction inspectors, environmental inspectors, safety
23 specialists and community outreach operatives. The number of field support people
24 working at any one time is scalable and will be dependent on the activities ongoing at that
25 time. The number of field staff at a given site will vary depending on the type of work,
26 but will be adequate to provide sufficient coverage.

27 **Q. Please elaborate on the training programs and any related project**
28 **oversight associated with this Project.**

29 A. The Applicant's employees and contractors will be held to high
30 expectations regarding safety, environmental and community awareness and training.
31 Prior to commencing construction of the Project, training sessions will be held by the

1 Applicant, which necessarily include training for the contractors. The training sessions
2 will review the Project specific documents, which will include a review of all relevant
3 environmental, safety and compliance requirements and information as it pertains to the
4 upcoming construction. In addition, training sessions will be held by the Applicant,
5 which will brief employees and contractors on appropriate conduct on site during
6 construction and compliance with outreach protocols for communicating with the public.

7 The Applicant and their respective contractors will be required to follow all safety
8 regulations as outlined by state, federal, and company policies. The Applicant's rules and
9 policies outline specific items such as emergency response, medical treatment, daily
10 documented job briefs, construction site inspections and training records for the
11 contractor's employees and/or sub-contractors. The rules and policies walk the contractor
12 through all these requirements as well as outline the detailed items that must be followed
13 while working on the Project, such as reporting of all safety and environmental incidents,
14 fall protection, personal grounding, personal protective equipment (PPE), and substation
15 awareness and access training.

16 Further training must be completed by the contractor and its employees to cover
17 utility-specific topics, including, but not limited to: CPR/First Aid, Switching and
18 Tagging, Lockout Tag Out, Hazard Communication, Defensive Driving, Excavation and
19 Trenching Safety, Confined Space Electric Hazard Awareness, Safe Driving and Vehicle,
20 Operation, Ethical Business Behaviors, Permission to Work, Dig Safe requirements,
21 understanding HASPs, Insulate and Isolating techniques, Incident Reporting and Analysis
22 requirements, written Job Briefs, Load Securement, Safety Observation, Hoisting and
23 Rigging, Trenching and Shoring, and working near Railroads, Highways and Gas lines.

24 **Q. Please describe any project labor agreements that will be associated**
25 **with this project.**

26 A. The selected contractor will be required to sign onto a project labor
27 agreement (PLA). The PLA has been negotiated by Eversource with the local
28 International Brotherhood of Electrical (IBEW) unions. This agreement provides for the
29 use of local (NH based) union labor to the extent possible, with certain activities that
30 allow for local non-union participation in the project.

1 **Q. How will the Project comply with all of the requirements of the**
2 **Certificate of Site and Facility when implementing the construction plan, including,**
3 **the conditions set under each State and federal permit?**

4 A. Historically, it has been PSNH's practice to prepare a permit compliance
5 plan for major projects prior to commencement of construction activities along with
6 execution of a Construction Authorization Notice, which requires the Contractor and
7 other key project field personnel to acknowledge receipt and understanding of all permits,
8 conditions and restrictions. The permit compliance plan is reviewed with the construction
9 team prior to start of work and during construction and is used extensively by contractors
10 and the environmental inspectors to ensure overall compliance. It is our intent to use a
11 similar process for the Project as well.

12 Moreover, in preparation for construction, the Project Management team will
13 create contractual agreements with each contractor. These contracts will include flow
14 down clauses, which assign the terms and conditions and Certificate requirements to the
15 contractors. In turn, each contractor will be required to develop and submit compliance
16 plans, which summarize the environmental features and other regulatory / siting
17 requirements relevant to construction activities at a particular construction location or a
18 ROW segment, reviews the work activities / sequence of work to be performed by the
19 Contractor at the site; and details the procedures that the Contractor will implement to
20 comply with the specified requirements during the performance of specific construction
21 tasks. This compliance tool is reviewed and approved by the Project Management team,
22 as well as by field construction personnel, including Project environmental inspectors.

23 Each construction work location will also be staffed with a hierarchy of leadership
24 and oversight with the appropriate expertise and experience relative to the work that is
25 being performed at that location. This team includes the CM or his designee and
26 inspectors which will provide coordination and field oversight to the contractor during
27 the planning and execution of the work to confirm compliance with the safety program,
28 regulatory requirements and project specifications. The Project Management team and
29 contractor will hold weekly construction progress meetings to review construction
30 activities including safety, environmental, community relations, schedule, and review the
31 upcoming work plan to identify and resolve concerns which may impede progress. All

1 project personnel including the contractor's staff that is physically assigned to a field
2 work location will be required to attend a Project Orientation session presented by the
3 management and environmental team, prior to commencing work.

4 A Quality Assurance/Quality Control plan will be implemented in the
5 construction contract agreements. The construction contractors will be required to submit
6 a quality assurance plan for approval by the Project Management team. Upon approval,
7 the QA plan will be implemented by the contractor and used as the basis for oversight by
8 the project field inspectors. If an issue or deficiency is identified, the Project
9 Management team will issue the contractor a non-conformance notice. In response, the
10 contractor is required to provide a corrective action plan and address the concern.

11 **Q. Please describe your plan for interacting with local officials and**
12 **residents during the construction process and addressing any concerns they may**
13 **have.**

14 A. Consistent with PSNH's approach to stakeholder communications during
15 the siting and permitting phase, the company will pursue transparent, proactive dialogue
16 with stakeholders during the construction phase.

17 Company officials will communicate with municipal officials and other affected
18 stakeholders prior to and during construction, and through completion of the Project to
19 address their concerns and answer questions. Among the communications methods we
20 will employ to stakeholders are the following:

21 • ***Face-to-Face Pre Construction Briefings***

22 We will engage in proactive pre-construction briefings with municipalities,
23 affected property owners, and other stakeholder groups to outline the construction
24 process, key milestones and expected timelines.

25 • ***E-mail Updates***

26 Another proactive tool that will be offered to provide up-to-date information on
27 Project activities is regular email updates for municipal officials, property owners or
28 other stakeholders who request this update. Information may include an up-to-date status
29 report on the overall construction progress, among other updates.

1 • ***Project Website***

2 The Project website will provide an overview of the Project, route maps, updates,
3 and contact information.

4 • ***Project Hotline***

5 A dedicated, toll-free phone line will be available for the general public to ask
6 questions, voice concerns or express compliments about the Project. The Project's
7 commitment is to respond to all requests within one business day. All phone calls and
8 their resolution are tracked.

9 • ***Direct Mail and/or Door Hangers***

10 Pamphlets, letters or postcards will be periodically mailed or hand-delivered to
11 abutters to keep them apprised of milestone construction activities.

12 • ***News Releases / Media Advisories***

13 News releases or media advisories will be issued as various Project milestones are
14 met. All news releases will be posted on the Eversource corporate website.

15 • ***Project Identification***

16 When working in the public domain, Project workers and their
17 vehicles/equipment will display proper markings to be identifiable to property owners,
18 the public and motorists at job sites.

19 **Q. How will you protect both the safety of the public and the safety of the**
20 **workers during the construction process?**

21 A. Safety is the highest priority of the Project team. The team will develop a
22 Project safety plan which will be incorporated into all contractor agreements associated
23 with this project. The contractors working are required to comply with applicable
24 regulations and standards (for example OSHA and DigSafe). Typical daily activities of
25 the Contractor will include conducting morning crew meetings to discuss activities and
26 potential hazards (tailboards). Additionally, the contractor will perform and document
27 site inspections, and equipment inspections. The contractors will be required to complete
28 safety forms such as activity hazard analysis (AHA) and pre-task analysis (PTA) for all
29 work activities daily.

1 The safety of the public is of paramount importance. Exposure of the public to the
2 Project is primarily related to use of public roadways and adjacent locations by
3 construction personnel and equipment. Safe operation of motor vehicles is an absolute
4 necessity to protect the safety of the public. The Project will not interfere with the safe,
5 free, and convenient use for public travel of the locally-maintained highways. The
6 contractor, as well as PSNH community outreach representatives, will reach out to
7 neighbors to inform them of upcoming construction activity to ensure their safety.
8 Appropriate signage, cones, barricades and traffic control will be employed to ensure
9 public safety.

10 In the event of an incident or near miss occurrence, the contractor is required to
11 submit an Incident Investigation Report detailing the specific information of the incident.
12 Serious incidents resulting in an OSHA recordable injury will require additional
13 investigation, review and root cause analysis to be performed followed by corrective
14 measures as deemed necessary to prevent future occurrences.

15 The Project team will utilize qualified management and staff, with experience on
16 similar projects to perform contractor inspections, audits and oversight throughout the
17 construction process. As described above, training programs will be required for the field
18 staff as discussed above. The Project team will use a safety observation process to
19 identify and address field safety trends occurring on the Project. This information will be
20 communicated through Project wide safety bulletins and formal notices to the contractors
21 as a preventative measure. In addition, the Project team will hold weekly safety meetings
22 (part of weekly Project meetings) to review and discuss the safety observations in the
23 field.

24 **Q. What security measures will you utilize during the construction**
25 **process to protect workers, equipment, and material?**

26 A. The contractor is responsible for planning and executing their construction
27 activities in such a fashion as to ensure security of workers, equipment and materials
28 during construction. Generally, a security firm is employed to provide overnight security
29 to the laydown areas to discourage theft and vandalism. Security cameras are also
30 employed at substations. Construction equipment will likely be left in the ROW
31 overnight. It is usually moved to a nearby road crossing for visibility to local police

1 patrols to avoid vandalism to the equipment. If it is determined that there is a security
2 concern for any of the workers on the project, Eversource security will work with local
3 law enforcement to prepare a plan for personnel security.

4 **Q. After the project is constructed, how will the project operate?**

5 A. Once the project is complete, it will become part of the interconnected
6 transmission network. Operation of the transmission network in New England is the
7 responsibility of the Independent System Operator-New England (ISO-NE). The Electric
8 System Control Center (ESCC) at Eversource-NH operates the transmission system under
9 the guidance of ISO-NE. Eversource and ISO-NE work together to ensure that the system
10 is operated in a safe, reliable, and cost effective manner, while complying with all
11 regulatory requirements. Both entities have operators on duty twenty four hours per day,
12 7 days per week.

13 **Q. Please describe the maintenance and repair issues that are likely to be**
14 **associated with this project, and who will be responsible for those.**

15 A. This Project is proposed to be constructed in a typical fashion for 115 kV
16 transmission lines in the northeast. This type of construction typically requires little
17 routine maintenance. Some of the more common maintenance activities include replacing
18 damaged insulator discs, and repair or replacement of damaged guy wires. If wood
19 structures are used, occasionally a pole or cross-arm may require replacement due to
20 decay, insect infestation or woodpecker damage. It is more likely that a structure would
21 need to be relocated due to a proposed private or commercial land development project.

22 For portions of the route where there are already transmission lines, operations
23 and maintenance will not change substantially. Along the entire route, maintenance will
24 be performed in accordance with the Applicants' system maintenance policies and
25 procedures, including: best practices for preventive maintenance; compliance with
26 regulatory and power coordination authority standards and guidelines; maintenance
27 practices that are practical and cost effective; maintenance practices that monitor
28 equipment operating conditions and provide trend data; and written descriptions of the
29 maintenance program.

30 In addition to the actions taken above, certain specific requirements for high
31 voltage transmission lines exist, including: aerial patrols for inspection of structures,

1 conductors, and hardware; foot patrols to visually inspect the facilities; aerial
2 thermographic inspections; patrol of lines after every interruption if the specific cause
3 cannot be identified; aerial patrol of lines for vegetation management inspection; and
4 recurring vegetation maintenance within cleared areas.

5 **Q. Please describe the maintenance issues associated with the ROW.**

6 A. For the portions of the route where there are already Distribution and or
7 Transmission lines, operations, maintenance and repair will not change substantially from
8 what occurs today. Along the entire route, maintenance of the existing lines, rebuilt lines
9 and the new Project will be performed in accordance with Eversource system
10 maintenance policies and procedures. In addition to the overall construction and
11 maintenance issues associated with the high voltage transmission line, PSNH will take
12 certain additional actions to maintain the right-of-way.

13 Specifically, maintenance activities in the corridor, depending on the natural
14 features and accessibility of the corridor, can be carried out on foot, line truck, track
15 mounted vehicle, all-terrain vehicle, snowmobile or helicopter. Any of these activities
16 can have an impact on the environment if not performed in a sensitive manner. All
17 vegetation management and line maintenance activities associated with the Project's new
18 lines will be performed in accordance with company vegetation management guidelines
19 and practices. PSNH will provide a field manual summarizing the vegetation
20 management guidelines and practices to all contractors performing maintenance work in
21 the corridor.

22 The management of vegetation on power line rights-of-way is critical to the safe
23 and reliable operation of the electric transmission system. In New England, the natural
24 succession of vegetation is for grassland to grow to shrubland and eventually turn to
25 forest. When trees grow or fall into power line rights-of-way they can cause an outage
26 that can affect wide geographic areas and compromise the safety and reliability of the
27 transmission system. Therefore, PSNH manages vegetation in our rights-of-way to
28 maintain what is called an early successional environment. Our objective is to maintain
29 stable low-growing grass, shrub, and wildflower communities that are compatible with
30 the safe and reliable operation of the transmission system, while providing the greatest
31 potential for wildlife habitat. This is achieved through our cyclical selective brush

1 maintenance and tree trimming programs. Selective brush maintenance entails the
2 targeted removal of non-compatible tall-growing tree species. In New Hampshire, PSNH
3 currently maintains brush by means of selective mechanical mowing and hand cutting on
4 a three or four year cycle depending on the voltage class of the transmission line. To
5 maintain safe horizontal clearances to transmission lines, trees on the edge of the corridor
6 are trimmed or removed on a cyclical or as needed basis. In addition, hazard trees (trees
7 with defects such as rot, splits, lean, etc., that make them prone to fail and potentially
8 contact transmission lines) are also removed on an as needed basis to minimize the
9 potential for tree caused outages.

10 **Q. Please describe how PSNH has historically handled equipment**
11 **failures and how they propose to continue to handle such occurrences in the future.**

12 A. As a long standing public utility engaged in the transmission of electricity,
13 Eversource has significant experience with the installation, maintenance and repair of the
14 various elements of the transmission system. Eversource Transmission Asset Strategy has
15 developed a collection of strategy documents to guide the business on application and
16 management of the various major components of the transmission system. These
17 documents include data about the population and vintage of various critical equipment
18 types along with historical data on failure modes and expected life span and are a
19 valuable reference for engineering and maintenance personnel. Eversource also has a
20 comprehensive preventive maintenance program designed to ensure maximum service
21 life of our transmission system while maximizing reliability. Transmission system
22 operations and maintenance is performed by an operations and maintenance group consisting
23 of professionals skilled in the relevant activities.

24 The workforce is scalable in the event that more personnel or equipment are
25 required for any particular purpose or event. Resources from the Massachusetts and
26 Connecticut are available to support the NH workforce. In addition, Eversource has
27 business relationships with a wide range of contractors who are also able to support
28 maintenance activities if necessary. Eversource maintains a transmission warehouse in
29 Hooksett, NH that is set up to carry the specific materials that are required to maintain the
30 transmission system, in quantities to cover foreseeable needs. Eversource has sourcing

1 arrangements with a great deal of material suppliers that allows for the timely
2 procurement of materials.

3 Equipment failures will be handled in the same manner they are handled today.
4 When a transmission line outage occurs, the Electric System Control Center (ESCC) in
5 conjunction with the field personnel determine the most efficient way to quickly and
6 safely restore customers and system reliability. The line is patrolled by foot or by
7 vehicles depending on ground conditions as soon as it is safe to do so. Once the cause of
8 an interruption is found, crews are dispatched to implement restoration.

9 **Q. Please describe methods that may be needed to maintain the**
10 **underwater cable system.**

11 A. Any future repair to the cable system would require that the cable be cut
12 on the bottom of the bay and brought up to a surface barge for repair. The repair would
13 consist of splicing in a new piece of cable to replace the damaged section. After the
14 repairs are completed, the final repaired cable system would have additional length
15 associated with the length of cable required to go from the bay floor up to the surface
16 twice. This requires additional spacing between the adjoining cables to allow the
17 resulting slack to be laid out on the bay floor without crossing over one of the existing
18 cables. Based on the water depth and anticipated field conditions for Little Bay, a
19 horizontal separation of thirty feet has been chosen.

20 **Q. Please describe all measures that will be employed to ensure the**
21 **project operates safely.**

22 A. During Project operations, PSNH will follow Eversource Energy policies
23 and procedures, including a well-established set of transmission procedures. These
24 policies and procedures necessarily include all Occupational Safety and Health
25 Administration (“OSHA”) regulations, all State and federal regulations and other
26 guidance documents. The Project will be maintained in accordance with good utility
27 practice and in compliance with all applicable regulatory requirements, including
28 applicable North American Electric Reliability Corporation (“NERC”) and Northeast
29 Power Coordinating Counsel (“NPCC”) reliability standards, and to comply with all
30 applicable operating instructions and manufacturers' warranties.

1 The ESCC employs a sophisticated Energy Management System (“EMS”) to
2 monitor and control the operation of the transmission system. The EMS has the ability to
3 continuously monitor the status of the system and quickly reroute power flows to ensure
4 that under all conditions and scenarios, all elements of the system are operating within
5 their established thermal limits. This will ensure that transmission line conductors will
6 never sag below their minimum heights above ground or other features as required by
7 applicable codes and standards.

8 Please refer to previous responses regarding line maintenance and ROW
9 maintenance practices which are also integral to safe operation of the Project.

10 **Q. Please summarize why PSNH believes that it has the technical and**
11 **managerial capability to construct and operate the project in accordance with the**
12 **terms and conditions for a Certificate of Site and Facility that this Committee may**
13 **issue.**

14 A. PSNH and its parent company, Eversource, have decades of experience
15 constructing, operating, and maintaining transmission facilities in the State of New
16 Hampshire. Eversource owns and operates approximately 4,270 miles of transmission
17 lines in the Northeast and serves approximately 3.6 million electric and natural gas
18 customers in the region. The Eversource Transmission Business is a procedure-driven
19 organization that has been structured for the specific purpose of constructing, operating
20 and maintaining transmission assets in the states of CT, MA and NH. Eversource
21 Transmission utilizes procedures for all key functions including Project Management,
22 Engineering, Maintenance and Operations, and Quality Control, to name a few.
23 Eversource has a significant ongoing transmission capital construction program in New
24 Hampshire, of which this Project is only a small part. Over the past decade, Eversource
25 has a proven track record of constructing many complex transmission projects.

26 PSNH has an extensive staff of in-house siting, engineering, environmental, legal,
27 project management and construction professionals, skilled in the development of large
28 transmission projects. Each company has numerous relationships with many major
29 engineering firms, environmental and other related consultants and contractors which we
30 will rely on to execute projects in a safe, efficient and cost effective manner.

1 I also rely on the pre-filed testimony of James J. Jiottis (technical design of the
2 Project) and Anthony Troy Godfrey (technical expertise, permitting and construction of
3 the underwater portion of the Project).

4 Based upon the testimony of my colleagues and my prior discussion, PSNH has
5 the requisite technical and managerial capability to design, construct and operate the
6 Project.

7 **Q. Does this conclude your testimony?**

8 A. Yes, it does.