

**STATE OF NEW HAMPSHIRE  
BEFORE THE  
PUBLIC UTILITIES COMMISSION**

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New England Power Company d/b/a National Grid

**Verified Petition for License to Construct and Maintain Electric Lines and Shield Wire  
Over and Across State Waters and State Land  
in the Town of Windham, New Hampshire**

New England Power Company d/b/a National Grid (“NEP”), a public utility engaged in the transmission of electricity in the State of New Hampshire, hereby petitions the Public Utilities Commission (the “Commission”) pursuant to RSA 371:17 for a license to construct and maintain electric transmission lines and associated shield wires above and across (1) Beaver Brook, a non-navigable waterway located in Windham, New Hampshire, and (2) a parcel of land owned by the State of New Hampshire Department of Transportation (“NH DOT”) also located in Windham, New Hampshire. In support of its petition, NEP states as follows:

1. NEP and Public Service Company of New Hampshire d/b/a Eversource Energy (“PSNH”) have submitted a joint application to the New Hampshire Site Evaluation Committee (“SEC”) for a Certificate of Site and Facility for authority to construct and operate a new 345 kV transmission line (denominated the 3124 Line) from PSNH’s Scobie Pond Substation in Londonderry, New Hampshire to the Massachusetts state border (the “Project”).

2. The Project is a component of the larger Merrimack Valley Reliability Project (“MVRP”), which includes the Massachusetts portion of the 3124 Line that continues from the state border to National Grid’s Tewksbury #22A substation in Tewksbury as well as associated substation upgrades. The Independent System Operator – New England (“ISO-NE”) determined

that the MVRP is needed to address reliability concerns in the Southern New Hampshire and northern Massachusetts region. ISO-NE concluded that, based on forecasted load growth, aging infrastructure and market forces, additional transmission capacity is needed to support the reliable delivery of electric power to meet the region's current demand and future increased demand.

3. The total length of the MVRP will be approximately 24.4 miles. In New Hampshire, the Project will run approximately 17.9 miles within existing NEP and PSNH power line rights-of-way ("ROWS"). These existing ROWs traverse portions of the Towns of Londonderry, Hudson, Windham and Pelham. Attachment 1 to this Petition is a figure showing the general route of the Project superimposed over a map of the relevant area.

4. The portion of the ROW at issue here currently contains three NEP-owned transmission lines: the N-214 (230 kV); the Y-151 (115 kV); and the O-215 (230 kV), from east to west, respectively. Each of the three existing lines currently crosses Beaver Brook. The Project will involve relocating the Y-151 to the western edge of the ROW and constructing the new 3124 Line in its place.

5. The relocated Y-151 Line will cross Beaver Brook and the new 3124 Line will cross both Beaver Brook and the NH DOT parcel. Installation of the cables across Beaver Brook will not require any dredging or use of heavy equipment in the brook, and at no time will the flow of the brook be diverted or altered for the Project. Beaver Brook is not designated as a navigable waterway under the NH Programmatic General Permit. NEP has applied to the New Hampshire Department of Environmental Services for a Shoreland Permit for the Beaver Brook crossings.

6. The Project has been designed in accordance with the 2012 National Electrical Safety Code (“NESC”) C2-202 to ensure sufficient structure strength and the required minimum clearances above water and ground levels. These clearances are described below and depicted on the associated plans attached hereto.

Beaver Brook – Y-151 Crossing

7. As noted, the centerline of the Y-151 line will be relocated to 28.5 feet from the western edge of the ROW. The length of the span crossing Beaver Brook will be approximately 703 feet and the conductor and shield wire will be supported by Structures 82 and 83, which will be approximately 85-foot and 74.5-foot tall steel monopoles with davit arms, respectively. A cross-section, aerial view and pole details are included in the plan entitled “Merrimack Valley Reliability Project 115kV Y151 Transmission Line Beaver Brook Crossing Span 82-83,” last dated 05-08-15 and provided as Attachment 2 to this Petition.

8. At the location of this crossing, the main stem of Beaver Brook channel is approximately 55-feet wide within the ROW and Structures 82 and 83 will not be located within the banks of Beaver Brook. The FEMA base flood elevation at the crossing is approximately 177 feet according to the Flood Insurance Rate Map (PANEL 0536E), dated May 17, 2005, and no structure will be located within the 100-year floodplain of Beaver Brook.

9. The closest distance from the proposed Y-151 line Structure 82 to the top of bank is approximately 206 feet and is located on the opposite side of Haverhill Road from the brook. Proposed Structure 83 is approximately 442 feet from the top of bank. Existing Y-151 Structures 81 and 82 will be removed.

10. The Y-151 line will consist of three “Drake” 795 kcmil 26/7 ACSS HS285 conductors that will have a minimum clearance of 25 feet above the water level of Beaver Brook.

A single OPGW shield wire will be installed to continue service for existing communications and to provide lightening protection a minimum of seven feet above the conductors, meaning that it will at all times have a greater clearance above Beaver Brook than the conductor.

Beaver Brook – 3124 Crossing

11. As noted, the proposed new 345 kV 3124 Line will be located in the same centerline alignment as the existing Y-151 line and, therefore, the 3124 Line will cross Beaver Brook at the same location as the existing Y-151 line. This crossing will be approximately 919 feet long and supported by Structures 144 and 145 on either side. Structure 144 will be an approximately 75-foot tall weathered steel H-frame dead-end structure, and Structure 145 will be an approximately 70-foot-tall weathered steel H-frame suspension structure with cross bracing. A cross-section, aerial view and pole details are included in the plan entitled “Merrimack Valley Reliability Project 345kV 3124 Transmission Line Beaver Brook Crossing Span 144-145”, last dated 05-08-15, and provided as Attachment 3 to this Petition.

12. The closest distance from the proposed 3124 Line Structure 144 to the top of bank is approximately 257 feet with Haverhill Road (Route 111) located between the structure and the brook. The closest distance from the proposed 3124 Line Structure 145 to the top of bank is approximately 488 feet.

13. The 3124 Line will consist of two “Falcon” 1590 kcmil 54/19 ACSR conductors per phase that will have a minimum clearance of 30 feet above the water level of Beaver Brook. A single OPGW shield wire will be installed to allow for communications between terminal substations and to provide lightening protection a minimum of 12 feet above the conductors, meaning that it will at all times have a greater clearance above Beaver Brook than the conductor. A second 3/8” EHS Steel shield wire will also serve as lightning protection on the line.

NH DOT-owned Parcel – 3124 Line

14. The Project will also involve the installation of the new 345 kV 3124 Line over an NH DOT-owned parcel (identified as Lot 14-A-300A). This is a 0.33-acre vacant parcel located immediately adjacent to Route 111 (Haverhill Road). NEP and PSNH have consulted with NH DOT and will obtain all necessary permits for work on and over Route 111. A cross-section, aerial view and pole details are included in the plan entitled “Merrimack Valley Reliability Project Line 3124 345kV Transmission NH DOT Crossing Permit Drawing Route 111 Crossing” dated 6-16-15, and provided as Attachment 4 to this Petition.

15. The Y-151 line currently crosses the NH DOT-owned parcel. As noted above, the Y-151 will be relocated and the 3124 Line will be constructed in the same centerline alignment as the existing the Y-151. Accordingly, the 3124 Line will cross the NH DOT parcel at the same location as the existing Y-151 line that it will replace.

16. This crossing will be approximately 919 feet long and supported by Structures 144 and 145 on either side of the crossing. Structure 144 will be located on the opposite side of the 150-foot wide Route 111 from the NH DOT parcel and Structure 145 will be located on the opposite side of Beaver Brook from the NH DOT parcel. Structure 144 will be a 75-foot tall weathered steel H-frame dead-end structure, and Structure 145 will be a 70-foot-tall weathered steel H-frame suspension structure with cross bracing. No supporting structures or other facilities will be located on the subject parcel.

17. The 3124 line will consist of two “Falcon” 1590 kcmil 54/19 ACSR conductors per phase that will exceed the minimum required clearance of 24.8 feet above ground level under all operating conditions. The design clearance of the span is 30 feet above the paved surface under all operating conditions. A single OPGW shield wire will be installed to allow for

communications between terminal substations and to provide lightening protection a minimum of 12 feet above the conductors, meaning that it will at all times have a greater clearance above ground than the conductor. A second 3/8" EHS steel shield wire will also serve as lightning protection on the line.

18. NEP owns permanent easements for the entire width of the ROW at the crossing locations. The crossings will occur within the limits of those easements. Thus, all of the property rights necessary to construct and maintain the transmission lines above Beaver Brook and the NH DOT property have been obtained, and no taking of private property or acquisition of other property rights is required for this purpose.

19. NEP submits that the rights granted by the license sought in this petition may be exercised by NEP without affecting the rights of the public to use the waters or the property of the State, and the use and enjoyment by the public of Beaver Brook and the NH DOT property will not be diminished.

WHEREFORE, NEP respectfully requests that the Commission:

A. Find that the licenses petitioned for herein may be exercised without substantially affecting the public rights in the public waters and public lands of the State of New Hampshire which are the subject of this petition;

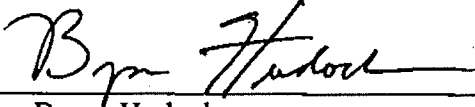
B. Grant NEP a license to cross Beaver Brook and the NH DOT-owned parcel in the locations and for the purposes described above; and

C. Grant such other and further relief as the Commission may determine to be just and reasonable and consistent with the public interest.

Respectfully submitted,

NEW ENGLAND POWER COMPANY  
d/b/a NATIONAL GRID

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