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THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE D/B/A
EVERSOURCE ENERGY FOR LICENSES TO CONSTRUCT AND MAINTAIN ELECTRIC
LINES AND OPTICAL GROUND WIRE OVER AND ACROSS PUBLIC LANDS OWNED
BY THE STATE OF NEW HAMPSHIRE IN THE TOWN OF LONDONDERRY, NEW
HAMPSHIRE

TO THE PUBLIC UTILITIES COMMISSION:

Public Service Company of New Hampshire d/b/a Eversource Energy (“PSNH”), a public utility engaged in the generation, transmission, distribution and sale of electricity in the State of New Hampshire, hereby petitions the Public Utilities Commission (“Commission”), pursuant to RSA 371:17 for licenses to construct and maintain a 345 kV electric transmission line and optical ground wire cable at three locations over and across public lands owned by the State of New Hampshire in the Town of Londonderry, New Hampshire. In support of its petition, PSNH states as follows:

1. In order to meet the reasonable requirements of service to the public, PSNH has determined that it is necessary to construct a new 345 kV transmission line to be known as the “3124 Line”. The 3124 Line is a project, referred to as the “Merrimack Valley Reliability Project”, or “MVRP”, being jointly proposed by PSNH and New England Power Company d/b/a National Grid (“NEP”). The 3124 Line will extend from NEP’s Tewksbury 22A Substation in Tewksbury, Massachusetts to PSNH’s Scobie Pond 345 kV Substation in Londonderry, New Hampshire. The portion of MVRP, referred to herein as the “Project”, located within New Hampshire is approximately 17.9 miles in length and extends from the Massachusetts border in Pelham, New Hampshire to the Scobie Pond 345 kV Substation.

2. The MVRP is a new 345 kV transmission line between southern New Hampshire and northeastern Massachusetts that resolves regional reliability problems previously identified by ISO-NE in the Greater Boston Area Updated Transmission Needs Assessment issued in 2014. The MVRP is specifically designed to address reliability needs associated with the transmission tie lines connecting northeastern Massachusetts and southern New Hampshire. The existing transmission system cannot under certain operation conditions reliably serve southern New Hampshire and northeastern Massachusetts either at peak or off-peak load.

3. The proposed route for the 3124 Line includes crossings of properties now owned by the State of New Hampshire (hereinafter referred to as the “public lands” or “public land”) at three locations in the Town of Londonderry. The first aerial crossing involves the 3124 Line span between Structure 277 and 278 that crosses public land located west of the Interstate 93 right-of-way (“ROW”). The second crossing involves the placement of Structure 278 on public lands located east of the Interstate 93 ROW and an aerial crossing of those public lands by portions of the 3124 Line span between Structures 277 and 278 and Structures 278 and 279. The third aerial crossing involves the 3124 Line span between Structures 285 and 286 that crosses over a former railroad corridor now owned by the State of New Hampshire. The crossings are listed in Table 1 attached to this Petition.

4. At each of these crossings, PSNH intends to install three twin bundled overhead phase conductors and two optical ground wire (“OPGW”) static wires. The energized conductors will be twin bundled 1590 kcmil Aluminum Conductor Steel Reinforced (“ACSR”) “Falcon” (54/19) conductor. Due to the bundled nature of the energized conductors, 18 inch spacers will be utilized in the crossing spans and in the jumper loops to keep each of the conductors associated with a single phase the appropriate distance apart. In order to improve and

enhance the reliability and capacity of the communications system used in its electric system operations, and thereby meet the reasonable requirements of service to the public, PSNH will also install and maintain OPGW cable on its new overhead 3124 Line structures, which will cross the same public lands at the same locations as the 3124 overhead crossings. In addition to communications capabilities, the OPGW will provide lightning protection over the conductors in the overhead configurations. OPGW static wires will be a minimum of 48 count OPGW.

5. The general location of the 3124 Line crossings that are the subject of this Petition are shown on the U.S. Geologic Survey location plans attached and marked as Exhibit 1 to Appendix A, Exhibit 3 to Appendix A, and Exhibit 4 to Appendix B of this Petition, respectively.

6. The clearances of conductors to public lands for each of the proposed crossings are provided in Table 2 and on the plan and profile drawings attached as Exhibit 2 to Appendix A and Exhibit 5 to Appendix B of this Petition.

7. The required technical information provided in this Petition is based on the 2012 National Electrical Safety Code (“NESC”) C2-2012 which meets and/or exceeds the requirements of the 2007 NESC. The proposed crossings have been designed and will be constructed, maintained and operated by PSNH in accordance with the applicable requirements of the NESC.

For the Span between Structure 277 - 278 (Appendix A)

8. The 3124 Line aerially crosses public lands located west of Interstate 93 for a length of 70 feet within a total span of 548 feet. No crossing structures are to be located on the public land located west of Interstate 93 ROW. Structure 278 will be located on the public land located east of the Interstate 93 ROW. In addition, the span between Structure 277 and 278

includes an aerial crossing of public lands located east of the Interstate 93 ROW for a length of 21 feet within the total span of 548 feet. The design and detail of the proposed construction of the 3124 Line crossing at this location is shown on the attached plan and profile drawing entitled "Line 3124 345 kV Transmission, NHDOT Crossing License Drawing, Merrimack Valley Reliability Project" dated November 21, 2014, revised June 15, 2015 marked as Exhibit 2 to Appendix A.

9. PSNH owns the land in fee west of the public land crossing that is west of the Interstate 93 ROW and holds a 535-foot wide permanent easement across State-owned lands. The aerial crossing will be constructed within the limits of PSNH's permanent easement. Structure 277 will be constructed on PSNH-owned land.

10. The minimum required clearances above the ground surface are stipulated in the NESC, specifically, Table 232-1. The NESC requires 24.7 feet of minimum design clearance above the ground surface to allow for vehicular access below a 345 kV transmission line. A number of weather conditions were analyzed and the one that produced the maximum conductor sag for the NESC Heavy Loading weather case was the 285°F condition maximum operating temperature (phase wires). The twin-bundled conductor cables between Structures 277 and 278 were designed to have a minimum clearance of 54 feet above the ground surface under the 285°F condition maximum operating temperature, which exceeds the minimum clearance requirement of 24.7 feet. Due to the fact that the static wires are located above the phase wires, their clearances to the ground surface will always exceed the minimum required NESC distance. The location, design and construction of the proposed phase wire crossings and associated structures are shown on Exhibit 2 attached to and made part of the attached Appendix A.

For the Span between 278 – 279 (Appendix A)

11. The 3124 Line aerially crosses the public lands located east of the Interstate 93 ROW for a length of 451 feet within a total span of 458 feet. Structure 278 will be located on the public land located east of the Interstate 93 ROW. In addition, the span between Structure 277 and 278 includes an aerial crossing of public lands located east of the Interstate 93 ROW for a length of 21 feet within the total span of 548 feet. The design and detail of the proposed construction of the 3124 Line crossing at this location is shown on the attached plan and profile drawing entitled “Line 3124 345 kV Transmission, NHDOT Crossing License Drawing, Merrimack Valley Reliability Project” dated November 21, 2014, revised June 15, 2015 marked as Exhibit 2 to Appendix A.

12. PSNH owns the land in fee east of the public land crossing that is east of the Interstate 93 ROW and holds a 535-foot wide permanent easement across the public land in this location. The aerial crossing will be constructed within the limits of PSNH’s permanent easement. Structure 279 will be constructed on PSNH-owned land.

13. Structure 278 will be steel with a weathering finish, and will likely utilize a direct embed foundation. For all direct embed foundations the steel poles will be placed within corrugated steel culverts then backfilled with select backfill and compacted in lifts. The use of alternate foundation types may become necessary depending upon soil conditions. Alternatives include, but are not limited to, concrete caisson and helical/battered pile foundations.

14. The minimum required clearances above the ground surface are stipulated in the NESC, specifically, Table 232-1. The NESC requires 24.7 feet of minimum design clearance above the ground surface to allow for vehicular access below a 345 kV transmission line. A number of weather conditions were analyzed and the one that produced the maximum conductor

sag for the NESC Heavy Loading weather case was the 285°F condition maximum operating temperature (phase wires). The twin-bundled conductor cables between Structures 278 and 279 were designed to have a minimum clearance of 56 feet above the ground surface under the 285°F condition maximum operating temperature, which exceeds the minimum clearance requirement of 24.7 feet. Due to the fact that the static wires are located above the phase wires, their clearances to the ground surface will always exceed the minimum required NESC distance. The location, design and construction of the proposed phase wire crossings and associated structures are shown on Exhibit 2 attached to and made part of the attached Appendix A.

For the Span between Structures 285 - 286 (Appendix B)

15. The 3124 Line crosses one former railroad corridor now owned by the State of New Hampshire, and administered by the New Hampshire Department of Transportation (“NHDOT”). The 3124 Line aerially crosses the former railroad corridor for a length of 82.5 feet within a total span of 719 feet. Structures 285 and Structure 286 are not located on public land. The design and detail of the proposed construction of the 3124 Line crossing at this location is shown on the attached plan and profile drawing entitled “Line 3124 345 kV Transmission, NHDOT Crossing License Drawing, Merrimack Valley Reliability Project” dated November 21, 2014, revised June 15, 2015 marked as Exhibit 5 to Appendix B.

16. PSNH owns the land in fee east and west of the former railroad crossing and holds a 535-foot wide permanent easement across the public land in this location. The aerial crossing will be constructed within the limits of PSNH’s permanent easement. Structures 285 and 286 will be constructed on PSNH-owned land.

17. The minimum required clearances above the ground surface are stipulated in the NESC, specifically, Table 232-1. The NESC requires 32.7 feet of minimum design clearance

above the ground surface for a railroad below a 345 kV transmission line. A number of weather conditions were analyzed and the one that produced the maximum conductor sag for the NESC Heavy Loading weather case was the 285°F condition maximum operating temperature (phase wires). The twin-bundled conductor cables between Structures 285 and 286 were designed to have a minimum clearance of 39.9 feet above the ground surface under the 285°F condition maximum operating temperature, which exceeds the minimum clearance requirement of 32.7 feet. Due to the fact that the static wires are located above the phase wires, their clearances to the ground surface will always exceed the minimum required NESC distance. The location, design and construction of the proposed phase wire crossings and associated structures are shown on Exhibit 5 attached to and made part of the attached Appendix B.

18. PSNH submits that the licenses petitioned for herein may be exercised by PSNH without affecting the rights of the public on the public lands which are the subject of this Petition. Minimum safe line clearances above affected public lands will be maintained at all times and the use and enjoyment by the public of said lands will not be diminished in any material respect as a result of the overhead line and cable crossings. All of the property rights necessary to construct and maintain the crossings have been obtained, and therefore no other acquisition of property rights is required for this purpose.

19. A wetland permit from the New Hampshire Department of Environmental Services (“NHDES”) and the U.S. Army Corps of Engineers (“USACE”) is required for the installation of Structure 286 and for access during construction. The appropriate wetland permits will be applied for and obtained by PSNH prior to the installation of any new structures that will impact wetlands, in conjunction with PSNH’s siting application.

20. Aerial crossings of Interstate 93 and the railroad corridor are required. The appropriate NHDOT permission agreements will be applied for and obtained by PSNH prior to the installation of any new structures that will impact NHDOT jurisdictional areas, in conjunction with PSNH's siting application.

21. Project Structures 277, 278, 279, 285 and 286 will need an air obstruction determination from the Federal Aviation Administration ("FAA") under Federal Aviation Regulation Part 77.9(b). Determinations will be requested and appropriate measures will be taken by PSNH prior to the installation of any new structures that will impact FAA jurisdictional areas.

WHEREFORE, PSNH 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 lands of the State of New Hampshire which are the subject of this Petition;

B. Grant PSNH a license to construct and maintain a 345 kV electric transmission line and OPGW shield wire over and across the public lands of the State of New Hampshire as specified in the Petition; and

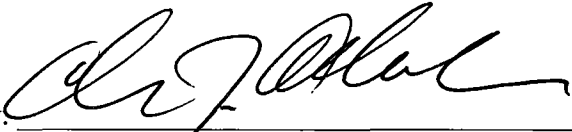
C. Grant such other and further relief as the Commission may determine to be just and reasonable and consistent with the public interest.

Respectfully submitted,

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
d/b/a Eversource Energy

By its Attorney,

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By: 

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