THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE FOR A LICENSE TO CONSTRUCT AND MAINTAIN ELECTRIC LINES AND FIBER OPTIC CABLE OVER AND ACROSS THE COCHECO RIVER IN THE CITY OF ROCHESTER, NEW HAMPSHIRE.

TO THE PUBLIC UTILITIES COMMISSION:

Public Service Company of New Hampshire ("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 a license to construct and maintain electric lines and fiber optic cable at one location over and across the public waters of the Cocheco River in the City of Rochester, New Hampshire, and in support of its petition states as follows:

1. In order to meet the reasonable requirements of service to the public, PSNH has previously constructed and currently operates and maintains two 34.5 kV lines, line 386A and line 386, in the Rochester, New Hampshire area. Line 386A runs eastward in PSNH right of way from PSNH's Rochester Substation in Rochester, crosses over the Cocheco River, and taps line 386 near Sandstone Lane in Rochester. At this tap location, line 386 runs south to PSNH's Portland Street Substation in Rochester and north to PSNH's North Rochester Substation in Milton, New Hampshire. Lines 386A and 386 are an integral part of the PSNH electrical distribution system. The 386A line crossing of the Cocheco River has been previously licensed by the Commission under Order No. 24,491, in Docket DE 03-220, dated March 9, 2004.[1]

2. Currently, the electrical system operation requirements in the greater Rochester and Seacoast area are approaching the system's limits, with load growth expected to increase by 3% annually primarily from additional industrial and commercial loads. In order to address potential electric system reliability issues that will result from this projected growth, PSNH intends to construct a new 115kV line (line Y170) in the existing 386A and 386 rights of way, from Rochester to Milton. This new line, in conjunction with the construction of two new substations[2], will alleviate potential

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[1] Although originally identified as the 362 line in Order No. 24,491, PSNH has since re-designated the 362 line as the 386A line.

[2] Additional transformation capacity is also needed in order to accommodate the future load. To meet this requirement, a new substation (to be named the Tasker Farm Substation) is proposed to be constructed in Milton, near the site of PSNH's existing North Rochester Substation. The new Tasker Farm Substation will contain 115kV to 34.5kV transformation capacity that is capable of handling the anticipated loads. In addition, a new switch yard, Eastport Substation, is being constructed next to PSNH's existing Rochester Substation in Rochester. Eastport Substation will provide switching capability on the 115kV system to allow reliable operation of the system. The proposed Y170 line will connect these two new

overloads on the existing distribution system and allow for future commercial and industrial growth in the greater Rochester and seacoast area of New Hampshire.

3. The new Y170 line will run from the new Eastport Substation in Rochester through the existing 386A right of way corridor, crossing over the Cocheco River, to the 386A/386 tap point, and then will run through the northern portion of the 386 right of way corridor to the proposed Tasker Farm Substation in Milton. The Y170 line, as presently proposed, will cross the public waters of the Cocheco River, in Rochester, in the location of the present 386A line crossing. To maintain required clearances, the 386A line will be re-built at this crossing and will be double circuited overhead with the new Y170 line.[3]

4. 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 an optical ground wire, known as OPGW cable, on the new Y-170 line structures. The new OPGW cable will also cross the Cocheco River, at the same location as the double-circuited Y-170 and 386A line crossings. In addition to improved communication, the OPGW will provide lightning protection over the conductors.

5. The necessary construction of the Y170 line, and rebuild of the 386A line, will require that the lines and associated water crossing be built within existing PSNH right-of-way. Since the new Y170 line is planned to follow the existing 386A centerline, the existing 386A line pole structures will be replaced with new double circuit single pole structures designed to handle the increased loads of supporting both the 115 kV Y170 line, and the 34.5 kV 386A line. The Y170 line crossing will be built with 795 ACSS 26/7 conductor, and the 386A line crossing will be built with 477 ACSR 26/7 conductor. Y170 will support an optical ground wire (OPGW) for its entirety which will function as a shield wire at the location of this crossing. The 386A line will also contain a 4/0 ACSR 6/1 neutral conductor at the location of this crossing

5. As stated above, building the Y170 line and rebuilding the 386A line will require construction of new overhead wire and cable crossings of the Cocheco River, in a double circuit configuration. The location maps, design and proposed construction plan and profile drawings, and required clearance calculations for each of the new line crossings are attached to this petition as Appendix A.

6. The required technical information provided in this petition is based on the 2012 National Electrical Safety Code (NESC) C2-2012, which meets or exceeds

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substations and will alleviate the potential overloads on the existing distribution system and allow for future growth in the greater Rochester and Seacoast area of New Hampshire. The required in-service date for The asker Farm Substation is April, 2014. In order to provide a power feed to this substation, the new Y170 line will have a required in-service date of April, 2014, with a proposed construction start date of February, 2013.

[3] Another existing 34.5 kV line, the PSNH 340 line, crosses the Cocheco River in the same right of way as the 386A, parallel to and southerly of the 386A crossing, and will be unaffected by this project.

requirements of the NESC C2-2002 required by the New Hampshire Code of Administrative Rules (Puc 306.01.b.1).

7. The Cocheco River will be spanned using a laminated wood and a steel structure. The structure on the eastern side of the crossing will be a deadend, and the structure on the western side of the crossing will be a tangent suspension. Detail design specifications for each of these structure types are attached to Appendix A of this petition as Figures 1 and 2. As shown on Figure 1, the phase wires have an approximate separation at the structure of 12 feet vertically and approximately 15 feet horizontally. The OPGW cable located in the static wire position is carried on the structure by a support bracket approximately 9 inches down from the top of the structure. The neutral conductor is carried below the phase wires on a support bracket 52 feet below the top of the structure. As shown on Figure 2, the phase wires have an approximate separation at the structure of 11 feet vertically and 14 feet horizontally. The static wire is carried on the structure by a support bracket approximately 9 inches down from the top of the structure. The neutral conductor is carried below the phase wires on a support bracket 43 feet, 6 inches below the top of the structure.

8. Flood water elevations for these crossings were based on information contained in flood insurance rate map number 33017C0203D, Panel 203 of 405, Effective May 17, 2005 obtained from FEMA. Table 232-1 of the NESC states that the minimum clearance over a water body is based on a 10-yr flood elevation. For the purpose of the design of the crossings, the 100-yr flood elevation was used. It should be noted that the 100-year elevations would be well above the 10-year flood elevation.

9. Based on Table 232-1 of the NESC, for open supply conductors 750 V to 22 kV to ground, the minimum clearance to the water surface during normal flood level (100-yr flood, or as assumed, for the purpose of this petition) is 28.5 feet (for waters 20-200 acres). NESC Rule 232.C.1.a states that an additional clearance of 1.6 feet or [(69.7 kV-22 kV)x 0.4] is needed for 115 kV, which brings the total required minimum clearance to 30.1 feet. For overhead shield/surge protection wires and neutral conductors that meet NESC Rule 250.C.1, the minimum clearance to the water surface at the normal flood level is 25.5 feet (for waters 20-200 acres). As the static wires are located above the phase wires at all crossings, this NESC minimum clearance requirement will always be met. Based on Table 232-1 of the NESC, for open supply conductors 750 V to 22 kV to ground, the minimum clearance to roads subject to truck traffic is 18.5 feet. With the additional 1.6' of clearance required for 115 kV, the total required clearance is 20.1 feet. Neutral conductors meeting NESC Rule 230E1 have a minimum clearance of 15.5 feet to road subject to truck traffic.

10. A total of three phase wires and one OPGW cable will span the water crossing for the Y-170 line. A total of three phase wires and one neutral wire will span the water crossing for the 386A line. All three 795 kcm ACSS 26/7 phase conductors, all three 477 kcm ACSR 26/7 phase conductors, shield wire and the neutral wire will be sagged using the NESC Heavy Loading (0 degrees F, 4 pounds per square foot wind loading, ½-inch radial ice) sag charts upon installation in the field. The 795 kcm ACSS

26/7 conductors will be sagged using a maximum tension of 7,000 pounds (unless stated otherwise), the 477 kcm ACSR 26/7 conductors will be sagged using a maximum tension of 5,000 pounds (unless stated otherwise), the shield wire will be sagged using a maximum tension of approximately 5,300 pounds and the neutral wire will be sagged using a maximum tension of 2,500 pounds. The sags and clearances to the water surface for each of the proposed crossings are provided in the attached Appendix A.

11. The new water crossing structures will be set within the protected shoreland of the Cocheco River as defined by RSA 383-B. Installation of the new structures within the protected shoreland was approved by the NH Department of Environmental Services (NHDES) on September 7, 2012 in Shoreland File #2012-02463. In addition, a Standard Dredge and Fill permit as defined by RSA 482-A is required by NHDES for temporary impacts to wetlands that will result from access to the new water crossing structure locations. This permit application was filed on September 9, 2012 and is currently under technical review in wetland permit file #2012-02452. The appropriate NHDES wetland permit approval will be obtained by PSNH prior to installation of any of the new structures associated with the crossing at this location in Rochester.

12. The proposed crossings have been designed and will be constructed, maintained and operated by PSNH in accordance with the applicable requirements of the NESC.

13. PSNH owns a permanent 135 foot wide easement for its lines and facilities on both sides of the Cocheco River at the proposed crossing location. Each of the crossings will be constructed within the limits of those easements.

14. PSNH submits that the licenses petitioned for herein may be exercised without substantially affecting the rights of the public in the public waters listed in this petition. Minimum safe line clearances above all water surfaces and affected shorelines will be maintained at all times. The use and enjoyment by the public will not be diminished in any material respect as a result of the overhead line and cable crossings.

WHEREFORE, PSNH respectfully requests that the Commission:

a. Find that the license petitioned for herein may be exercised without substantially affecting the public rights in the public waters which are the subject of this petition;

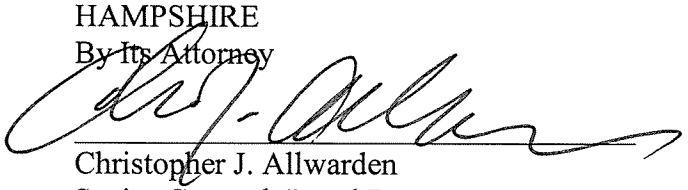
b. Grant PSNH licenses to construct and maintain electric lines and fiber optic cable over and across the public waters as specified in the petition; and

c. Issue an Order Nisi and orders for its publication.

Dated at Manchester this 30th day of November, 2012.

Respectfully submitted,

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
By Its Attorney



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