

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: October 14, 2015

AT (OFFICE): NHPUC

FROM: Robert Wyatt *RTW*
Assistant Director – Safety Division

SUBJECT: Docket No. DE 15-272 PSNH d/b/a Eversource Energy
Petition for a License to Construct and Maintain Electric Lines Over
and Across the Merrimack River in the Towns of Merrimack and
Litchfield, New Hampshire
Staff Recommendation

TO: Debra Howland, Executive Director
Randall Knepper, Director, Safety Division
Thomas Frantz, Director, Electric Division
Leszek Stachow, Assistant Director, Electric Division
Michael Sheehan, Staff Attorney

The Safety Division's review of the above petition consisted of the following elements:

- Petition contents and history;
- Applicable State Statute;
- Review of the existing crossing(s) already licensed by the PUC;
- Review of land ownership of existing pole structures;
- Review of NESC code requirements as described in Puc 300;
- Review of public need and public impact, including applicability of other State regulations; and
- Conclusions and Recommendations.

1. Petition contents and history

On July 7, 2015, PSNH d/b/a Eversource Energy (PSNH), filed a petition pursuant to RSA 371:17 for a license to construct and maintain electric lines over and across the public waters of the Merrimack River in the Towns of Merrimack and Litchfield, New Hampshire. The proposed new crossing is associated with PSNH's reconstruction of existing distribution line water crossing to meet increased U.S. Army Corps of Engineers aerial wire elevation requirements. See a detailed NHPUC Safety Division map/schematic in Attachment A of this recommendation.

The proposed crossing will span approximately 736 feet between two new wood structures. The structure on the west side of the river, number 3750/8, is a dead-end structure constructed with three, Class-H1, 95 foot tall round wood poles. The structure

on the east side of the river, number 3750/9, is a dead-end structure constructed with three, Class-H1, 100 foot tall round wood poles with a push brace.

The design criteria used for the conductors transmitting electrical power at 34.5 kV will be 477 ACSR "Pelican" cable with 18/1 stranding. The neutral will be 4/0 ACSR "Penguin" cable with 6/0 stranding. The conductors will be sagged using NESC Heavy Loading conditions (0 Degrees Fahrenheit, 4 pounds psf wind loading, and ½" radial ice) at a maximum tension of 2,000 pounds. The neutral will be sagged using NESC Heavy Loading conditions (0 Degrees Fahrenheit, 4 pounds psf wind loading, and ½" radial ice) at a maximum tension of 2,000 pounds. In its petition, PSNH provides sufficient detail to show how all required clearances from phase wires to the surface of the water will be maintained.

The position, tensioning and type of static wire is 19#10 Alumoweld shielding wire and is consistent with the NESC heavy loading rule 250B.

The water clearances are taken from the projected 10 year flood levels. PSNH used flood water elevations for the Merrimack River in Hillsborough County that is identified on FEMA flood map #33011C0383D. The 10-year flood elevation for the river in this location is approximately 102.75 feet, and is based on the North American Vertical Datum of 1988 (NAVD88). The design flood level, as defined by NESC (note 19 to Table 232-1) is approximately 120+/- acres and for purposes of calculating surface area for clearance, the 10-year flood area is used as suggested by NESC (note 18 to Table 232-1). In addition, the U.S. Army Corps of Engineers issued Permit Number NAE-2010-02435, eff. 1/30/2012, which sets the minimum elevation for the reconstructed 3750 Line at 148.91 feet NAVD88.

2. New Hampshire statute referenced in petition

371:17 Licenses for New Poles. – Whenever it is necessary, in order to meet the reasonable requirements of service to the public, that any public utility should construct a pipeline, cable, or conduit, or a line of poles or towers and wires and fixtures thereon, over, under or across any of the public waters of this state, or over, under or across any of the land owned by this state, it shall petition the commission for a license to construct and maintain the same. For the purposes of this section, "public waters" are defined to be all ponds of more than 10 acres, tidewater bodies, and such streams or portions thereof as the commission may prescribe. Every corporation and individual desiring to cross any public water or land for any purpose herein defined shall petition the commission for a license in the same manner prescribed for a public utility.

Source. 1921, 82:1. PL 244:8. RL 294:16. 1951, 203:48 par. 17. 1953, 52:1, eff. March 30, 1953. 2013, 82:1, eff. June 19, 2013.

3. Review of existing license(s) and permissions previously granted by the PUC for this location of the Merrimack River

The crossing has been previously licensed by the Commission as the 34.5 kV line. *Public Service Co. of N.H.*, 62 NH PUC 263 (1977)¹.

The entire length of the Merrimack River in New Hampshire is listed under the category "Public Rivers and Streams" in the Official List of Public Waters (OLPW) and falls under the jurisdiction of the Comprehensive Shoreland Protection Act, RSA 483-B:

4. The entire list of public waters can be accessed through the following web link:

<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf>

PSNH asserts in the petition that the proposed reconstruction of this crossing will be exercised without substantially affecting the rights of the public in the public waters of the Merrimack River. Minimum safe line clearances above the river surface and affected shorelines will be maintained at all times. The use and enjoyment of the river by the public will not be diminished in any material respect as a result of the overhead line crossing.

This portion of the Merrimack River is considered navigable per the US Army Corp of Engineers. The Merrimack River south of Concord is designated navigable and is subject to aerial crossing provisions of Section 10 of the River and Harbors Appropriations Act. The clearances to the water (see Item 1 above) are based on the Manchester bridge that serves as an entrance to Manchester Boston Regional Airport. *Ref 33 U.S.C. 403*

4. Review of land ownership of proposed pole structures

In its petition, PSNH specifies that the reconstruction of this crossing will span the Merrimack River at the same location as the current crossing. New Structure 3750/8 will be located within existing property owned in fee by the Company (EAA-10624). New Structure 3750/9 will be located in an existing easement owned by the Company (EAA-10819, not filed as part of the public record in this docket). Electronic copies of both easements referenced above were provided to Robert Wyatt (Staff) in an email from David Still (Eversource) on September 17, 2015, 2:56 PM.

5. Review of NESC code requirements as described in Puc 300

N.H. Code of Administrative Rules Puc 306 requires:

- (a) each utility shall construct, install, operate and maintain its plant, structures and equipment and lines, as follows:

¹ See Commission Order No. 12,928, dated October 7, 1977, in Docket No. DE 77-115 and previously referred to this circuit as 3020X2 and has since been redesignated 3750.

- (1) In accordance with good utility practice;
 - (2) After weighing all factors, including potential delay, cost and safety issues, in such a manner to best accommodate the public; and
 - (3) To prevent interference with other underground and above ground facilities, including facilities furnishing communications, gas, water, sewer or steam service.
- (b) For purposes of this section, “good utility practice” means in accordance with the standards established by:
- (1) The National Electrical Safety Code C2-2012....

PSNH states that it used the 2012 National Electrical Safety Code C2-2012 compliance.

Safety Division Staff reviewed the specifications related to the design and construction of this crossing project as provided in the petition, attachments, and all supplemental support documents, and found them to be in conformance with the applicable sections of NESC code C2-2012 and Puc 300.

6. Review of public need and public impact.

In order to meet the reasonable requirements of electric service to the public, PSNH has previously constructed, and currently operates and maintains, a three-phase 34.5 kV distribution line, designated as the 3750 Line, in the Towns of Merrimack and Litchfield, New Hampshire. The 3750 Line is an integral part of PSNH’s electric distribution system in the area where it crosses over the Merrimack River. The reconstructed 3750 Line will use the same location as the current crossing, approximately 4.95 miles north-northwest of the Route 111-A bridge in Hudson, New Hampshire.

PSNH asserts in the petition that the proposed reconstruction of this crossing will be exercised without substantially affecting the rights of the public in the public waters of the Merrimack River. Minimum safe line clearances above the river surface and affected shorelines will be maintained at all times. The use and enjoyment of the river by the public will not be diminished in any material respect as a result of the overhead line crossing.

Safety Division Staff concludes the impact to the public will be *de minimis* and not measurable. The proposed crossing does not appear to affect the rights of the public in the public water of the Merrimack River because minimum safe line clearances above the water surface will be increased as a result of this project in order to comply with modified Permit Special Condition No. 1 of the U.S. Army Corps of Engineers permit authorization No. NAE-2010-02435. Shorelines will not be affected by this project.

The Safety Division also notes in Figure 1 of Appendix A that the Commission issued licenses for Circuit 380 within Order 25,190 on January 7, 2011 and for Circuits H123 and K165 within Order 25, 333 on March 8, 2012. These are all located adjacent to the 3750 circuit.

Safety Division Staff Recommendations:

Based on the results of its review of the petition, its attachments, and all other supporting documents filed to this docket, the Safety Division Staff recommends that the Commission:

- 1) Find that the license PSNH requests in this docket may be exercised without substantially affecting the public rights in the public waters which are the subject of the petition;
- 2) Grant PSNH a license to construct and maintain electric lines, including neutral over and across the public waters of the Merrimack River in Merrimack and Litchfield, New Hampshire, as specified in the petition; and
- 3) Issue an Order Nisi and orders for its publication.

Attachment

Appendix A

FIGURE 1: Q:\Safety\GIS DATA\Electric\River Crossings

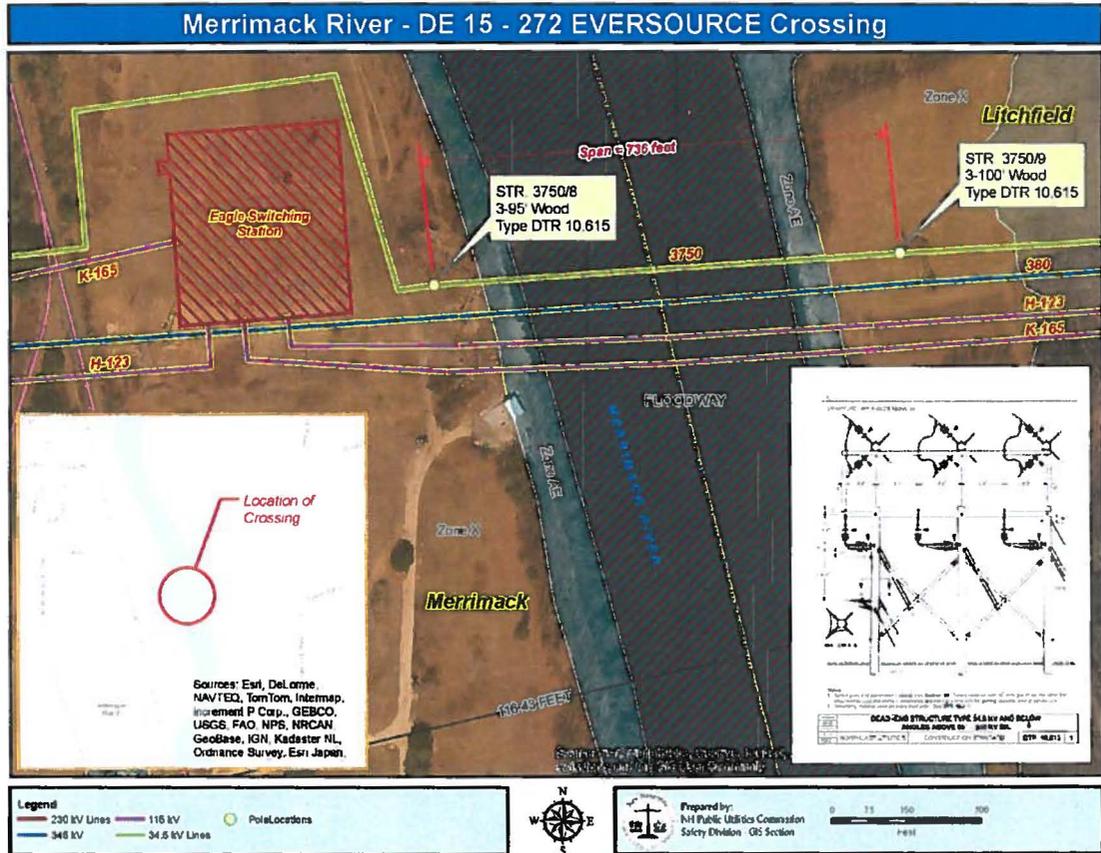


Figure 1: 34.5kV, designated as the 3750 Line, a span of approximately 736 feet, between Litchfield and Merrimack, NH. The structure on the west side of the river, number 3750/8 will be constructed with three Class-H1, 95 foot tall, round wood poles. The structure on the east side of the river, number 3750/9 will be constructed with three Class-H1, 100 foot tall, round wood poles with a push brace.

SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED

Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.

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Docket #: 15-272-1 Printed: October 15, 2015

FILING INSTRUCTIONS:

- a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with:
- DEBRA A HOWLAND
EXECUTIVE DIRECTOR
NHPUC
21 S. FRUIT ST, SUITE 10
CONCORD NH 03301-2429
- b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.
- c) Serve a written copy on each person on the service list not able to receive electronic mail.