

# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

**DATE:** January 05, 2011

**AT (OFFICE):** NHPUC

**FROM:** Randy Knepper  
Director of Safety



**SUBJECT:** Review of PSNH Petition for Revision to an Existing Crossing of the Merrimack River, Merrimack, NH  
Docket No. DE 10-322

**TO:** ✓ Debra Howland, Executive Director  
Tom Frantz, Director, Electric Division  
Steve Mullen, Assistant Director, Electric Division  
Lynn Fabrizio, Staff Attorney



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

- Petition contents and history
- Applicable State statute
- Review of 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 rules
- Review of public need and public impact, including applicability of other State regulations
- Conclusions and Recommendations

### **1. Petition contents and history.**

- On December 3, 2010, Public Service Company of New Hampshire filed a petition to alter an existing crossing of the Merrimack River in Merrimack, New Hampshire by replacing an existing support structure of a 345 kv transmission line (Line380) and accompanying static wire and OPGW fiber optic cable and raising the height of that structure from 80 to 120 feet (including a buried depth of 14 feet) so as to maintain clearance requirements of a proposed substation. The new support structure will be a H-frame tangent steel structure replacing an existing wooden structure. All existing horizontal attachments will remain as two 850.8 ASCR conductors, a single 7#8 Alumoweld static wire and 1-24 OPGW (24 fiber cable).
- On December 28, 2010, based on comments from Staff during its review of representations made within the petition, PSNH electronically forwarded a

revision to Exhibit 2 of the petition. The revisions to Exhibit 2 were minor in nature and depicted all the existing crossings in the ROW and eliminated potential crossings that do not currently exist. A formal revision was submitted to the Commission on January 5, 2011.

**2. New Hampshire statute referenced in petition.**

TITLE XXXIV  
PUBLIC UTILITIES

CHAPTER 371  
PROCEEDINGS TO ACQUIRE PROPERTY OR RIGHTS

Rights in Public Waters and Lands

**371:17 Petition.** – 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.

**3. Review of existing license(s) and permissions previously granted by the PUC for Merrimack River Crossing in Merrimack, NH and ownership of lands.**

On February 14, 1970, the PUC issued Order No. 9883 granting a license to Public Service Company of New Hampshire to construct and maintain electric transmission lines over and across the Merrimack River in the Towns of Litchfield and Merrimack.

This order was the result of a petition filed under Docket No. D-E5085 by PSNH.

On July 14, 1997, the PUC issued Order No. 22,660 granting a license to replace one of the 2 shielding wires (static wires) used in protection of the electric transmission Line 379 with Fiber Optic Ground Wire (OPGW). The crossing of the Merrimack River was between Litchfield and Merrimack. This order was the result of a petition filed under DE 97-117 by PSNH that also involved four other river crossings over the Merrimack River.

Line 379 has subsequently been renamed Line 380 for the portion of the circuit that includes the river crossing.

**4. Review of land ownership of existing pole structures.**

According to the Town of Merrimack's GIS database of parcels owned within the town, the western transmission support structure No. 91 is located on a parcel 3D-1-006 owned by PSNH and listed as Star Drive. The eastern transmission support structure No. 90 is located on a parcel in Litchfield and is not being changed in material or height.

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

N.H. Code of Administrative Rules PART Puc 306 requires each utility shall construct, install, operate and maintain its plant, structures and equipment and lines, as follows:

- (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 C2-2002...

PSNH in its petition states that the 2007 National Electrical Safety Code C2-2007 was used for compliance. The Safety Division reviewed the differences between the C2-2007 and C2-2002 edition for section 23 Clearances and found the differences were mainly additional clarity in the later edition, but no clearance values were adjusted that would have an impact on this crossing.

This crossing does not meet the applicable activities that trigger an individual permit nor a general programmatic permitting review from the Army Corps of Engineers. A New Hampshire DES permit is also not required.

The Safety Division reviewed 16 supporting statements contained in the petition, the four statements in Appendix A, Figures 1 and 2, and the revised Exhibit 2, and found them to be in conformance with the applicable sections of the NESC code C2-2002. PSNH provided sufficient detail to verify that no potential safety hazards will result from the alteration of the river crossing under a multitude of appropriate design scenarios.

**6. Review of public need and public impact.**

PSNH states the crossing is an integral part of the PSNH transmission system and the overall New England transmission grid. PSNH further states the increased height and structure adjustment is to provide the proper clearance for a proposed PSNH distribution substation and adjacent transmission substation named the Eagle Substation to be constructed in Merrimack on the parcel owned by PSNH. According to PSNH, no environmental permits are required of the crossing pursuant to RSA 483-B, which establishes permitting requirements under the Comprehensive Shoreland Protection Act, and New

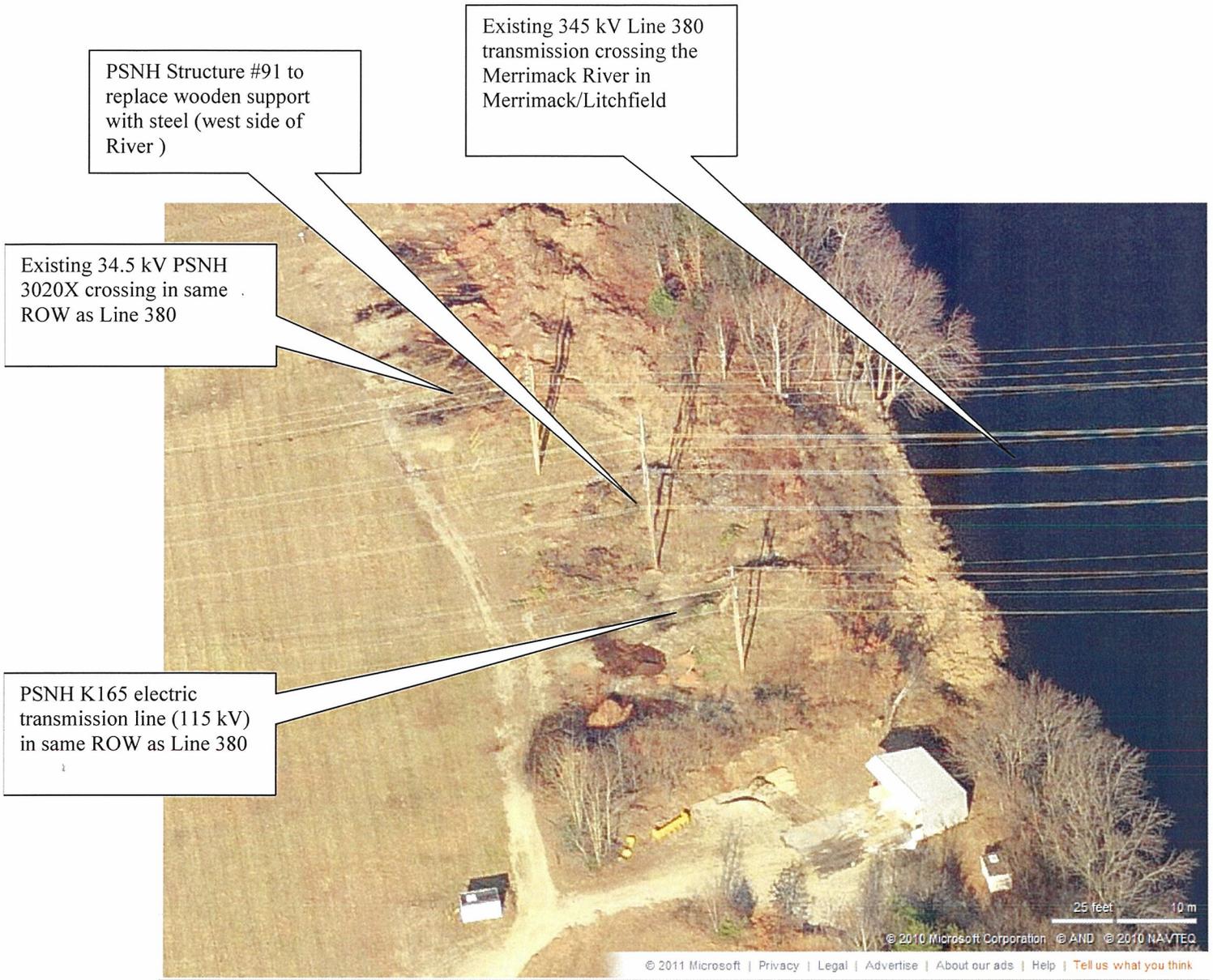
Hampshire Department of Environmental Services (NHDES) Administrative Rule Env-Wq 1406.04(d)(7), which exempts *de minimis* construction, excavation and filling activities from permitting requirements such as the replacement of utility poles and guy wires using mechanized equipment, provided that appropriate siltation and erosion controls are used and all temporary impacts are restored. PSNH states that it will comply with NHDES rules in the installation of replacement structure 91. PSNH states “the proposed transmission lines will not substantially affect the rights of the public in the public water of the Merrimack River. Minimum safe line clearances above the water surface and affected shorelines will be maintained at all times. The use and enjoyment by the public of the Merrimack River will not be diminished in any material respect as a result of the overhead line and cable crossings.”

7. **Recommendations and Conclusions.**

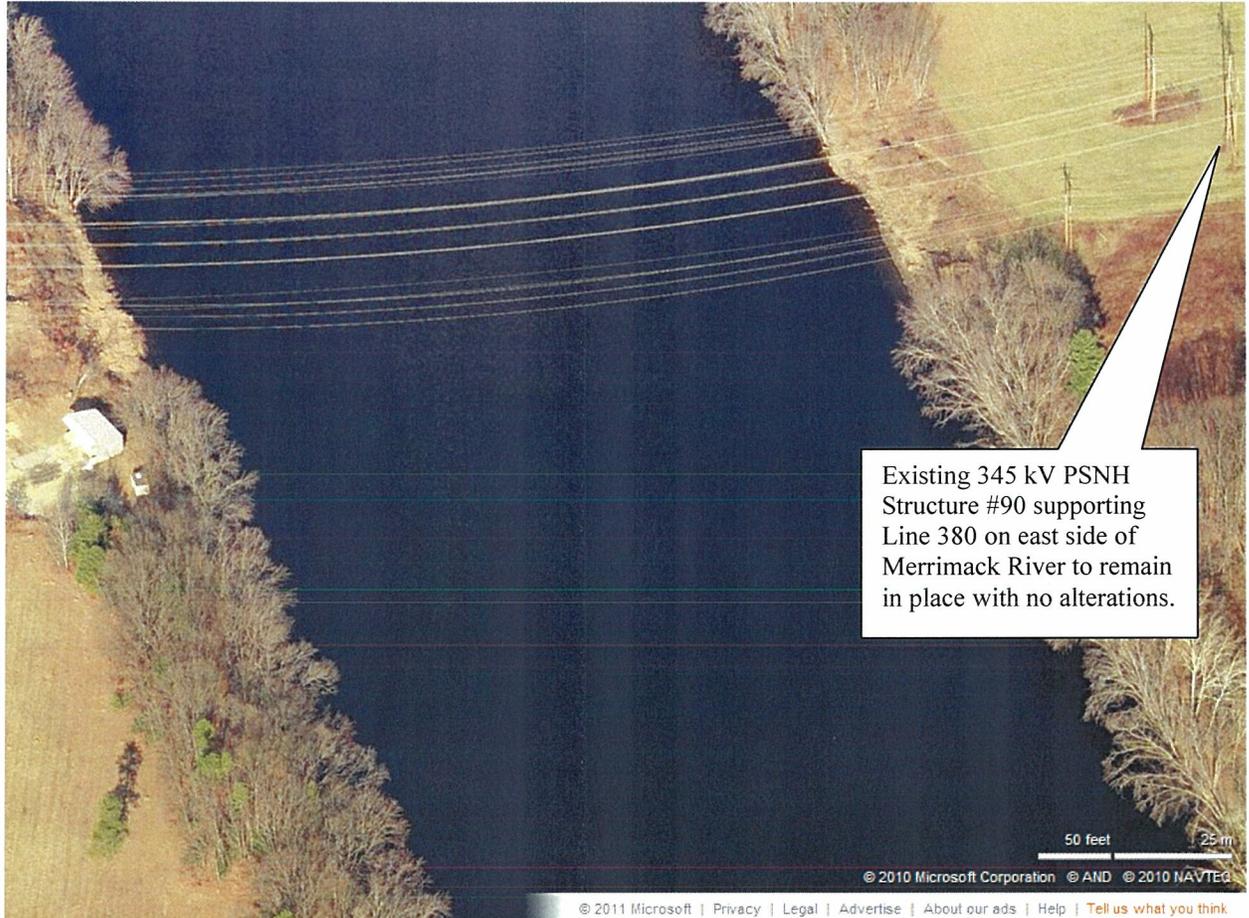
The Safety Division recommends approval of PSNH’s petition to the Commission with the following conditions:

- a. The Commission should require that all future alterations that may impact the public to the crossing conform to the requirements of both the 2002 and 2007 editions of the NESC and be resubmitted to the Commission 60 days prior to the alteration.
- b. PSNH should be required to maintain and operate the crossings in conformance with the NESC or risk future revocation of the license.

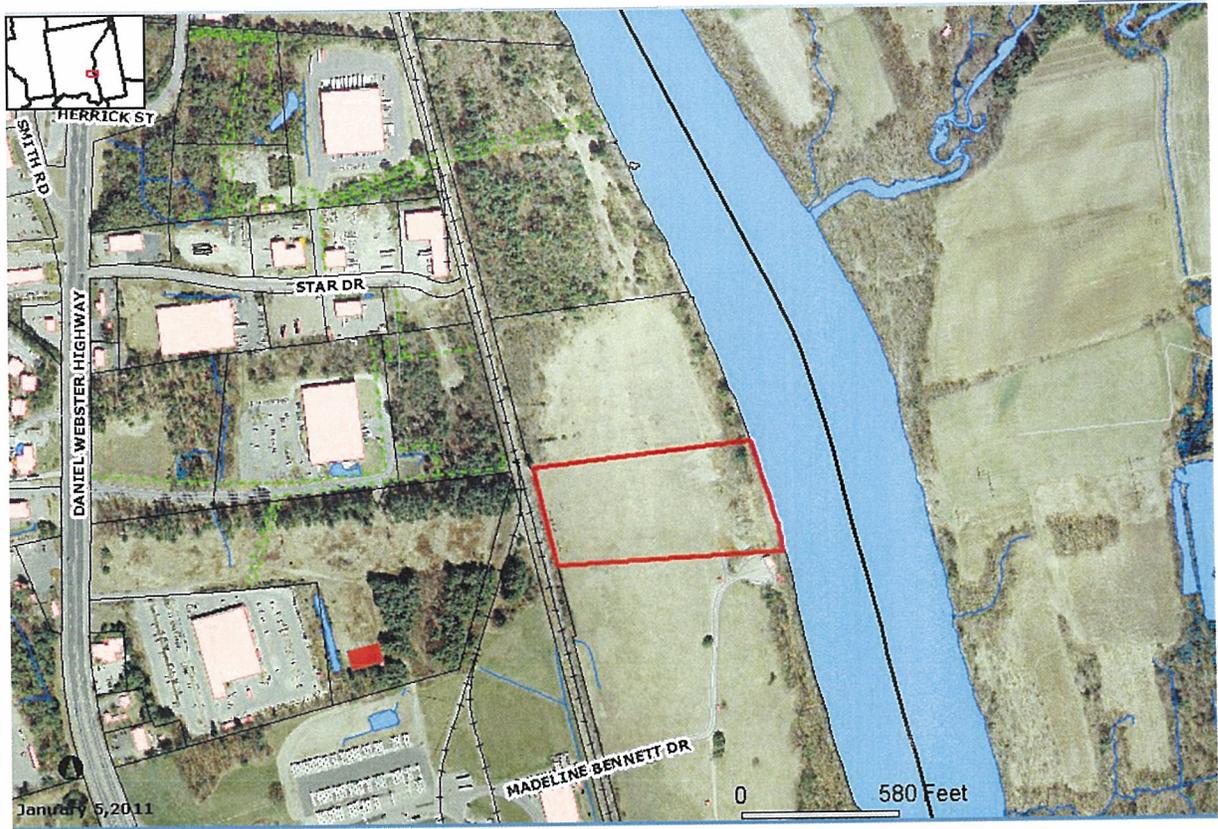
# Appendix A



**Figure 1.** Closer View of Merrimack River Crossing (west side), Merrimack , NH. Note storage building is not on PSNH property and is just south of PSNH owned parcel.



**Figure 2.** View of Merrimack River Crossing, Merrimack and Litchfield , NH. Note span for Line 380 is approximately 936 feet and river width is approximately 575 feet. 3 PSNH spans are shown for 3020X (34.5kV) – furthest north, Line 380 (345 kV) – middle, and Line K 165 (115kV) furthest south. The span is being decreased to 936 feet from a current span of 953 feet.



**Figure 3.** Parcel in Merrimack, NH between the Merrimack River and the Railroad in which Structure 91 will be replaced. Information source is derived from on-line GIS database of the Town of Merrimack, NH.

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**FILING INSTRUCTIONS: PURSUANT TO N.H. ADMIN RULE PUC 203.02(a),  
WITH THE EXCEPTION OF DISCOVERY, FILE 7 COPIES (INCLUDING COVER LETTER) TO:  
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