

# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

**DATE:** October 13, 2014

**AT (OFFICE):** NHPUC

**FROM:** Randy Knepper *Randall Knepper*  
Director of Safety

**SUBJECT:** Review of PSNH Petition for License to Alter an Existing Circuit  
U199 overhead crossing of the Ammonoosuc River, Littleton (West of  
Rotobec Drive)  
Docket No. DE 14-194

**TO:** Debra Howland, Executive Director  
Tom Frantz, Director, Electric Division  
Les Stachow, Assistant Director, Electric Division  
Michael Sheehan, 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 July 17, 2014, Public Service Company of New Hampshire (PSNH) filed a petition to alter an existing water crossing associated with the 115 kv circuit U199. The water crossing is an existing crossing of the Ammonoosuc River in Littleton.
- The water crossing consists of a single 420 foot span that consists of a pair of existing 7#8 Alumoweld static wires which serve as shield wires that are the highest attachments to the support structures as well as the three electrical conductors (795 kcmil ACSR) which make up the 115 kv circuit identified as U199.
- The material, height, and location of both support structures adjacent to the water crossing are changing from the original installation. Pole 71 on the

eastern bank of the Ammonoosuc River was originally a three pole wooden structure 65 feet in height. It is being replaced with a 75 ft single steel pole structure. Pole 72 on the western bank of the Ammonoosuc River was originally a three pole wooden structure 65 feet in height. It is being replaced with a 50 feet single steel pole structure. The span will be increased from the original 344 feet to 420 feet as the Ammonoosuc River has changed over the years and has been subject to flooding which has damaged the wooden structures.

- Staff believes the existing structures currently exist at a greater span than 344 ft based on aerial photography for the Ammonoosuc River. It is assumed this change occurred between 1971 and 2014.
- The conductor size and material, as well as the size and material of the static wires will remain as originally constructed.
- The position and type of static wire is remaining the same as the previous crossing using a 7#8 Alumoweld shielding wire. It will be tensioned at 4,500 pounds consistent with the NESC heavy loading rule 250B. No new communication cable (OPGW) was shown within the petition.
- The single conductors for all 3 phases of U199 circuit will remain at each crossing as the existing 795 kcmil ACSR (26/7 configuration). The conductors will be tensioned at 9,000 pounds consistent with the NESC heavy loading rule 250B.
- The water clearances are conservatively taken from the projected 100 year flood levels. Staff reviewed the flood zones of March 2011 based on FEMA flood map # 33009C01109S2 C for the Ammonoosuc River in Littleton. The Ammonoosuc River is considered unsailable, and PSNH had clearances that easily exceeded (33.25 feet above 100 year flood level) the required 18.6 feet of clearance NESC 2012 used for the lower standard of 10 year flood levels.
- PSNH did not request a reissuing of licensure for these crossings but was notifying the Commission of proposed alterations to the previously licensed public water crossing.

**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 this location of the Ammonoosuc River in Littleton and ownership of lands.**

The U199 crossing of the Ammonoosuc River crossing in Littleton was issued a license by the PUC in Order # 10338 July 19, 1971. The current petition incorrectly provided the previous docket and date of order of the 115 kv Androscoggin River crossings. The correct previous docket was D-E077.

This portion of the Ammonoosuc River in Littleton is considered a public river and listed on the DES official list of public rivers and streams. See <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf>

These portions of the Ammonoosuc River are not considered navigable per the US Army Corp of Engineers. All vertical clearances easily exceed the minimum requirement for sailing for the Ammonoosuc River.

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

The crossing of the Ammonoosuc River is located within a 150 ft right of way and within limits of an easement on non PSNH-owned land on both sides of the river. The orientation, structures and approximate distances from the edge of right of way will all remain as originally constructed.

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

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

(a) 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 C2-2012...

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 C2-2012 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.

A New Hampshire DES permit is also not required per Administrative Rule Wq 1406.04 (d) (7). There will not be any alteration of terrain, thus no permit is required.

The new water crossing structures will be set within the protected shoreland of the Ammonoosuc River as defined by RSA 383-B. Installation of the new structures within the protected shoreland has been submitted and was accepted as a permit by notification by the NH Department of Environmental Services (NHDES) on September 22, 2014 in Shoreland File #2014-01952.

The Safety Division reviewed the supporting statements contained in the petition, the six statements in each of Appendix A, Drawing 2 of 2, and Exhibit 1 and found them to be in conformance with the applicable sections of the NESC code C2-2012. It was noted by Staff that the petition referenced incorrect dates of past Commission orders but this was clarified and corrected with a telecommunication conversation between Staff and PSNH.

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

This transmission line crossing of U199 is an integral part of the PSNH transmission system and the overall New England transmission grid. The relocation of the existing poles to areas outside of the 100 year flood level will improve the reliability of the Littleton area by minimizing damages to pole structures that have occurred in the past.

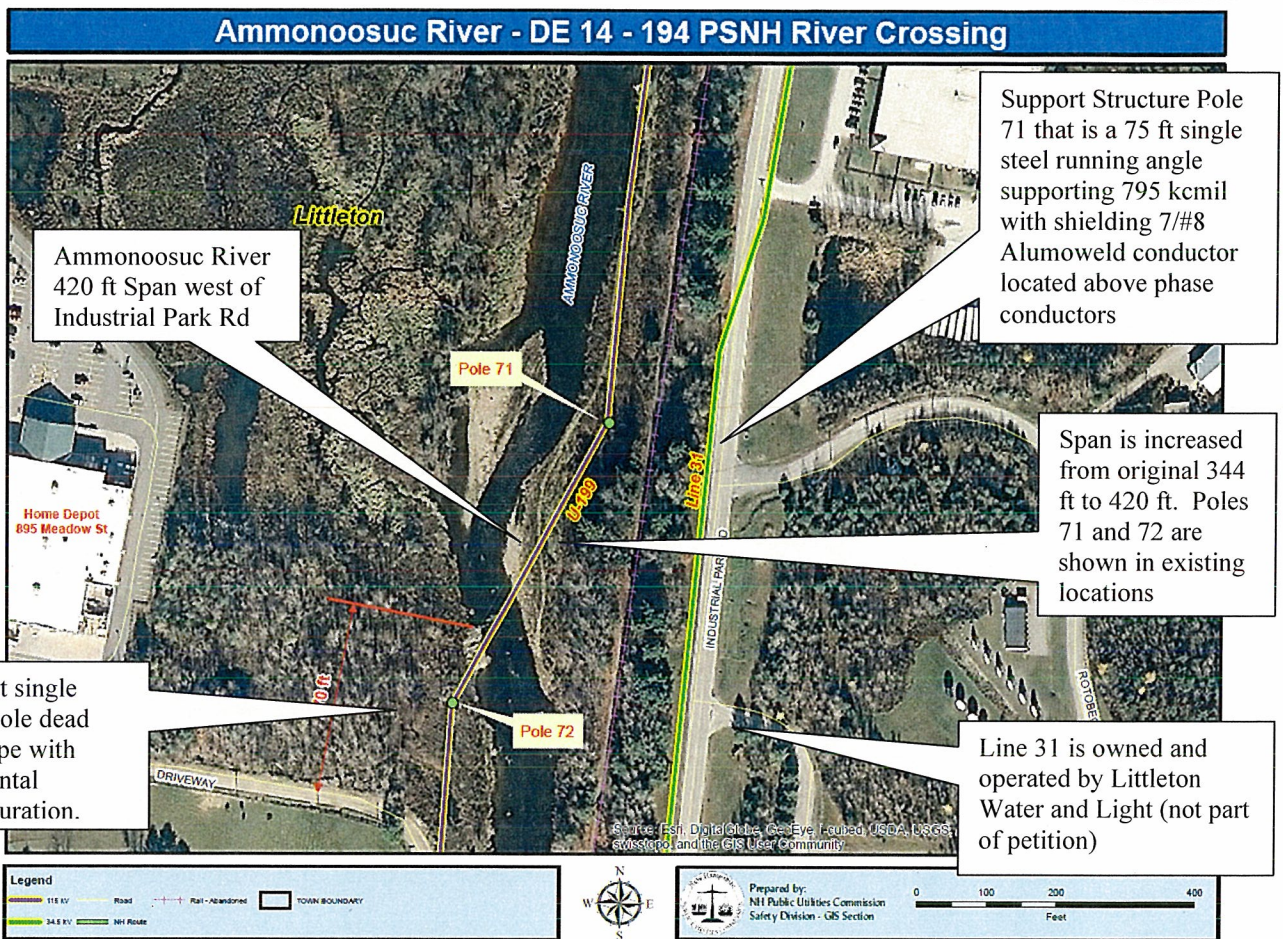
PSNH states “replacement of these structures will also result in increased clearances over those that were previously described in the original petition”.

The Safety Division concludes the impact to the public will be *de minimis* and not measurable. The proposed crossing does not appear to substantially affect the rights of the public in the public water of the Ammonoosuc 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 Ammonoosuc River will not be diminished in any material respect as a result of the overhead line crossings.

## **7. Recommendations and Conclusions.**

- 1) The Safety Division recommends a reissuing of licensure for this crossing because of a planned reconstruction material of the poles, the change of heights of the structures, the change in location of the structures, the increased span and decreased sags.
- 2) The Safety Division recommends full approval of PSNH's petition to the Commission with the condition that the reconstruction of the line be implemented as depicted in the petition documents.
- 3) The Commission should require that all future alterations that may impact the public to the crossing conform to the requirements of the 2012 edition of the NESC and be resubmitted to the Commission 60 days prior to the alteration.
- 4) 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:** 115kV U199 transmission line in Littleton looking north with all the structures and spans shown.

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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**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.