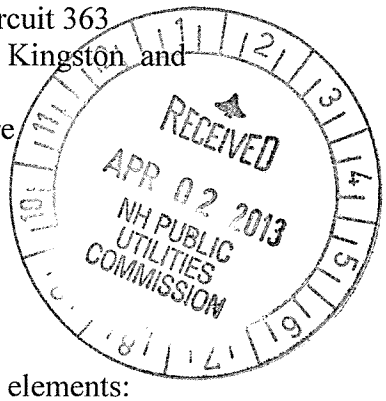
STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: April 1, 2013
AT (OFFICE): NHPUC

FROM: Randy Knepper RSK
Director of Safety

SUBJECT: Review of PSNH Petition for Revision to an Existing Circuit 363
Crossings of the Powwow River, Kingston and East Kingston and
Exeter River, Danville and Chester, NH
Docket No. DE 13-015, alteration of communication wire



TO: Debra Howland, Executive Director
Tom Frantz, Director, Electric Division
Steve Mullen, Assistant Director, Electric Division
Suzann Amidon, 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 January 14, 2013, Public Service Company of New Hampshire (PSNH) filed a petition to alter four existing crossings associated with the 345kv circuit 363. The river crossings are existing crossings of the Powwow River at two separate locations, Kingston and East Kingston. Two additional crossings of the Exeter River in Danville and Chester, New Hampshire will also be altered.
- The modification consists of replacing one of the two static wires which serve as shield wires that are the highest attachments to the support structures. All of these crossings are associated with a 345kv circuit identified as 363. The material, height, location of both support structures adjacent to each river crossing as well as the conductor size and material, the size and material of the remaining static wire will remain as originally constructed. The overall

purpose of the petition replaces the communication wire from an ADSS type to an OPGW line (24 fiber optic cable).

- The span between the structures 58 and 59 of the Powwow River in East Kingston will remain at approximately 560 feet through wetlands and the span between structure 59 and 60 will remain at approximately 667 feet including the adjoining wetland with the Powwow River span is depicted as approximately 40 feet. Structures 59 and 60 consist of steel poles approximately 80 feet above grade and 115 feet above grade respectively.
- The span between the structures 77 and 78 of the Powwow River in Kingston will remain at approximately 490 feet while Powwow River span is depicted as approximately 393 feet. Structures 77 and 78 consist of steel poles approximately 85 feet above grade and 100 feet above grade respectively.
- The span between the structures 140 and 141 of the Exeter River in Danville will remain at approximately 886 feet through wetlands and the Exeter River span is depicted as approximately 62 feet. Structures 140 and 141 consist of steel poles approximately 95 feet above grade and 115 feet above grade respectively.
- The span between the structures 175 and 176 of the Exeter River in Chester will remain at approximately 979 feet while Exeter River span is depicted as approximately 59 feet. Structures 175 and 176 consist of steel poles approximately 85 feet above grade and 90 feet above grade respectively.
- The double conductors for all 3 phases of 363 circuit will remain at each crossing as the existing 2156 ACSR (84/19 configuration).
- A single 16/#7 Alumoweld static wire will remain at each crossing serving as a shielding wire for lightning strikes.
- The position and type of communication carrier is being replaced from an ADSS type (All Dielectric Self Supporting) fiber optic to an overhead power ground wire (OPGW) fiber optic cable with 24 strands. The new communication cable (OPGW) will be overhead of the conductors for both crossings. The OPGW wire serves dual purposes as a static wire and communication cable.
- The water clearances are conservatively taken from the 10 year flood level with an additional five foot buffer (margin of safety) that was derived by PSNH based on NAVD 88 datum and FEMA flood map and # 33015C0395E for the Powwow River in East Kingston and Kingston and # 33015C0360E for the Exeter River in Danville and # 33015C0365E for the Exeter River in Chester. The Powwow River is not considered suitable for sailing while the Exeter River is considered sailable.
- PSNH requested a completed licensure for these crossings because of a planned reconstruction of the communication wire to begin in mid-May 2013.

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 Powwow Crossing in Kingston and East Kingston, NH; Exeter River Crossing in Chester and Danville, NH and ownership of lands.**

On January 29, 1974, the PUC issued Order No. 11,267 granting a license to Public Service Company of New Hampshire to construct and maintain electric transmission lines over and across the Powwow River in Kingston. This order was the result of a petition filed under Docket No. DSF6205 by PSNH as part of the transmission lines associated with The Seabrook nuclear power generation facility.

There is no record that the Powwow River crossing in East Kingston or the Exeter River was ever issued a license by the PUC for circuit 363. This petition completes the record of the Powwow River crossing and both Exeter River crossings and allows PSNH to update licenses and conform to the existing statute.

These portions of the Powwow River in Kingston and East Kingston and Exeter River in Danville and Chester are considered public rivers and are 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 Exeter River and Powwow River are not considered navigable per the US Army Corp of Engineers. All vertical clearances easily exceed the minimum requirement for sailing for the Exeter River only.

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

Both crossings of the Powwow River are located in an approximate 170 foot right of way and for the Exeter River in an approximate 320 foot right of way that PSNH owns through a paid fee has obtained a permanent easement for its lines and facilities on both the east and west sides of the Powwow River and the Exeter River. The orientation, structures and 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 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.

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 Safety Division reviewed 15 supporting statements contained in the petition, the four statements in each of Appendices A,B,C and D, Figures 1,2 and 3, and Exhibits 1 through 8, and found them to be in conformance with the applicable sections of the NESC code C2-2002.

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

PSNH states "the proposed communication wires will not substantially affect the rights of the public in the public water of the Powwow River or the Exeter 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 Powwow River and Exeter River will not be diminished in any material respect as a result of the overhead line and cable crossings."

The Safety Division concludes the impact to the public will be *de minimis* and not measurable.

7. **Recommendations and Conclusions.**

The Safety Division recommends full approval of PSNH's petition to the Commission without any conditions.

Appendix A

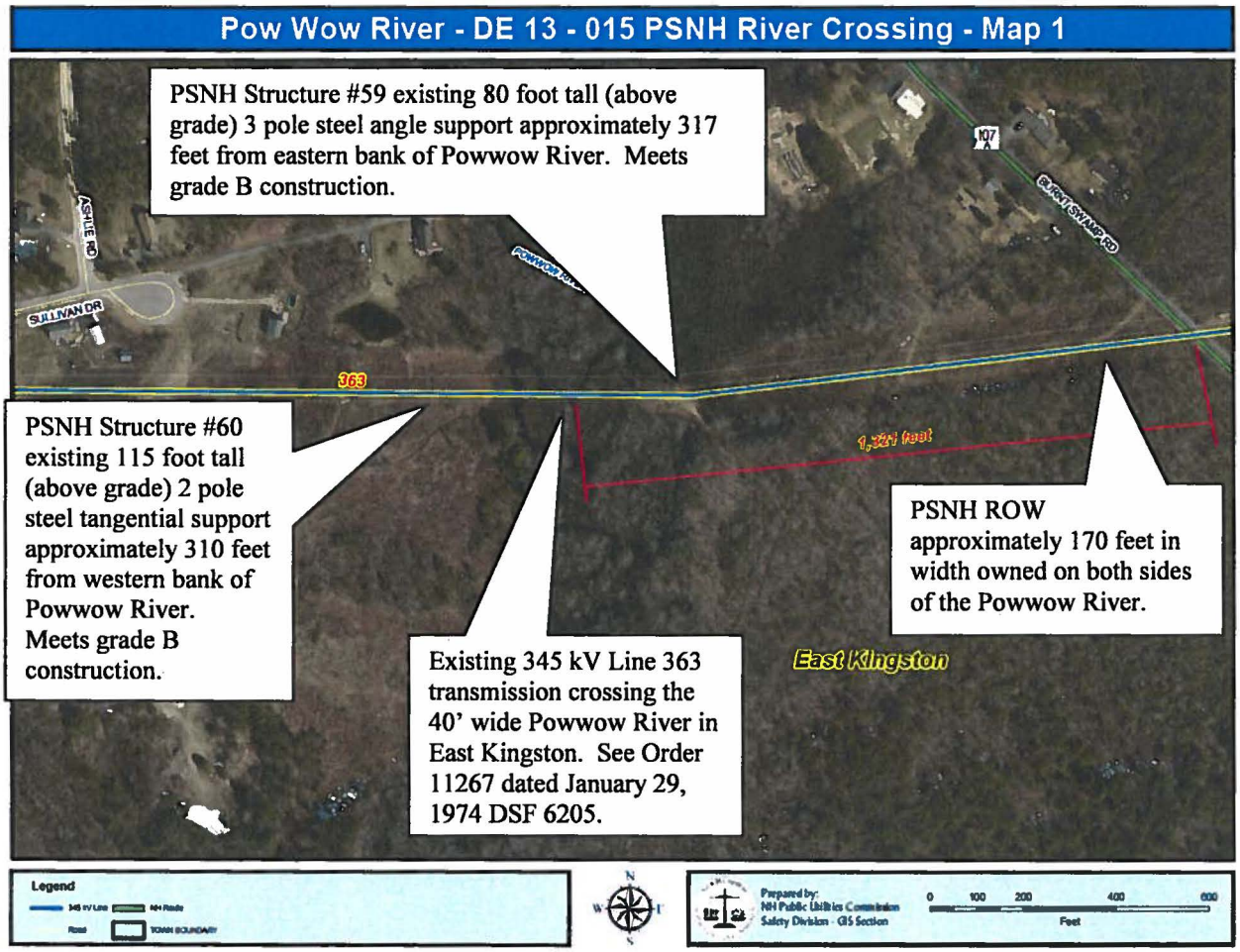


Figure 1. Closer View of the Circuit 363 Powwow River Crossing East Kingston, NH. Nearest street is Burnt Swamp Rd (NH Route 107A) approximately 1320 feet to the east of the river crossing.

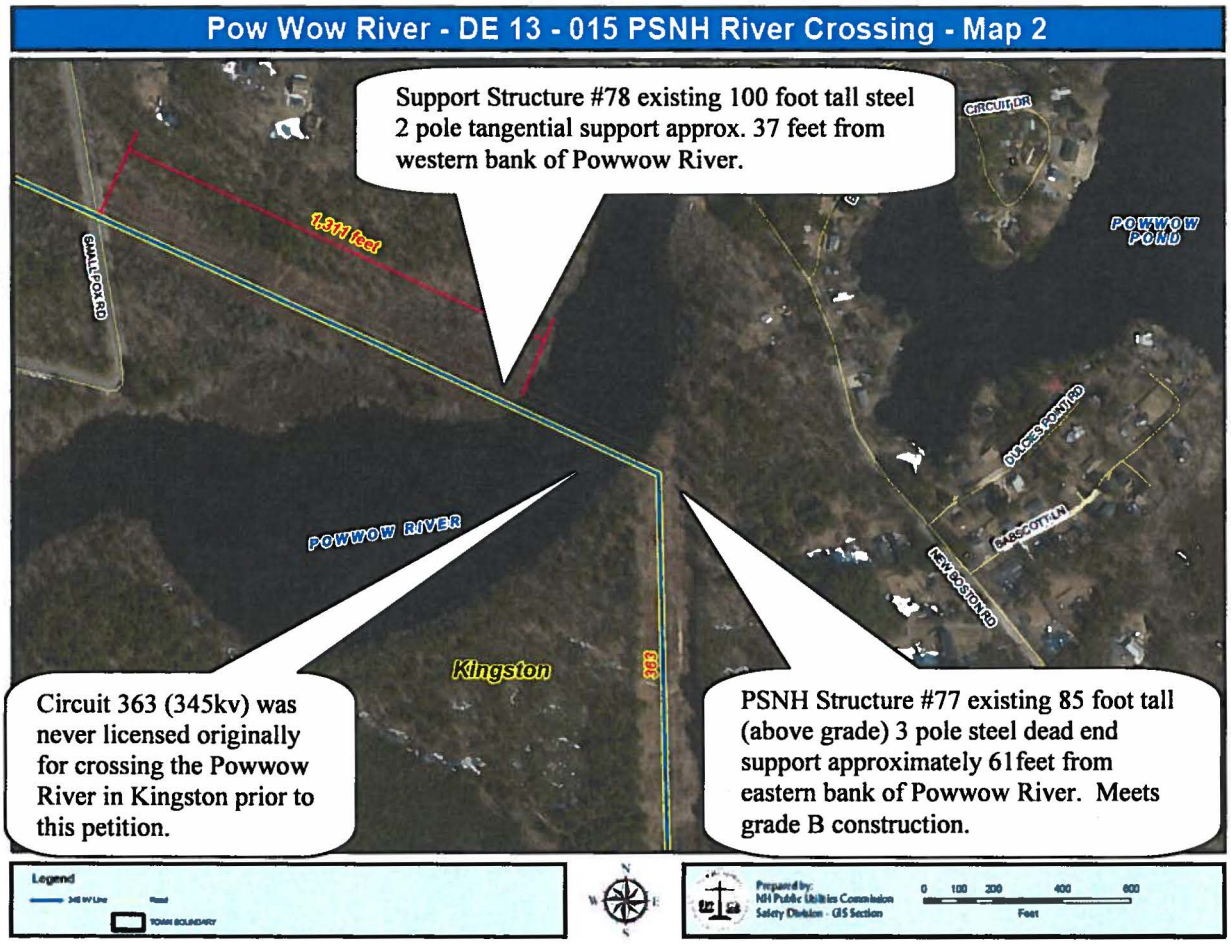


Figure 2. View of Powwow River Crossing, Kingston, NH. Note span is approx. 491 feet between support structures and the river crossing is approximately 1310 south east of Small Pox Rd along the ROW.

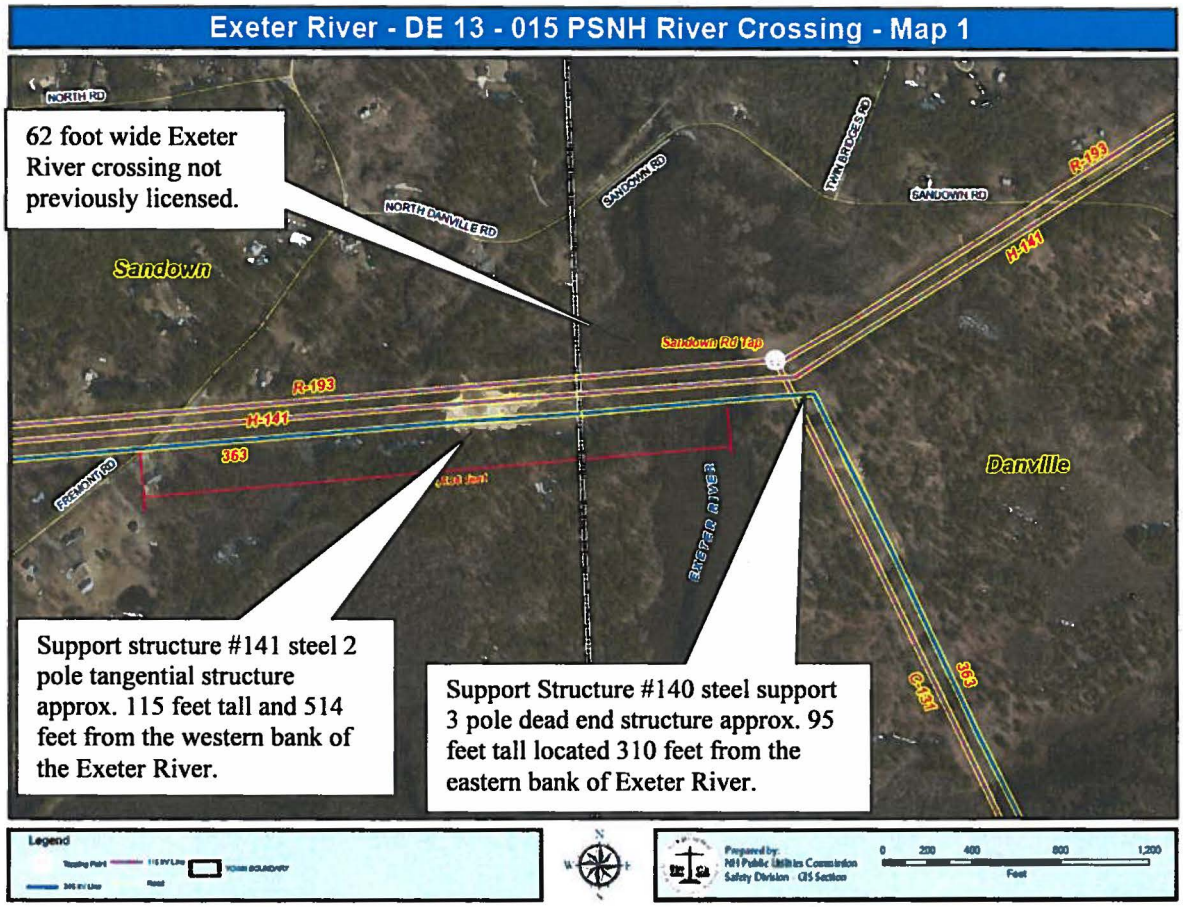


Figure 3. Closer View of the Circuit 363 Exeter River Crossing Danville, NH. Nearest street is Fremont Rd approximately 2636 feet to the west of the river crossing. Total span between support structure is 886 feet.

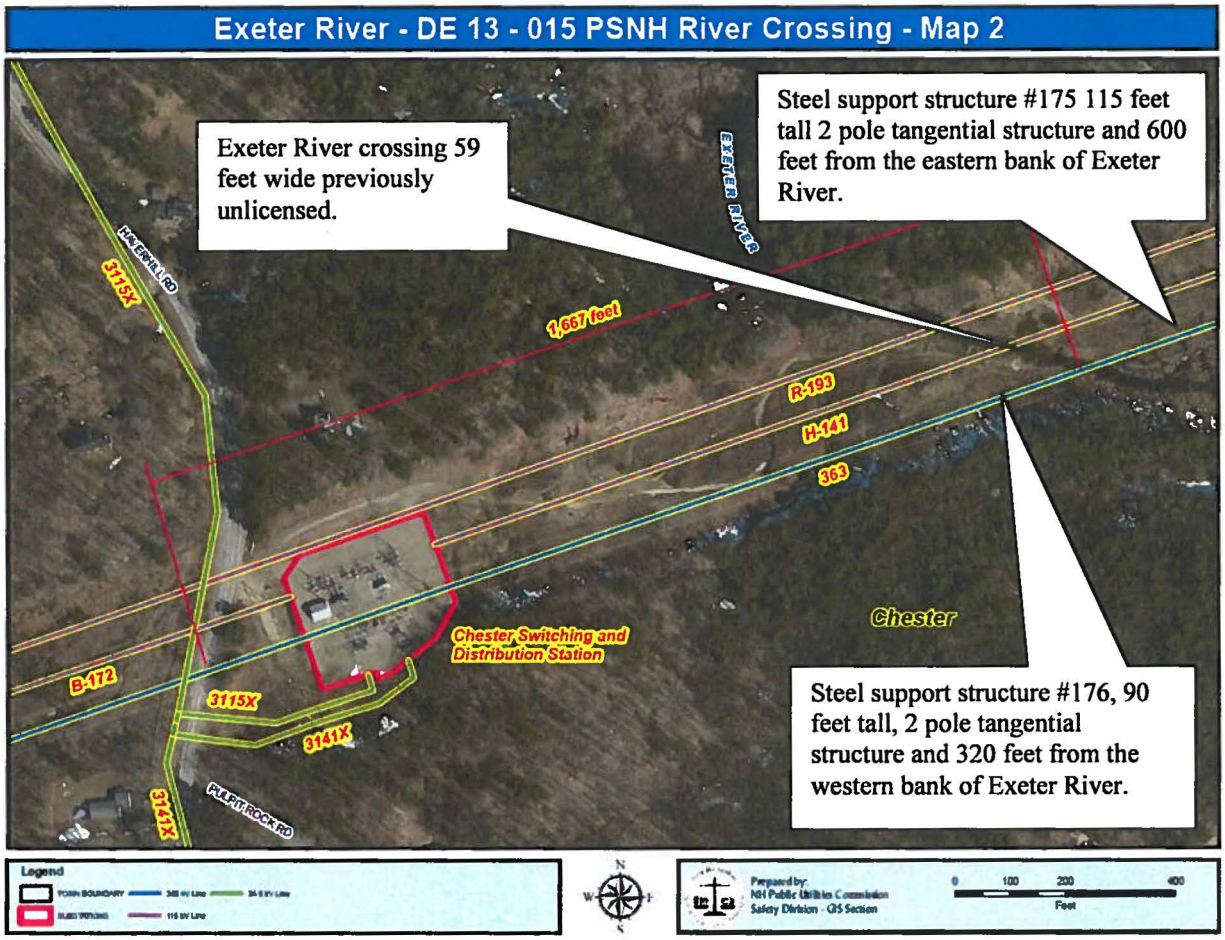


Figure 4. Closer View of the Circuit 363 Exeter River Crossing Chester, NH. Nearest street is Haverhill Rd approximately 1667 feet to the west of the river crossing. Total span between structures is 979 feet.