

# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

**DATE:** September 11, 2020

**AT (OFFICE):** NHPUC

**FROM:** Kenneth Walsh *KGW*  
Utility Analyst IV – Safety Division

**SUBJECT:** Docket No. DE 20-131 Public Service New Hampshire d/b/a  
Eversource Energy  
Petition for a License to Construct and Maintain Electric Lines Over and  
across the public waters of the Ashuelot River in the City of Keene, New  
Hampshire  
**Staff Recommendation**

**TO:** Debra Howland, Executive Director  
Thomas Frantz, Director, Electric Division  
Richard Chagnon, Assistant Director, Electric Division  
Lynn Fabrizio, Staff Attorney  
Randall Knepper, Director, Safety Division  
Paul Kasper, Assistant Director, Safety Division

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) not 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 August 6, 2020, Public Service New Hampshire d/b/a Eversource Energy (ES), filed a petition pursuant to RSA 371:17 for a license to re-construct, maintain and operate the Eversource D108 line, which is a three phase 115 kV transmission line. This is a project to rebuild this line with replacement of four (4) existing wood structures along with the replacement of three (3) existing conductors and two (2) existing shield wires. The conductor size will increase and the shield wires will be replaced with communications fiber optical ground wire (OPGW), all of which will include crossing the Ashuelot River in Keene, New Hampshire. One existing structure (#291) will be removed and not replaced as part of the rebuild project on line D108.

In addition to this petition, in 2017, ES previously replaced original wood structure (#289.5) with weathered steel structures without obtaining PUC licensing at that time. ES seeks to include this 2017 structure replacement after the fact by this petition along with the entire rebuild project as the existing crossing was never licensed by PUC. Re-numbering of the structures will occur as part of this rebuild project. Structure number changes will be clarified in Safety Staff Recommendation.

This rebuild project is part of a capital reliability project necessary for the D108 line to continue to meet current as well as future projected electricity demands. ES asserts the existing wood structures are 66 years old that have been subjected to environmental damage and require replacement to continue to function safely and reliably.

The scope of this project encompasses rebuild of the D108 line between the North Keene substation to the Emerald Street substation, all of which is located in Keene. The scope of this project is located to the north and the south of West Street in Keene. This proposed project begins from Structure 11, located in the north heading southerly to cross sections of the Ashuelot River to Structure 12, then crossing the river again to Structure 13. Structure 14 begins just north of the West Street crossing then heads south again crossing the Ashuelot River, which meanders throughout this area. See a detailed NHPUC Safety Division map/schematic in the Attachment of this recommendation.

In ES Exhibit #2, original wood Structure #289 (new Structure #11), will be replaced with (3)-74.6 ft. OAL Type BA, Class H-1 weathered steel poles. All existing conductors for the D108 line will be replaced with (3) 1272 kcmil ACSS 54/19 cables. Both of the existing shield lines will be replaced with (1) 48 fiber optical ground wire (OPGW) and (1) 144 fiber OPGW. Both telecommunication lines will be vertically attached above the conductors. The conductor cable clearance requirements were met using the National Electrical Safety Code (NESC) conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductor cables to the water surface will be maintained at (36.7 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 18.6 feet clearance is required by the NESC Table 232-1.

Original wood Structure #289.5 (new Structure #12), had been previously replaced without a petition in 2017 with (3)-61.0 ft. OAL Type SDA-1, Class H-1 weathered steel poles. The structure replacement at that time included the transfer of all existing conductors for the D108 line. All existing conductors for the D108 line will be replaced with (3) 1272 kcmil ACSS 54/19 cables. Both of the existing shield lines will be replaced with (1) 48 fiber optical ground wire (OPGW) and (1) 144 fiber OPGW. Both telecommunication lines will be vertically attached above the conductors. This crossing creates a total span of 529.3 ft. between structures 11 and 12 with 396 ft. spanning public waters.

Original wood Structure #290 (new Structure #13), will be replaced with (3)-71.0 ft. OAL Type P, Class H-1 weathered steel poles. All existing conductors for the D108 line will be replaced with (3) 1272 kcmil ACSS 54/19 cables. Both of the existing shield lines will be replaced with (1) 48 fiber optical ground wire (OPGW) and (1) 144 fiber OPGW. Both telecommunication lines will be vertically attached above the conductors. The conductor cable clearance requirements were met using the National Electrical Safety Code (NESC) conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductor cables to the water surface will be maintained at (36.3 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 18.6 feet clearance is required by the NESC Table 232-1. This crossing creates a total span of 516.3 ft. between structures 12 and 13 with 197.2 ft. spanning public waters. The total span between structures 11 and 13 is 1045.6 ft., which effectively creates two public water spans crossing 593.2 feet due to the meandering course of the Ashuelot River.

Petition information indicates existing wood structure #291 will be removed and not replaced as part of this rebuild project.

In ES Exhibit #3, new Structure #14 (original wood Structure #291 number sequence), will be constructed with (2)-74.6 ft. OAL Type T, Class H-1 weathered steel poles. All existing conductors for the D108 line will be replaced with (3) 1272 kcmil ACSS 54/19 cables. Both of the existing shield lines will be replaced with (1) 48 fiber optical ground wire (OPGW) and (1) 144 fiber OPGW. Both telecommunication lines will be vertically attached above the conductors. The conductor cable clearance requirements were met using the National Electrical Safety Code (NESC) conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductor cables to the water surface will be maintained at (42.6 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 18.6 feet clearance is required by the NESC Table 232-1.

Original wood Structure #293 (new Structure #15), will be replaced with (3)-74.6 ft. OAL Type BA, Class H-1 weathered steel poles. All existing conductors for the D108 line will be replaced with (3) 1272 kcmil ACSS 54/19 cables. Both of the existing shield lines will be replaced with (1) 48 fiber optical ground wire (OPGW) and (1) 144 fiber OPGW. Both telecommunication lines will be vertically attached above the conductors. This crossing creates a total span of 571.5 ft. between structures 14 and 15 with 97.7 ft. spanning public waters.

New structure # 11 will be relocated approximately 12 feet to avoid wetland impacts. New structure # 13 and # 15 will be relocated approximately 5 feet and new structure # 14 will be relocated approximately 10 feet from its current location.

The water clearances are taken from the projected 10 year flood levels. ES uses floodwater elevations for the Ashuelot River in Cheshire County that are identified on

FEMA flood map #33005CV001A, effective May 23, 2006. The 10-year flood elevation for the river in this location is approximately 468 feet, and is based on the North American Vertical Datum of 1988 (NAVD88). The Safety Division verified the 468-foot flood level from the FEMA flood map, although noting a flood elevation range difference from 468 feet to 475 feet as depicted on FEMA flood map 33005C0258E, effective May 23, 2006. Safety Staff do not believe this to affect the sag clearances as the proposed design exceeds NESC required minimum clearances.

## **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 Ashuelot River in Keene**

This public water crossing license application is part of the reliability replacement Project on the D108 line for ES and had not been previously licensed by the Commission either due to lack of oversight or because the locations did not constitute public waters at the time of construction of the D108 line.

The Ashuelot River, from the dam at Butterfield Pond in Washington to the confluence with the Connecticut River is listed under the category "Public Rivers And Streams" in the Official List of Public Waters (OLPW), under the category "List of freshwater Public Rivers and Streams". The entire list of public waters can be accessed through the following web link:

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

The crossing project requires a New Hampshire Department of Environmental Services statutory permit by notification (SPN) if construction access and work activities involve the temporary minor alteration of non-tidal wetlands, non-tidal surface waters, and banks adjacent to non-tidal surface waters and is applicable to the public water crossings. ES asserts the 2017 replacement of Structure #289.5 (new Structure #12)

required a Utility Maintenance Notification (UMN, predecessor to current SPN permitting process) and UMN #2017-00190 was obtained at the time of the replacement. The current rebuild project of Structures 11, 13, 14, and 15 will require SPN's and shoreland permits by notification (PBN) due to the impact as a result of this rebuild project. ES asserts these will be obtained prior to commencement of this project.

The U.S. Army Corps of Engineers (USACOE) does not regulate the subject portion of the Ashuelot River in Keene as a federal-designated navigable water. Therefore, no crossing permit is required from USACOE.

ES asserts in the petition that the existing crossing will be exercised without substantially affecting the rights of the public in the public waters of the Ashuelot 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.

#### **4. Review of land ownership of proposed pole structures**

In its petition, ES specifies that the re-construction of these water crossings is over the public waters of the Ashuelot River in the City of Keene, New Hampshire.

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

Under N.H. Code Admin. Rules Puc 306, each utility is required to construct, install, operate and maintain its plant, structures and equipment and lines, as follows:

In accordance with good utility practice;

After weighing all factors, including potential delay, cost and safety issues, in such a manner to best accommodate the public; and

To prevent interference with other underground and above ground facilities, including facilities furnishing communications, gas, water, sewer or steam service.

For purposes of that section, "good utility practice" means in accordance with the standards established by the "National Electrical Safety Code C2-2012."

ES states that the current crossings have been designed and will be re-constructed, maintained, and operated in accordance with the NESC C2-2012.

Safety Division Staff reviewed the specifications related to the design and re-construction of this crossing project as described in the petition, the attachments, and all supplemental support documents, and found them to be in conformance with the applicable sections of NESC 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, ES proposes to rebuild and maintain a three-phase 115 kV transmission line, designated as the D108 line, conductors, and related fiber optic communication cables over and across public waters of the Ashuelot River in the City of Keene, New Hampshire. This transmission line is an integral part of ES's electric transmission system in this area.

ES asserts in the petition that the proposed license for this crossing may be exercised without substantially affecting the rights of the public in the public waters of the Ashuelot River in the City of Keene. Minimum safe line clearances above the river surface and affected shorelines will be maintained at all times, the use and of which is the subject of this petition. The use and enjoyment by the public of these waters will not be diminished in any material respect as a result of the modification and replacement of the existing overhead line crossings.

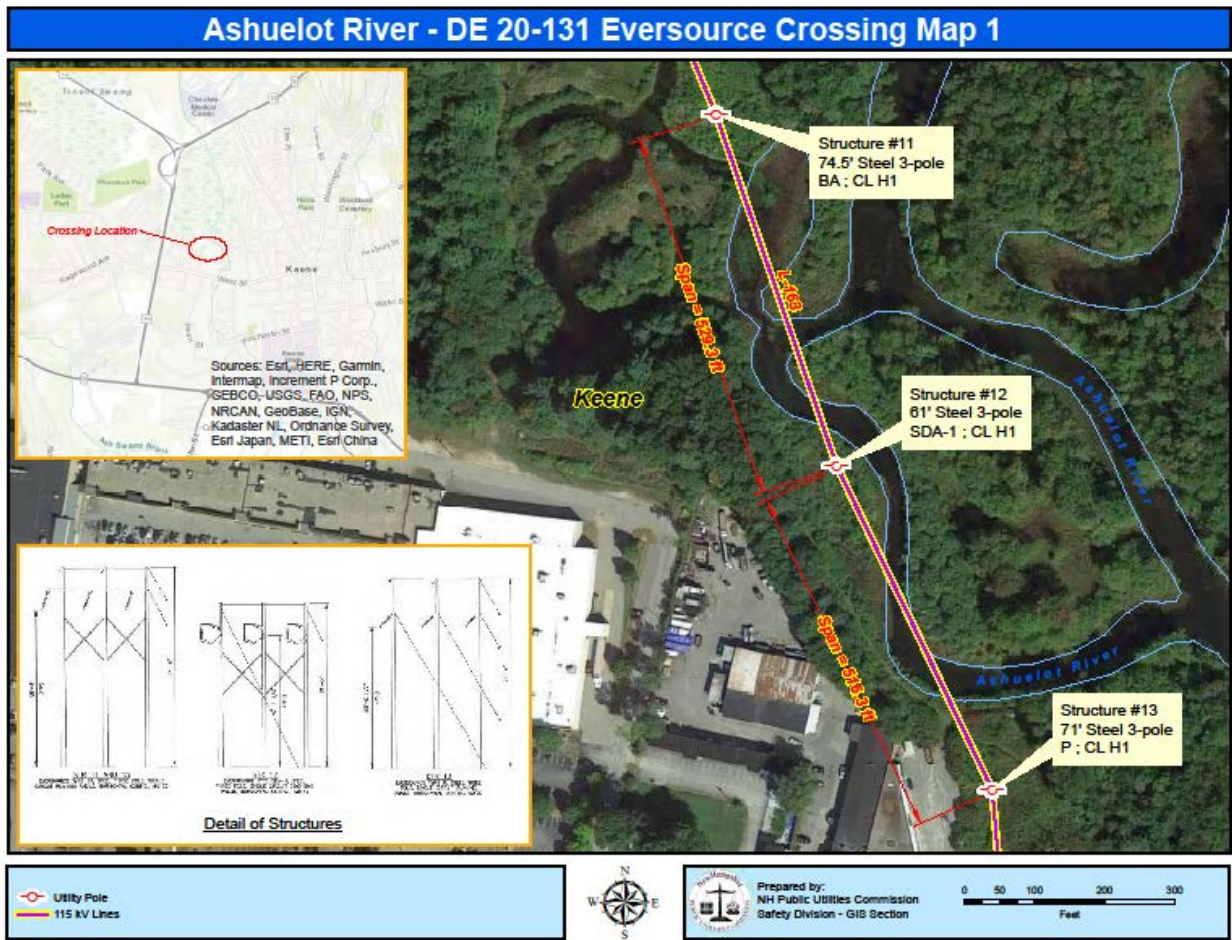
Safety Division Staff concludes the impact to the public will be de minimis and not measurable. The crossings do not appear to affect the rights of the public in the State lands because minimum safe line clearances above the land surface will be maintained at all times.

### **Staff Recommendation:**

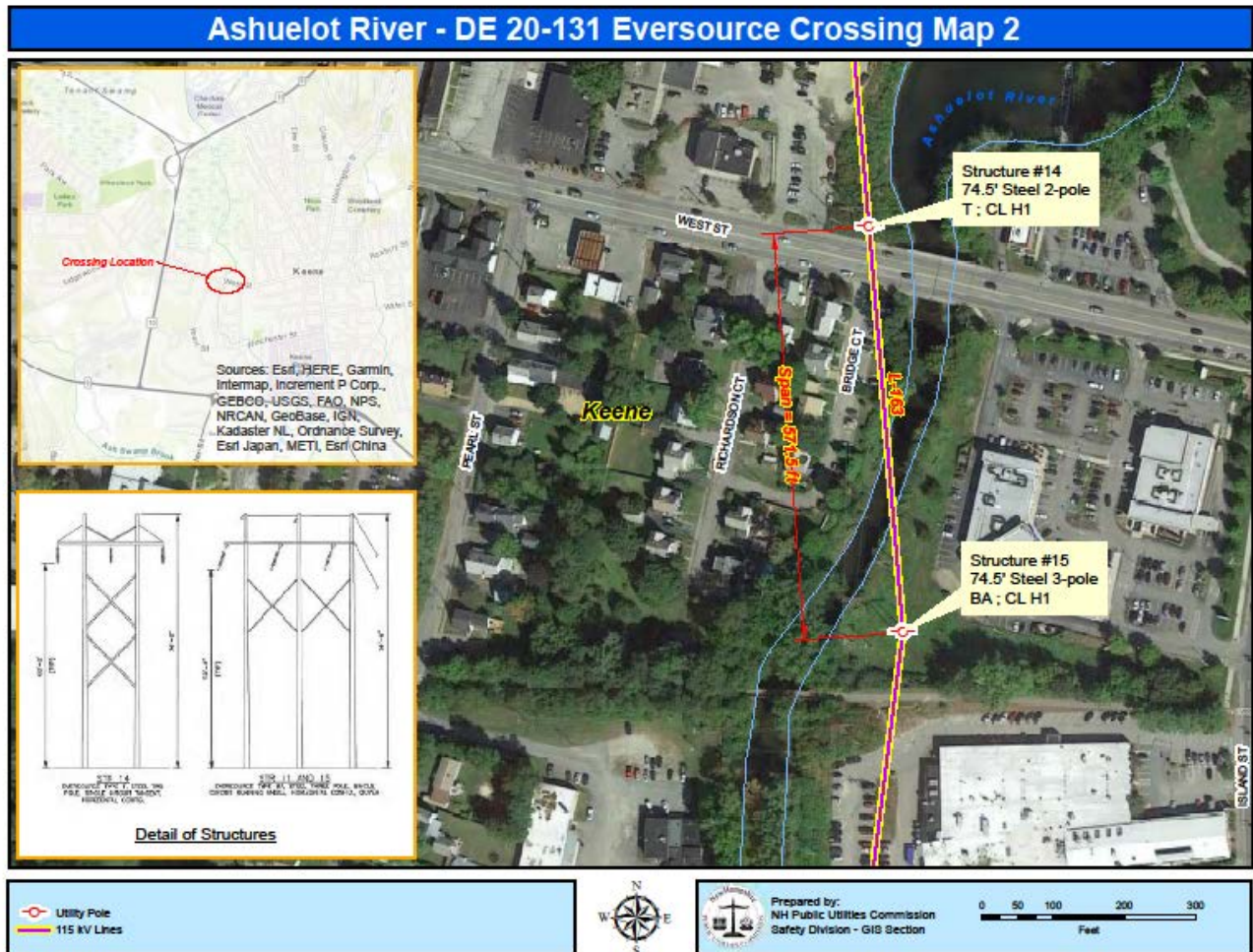
Based on the results of its review of the petition, its attachments, and all other supporting documents filed to this docket, the Safety Division Staff recommends that the Commission:

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

Attachment



**Public Water** as shown above identified in the petition and engineering drawings as State of New Hampshire. The public water crossings are located in the City of Keene. The project will require the Commission to grant a water crossing license related to this project. The license will be for the 115 kV D108 transmission line from Structure # 11 to Structure # 15. Map 1 depicts the first section of river crossing north of West Street from Structure # 11 to Structure # 13, crossing approximately 593.2 feet of public water creating a total span between these structures of 702 feet across the Ashuelot River in the City of Keene, NH. Map 2 depicts the second section of river crossing south of West Street. Safety Division Staff recommend issuing one license for both sections of public water crossings.



**Public Water** as shown above identified in the petition and engineering drawings as State of New Hampshire. The public water crossings are located in the City of Keene. The project will require the Commission to grant a water crossing license related to this project. The license will be for the 115 kV D108 transmission line from Structure # 11 to Structure # 15. Map 2 depicts the second section of river crossing south of West Street from Structure # 14 to Structure # 15 crossing approximately 97.7 feet of public water creating a total span between these structures of 571.5 feet across the Ashuelot River in the City of Keene, NH. Map 1 depicts this first section of river crossing north of West Street. Safety Division Staff recommend issuing one license for both sections of public water crossings.



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