

# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

**DATE:** December 9, 2020

**AT (OFFICE):** NHPUC

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

**SUBJECT:** Docket No. DE 20-185 Public Service New Hampshire d/b/a Eversource Energy  
Petition for a License Amendment to Construct and Maintain Electric Lines Over and across the public waters of the Isinglass River in the City of Rochester and a new license across the public waters of the Oyster River in Lee, 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 supplemental contents and history;
- Applicable State Statute;
- Review of the existing crossing(s) previously 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 November 19, 2020, Public Service New Hampshire d/b/a Eversource Energy (ES), filed a petition for a license amendment pursuant to RSA 371:17 to construct, maintain and operate the Eversource G128 line over four public water crossings, which is a three phase 115 kV transmission line. On December 1, 2020, ES filed a supplemental petition requested by Safety Division Staff to clarify the amendment to the previously licensed crossing spans on the Isinglass River in Rochester, but to also petition for a new license for the public water crossing over the Oyster River in Lee that is currently unlicensed. This is a project to replace five (5) existing wood structures with steel

structures along with the replacement of two (2) existing shield wires with communications fiber optical ground wire (OPGW) over the Oyster River in Lee.

The three crossings over the Isinglass River in Rochester were previously licensed by the PUC as noted in Docket 04-088 pursuant to Order 24,348.

This rebuild project is part of a capital reliability project necessary for the G128 line to continue to meet current as well as future projected electricity demands.

The scope of this project in Rochester is located to the south of Flagg Road and east of Stillwater Circle beginning at Structure #119 then traversing northeast to Structures #120 and #121 thereby creating three public water crossings over the Isinglass River. The scope of this project in Lee is located at the Route 155, Lee Road overpass on the Oyster River, beginning east of the overpass at Structure #20 then heading west crossing Route 155 and the Oyster River to Structure #21. See a detailed NHPUC Safety Division map/schematic in the Attachment of this recommendation.

In ES Exhibit #2, original wood Structure #20 will be replaced with (2)-61.0 ft. OAL Type T, Class H-1 steel poles. All (3) existing ACSR 477 kcmil conductors for the G128 line will be transferred to the new structures with replacement of the (2) existing shield wires with (2) 48 fiber optical ground wire (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 100-year flood elevation water surface will be maintained (at 33.4 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 for water areas not suitable for sail boating.

Original wood Structure #21 will be replaced with (2)-61.0 ft. OAL Type T, Class H-1 steel poles. All (3) existing ACSR 477 kcmil conductors for the G128 line will be transferred to the new structures with replacement of the (2) existing shield wires with (2) 48 fiber optical ground wire (OPGW). Both telecommunication lines will be vertically attached above the conductors. This crossing creates a total span of 470.8 ft. between structures 20 and 21 with 35 ft. spanning public waters.

In ES Exhibit #3, original wood Structure #119 will be replaced with (1)-75 ft. OAL Type ST-1, Class H9 steel pole. All (3) existing ACSR 477 kcmil conductors for the G128 line will be transferred to the new structures along with the (1) existing 24 fiber optical ground wire (OPGW). The telecommunication line 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 100-year flood elevation water surface will be maintained (at 24.1 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 for water areas not suitable for sail boating.

Original Structure #120 will be replaced with (1)-88.5 ft. OAL Type ST-1, Class H9 steel pole. All (3) existing ACSR 477 kcmil conductors for the G128 line will be transferred to the new structures along with the (1) existing 24 fiber optical ground wire (OPGW). The telecommunication line will be vertically attached above the conductors. This first crossing creates a total span of 580.6 ft. between structures 119 and 120 with 125 ft. spanning public waters.

Original wood Structure #121 will be replaced with (1)-92.5 ft. OAL Type SA-2, Class H1 steel pole. All (3) existing ACSR 477 kcmil conductors for the G128 line will be transferred to the new structures along with the (1) existing 24 fiber optical ground wire (OPGW). The telecommunication line 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 100-year flood elevation water surface will be maintained (at 26.9 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 for water areas not suitable for sail boating. This crossing creates two public water spans due to the meandering river with a total span of 691.3 ft. between structures 120 and 121 with two crossings of 105 ft. and 175 ft. spanning public waters.

All (5) replacement structures will be relocated within 10 ft. of their current locations.

The water clearances to the projected 100-year flood elevations were confirmed by Safety Division staff. The water clearances are taken from the projected 100 year flood levels. This is more conservative than the 10 year flood levels allowed by the NESC (note 18 to Table 232-1).

## **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 Isinglass River in Rochester and the Oyster River in Lee.**

The three public water crossings over the Isinglass River were previously licensed by the PUC in DE 04-088, Commission Order 24,348. The one public water crossing over the Oyster River in Lee was not licensed by the PUC.

The Isinglass River, from the juncture of Nippo Brook in Barrington 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 Oyster River in Lee from the juncture of Duby Brook in Madbury is listed under the same category. The entire list of public waters can be accessed through the following web link:

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/olpw.pdf>

The crossings project requires a New Hampshire Department of Environmental Services statutory permit by notification (SPN) 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 Isinglass River in Rochester or the Oyster River in Lee as federal-designated navigable waters. Therefore, no crossing permit is required from USACOE.

**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 Isinglass River in the City of Rochester and the Oyster River in Lee, 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 G128 line, conductors, and related fiber optic communication cables over and across public waters of the Isinglass River in the City of Rochester and the Oyster River in Lee, 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 existing crossings will be exercised without substantially affecting the rights of the public in the public waters of the Isinglass River in Rochester and the Oyster River in Lee. Minimum safe line clearances above the river surfaces and affected shorelines will be maintained at all times. The use and enjoyment of the rivers by the public will not be diminished in any material respect as a result of the 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:**

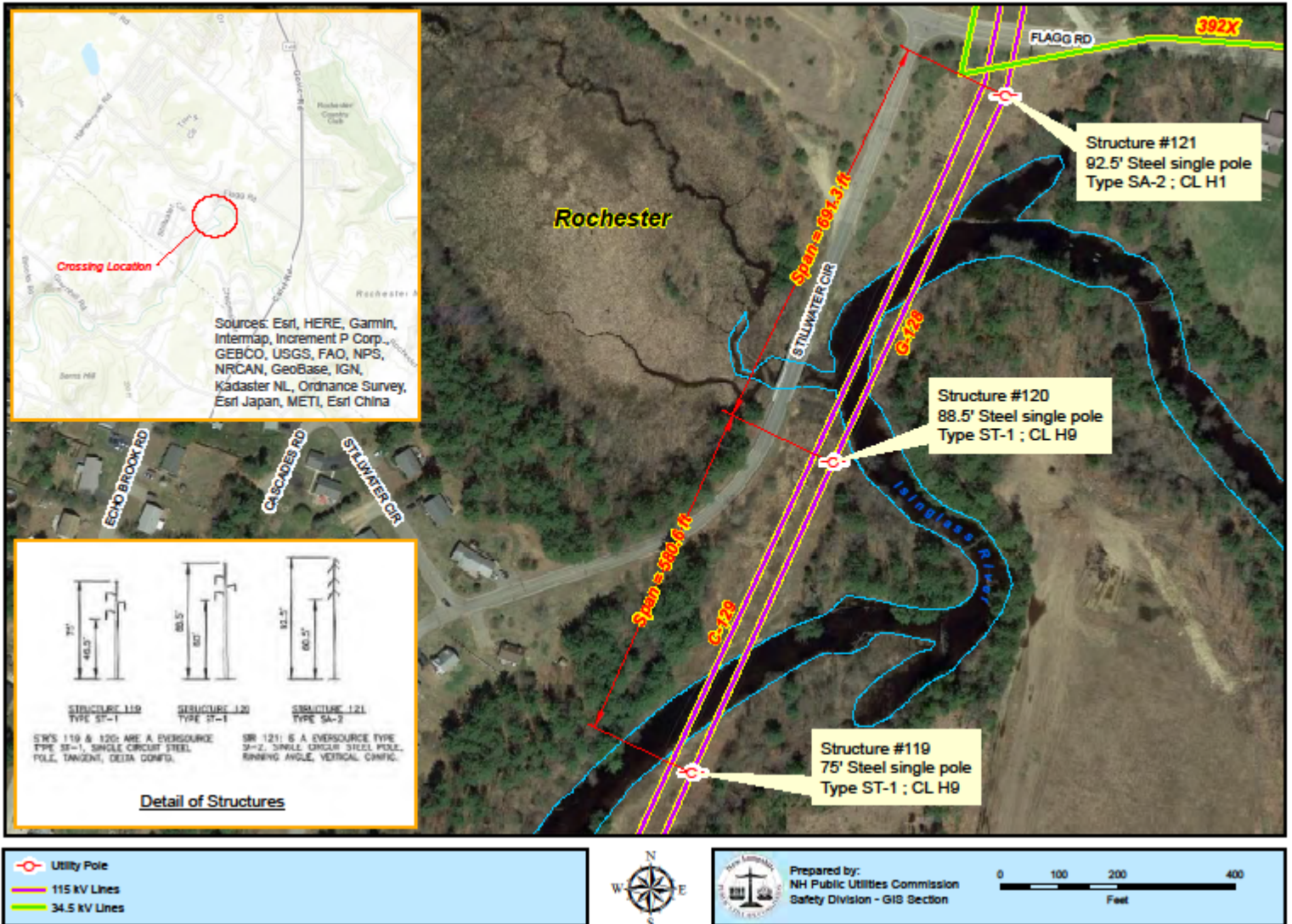
Based on the results of its review of the petition, its attachments, and all other supporting documents filed to this docket, the Safety Division Staff recommends that the Commission:

- 1) Find that the license and amended 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 and amended license to construct, operate and maintain electric lines and telecommunication cables over and across the public waters of the Isinglass River in the City of Rochester and the Oyster River in Lee, New Hampshire, as specified in the petition;
- 3) Issue an Order Nisi and orders for its publication.

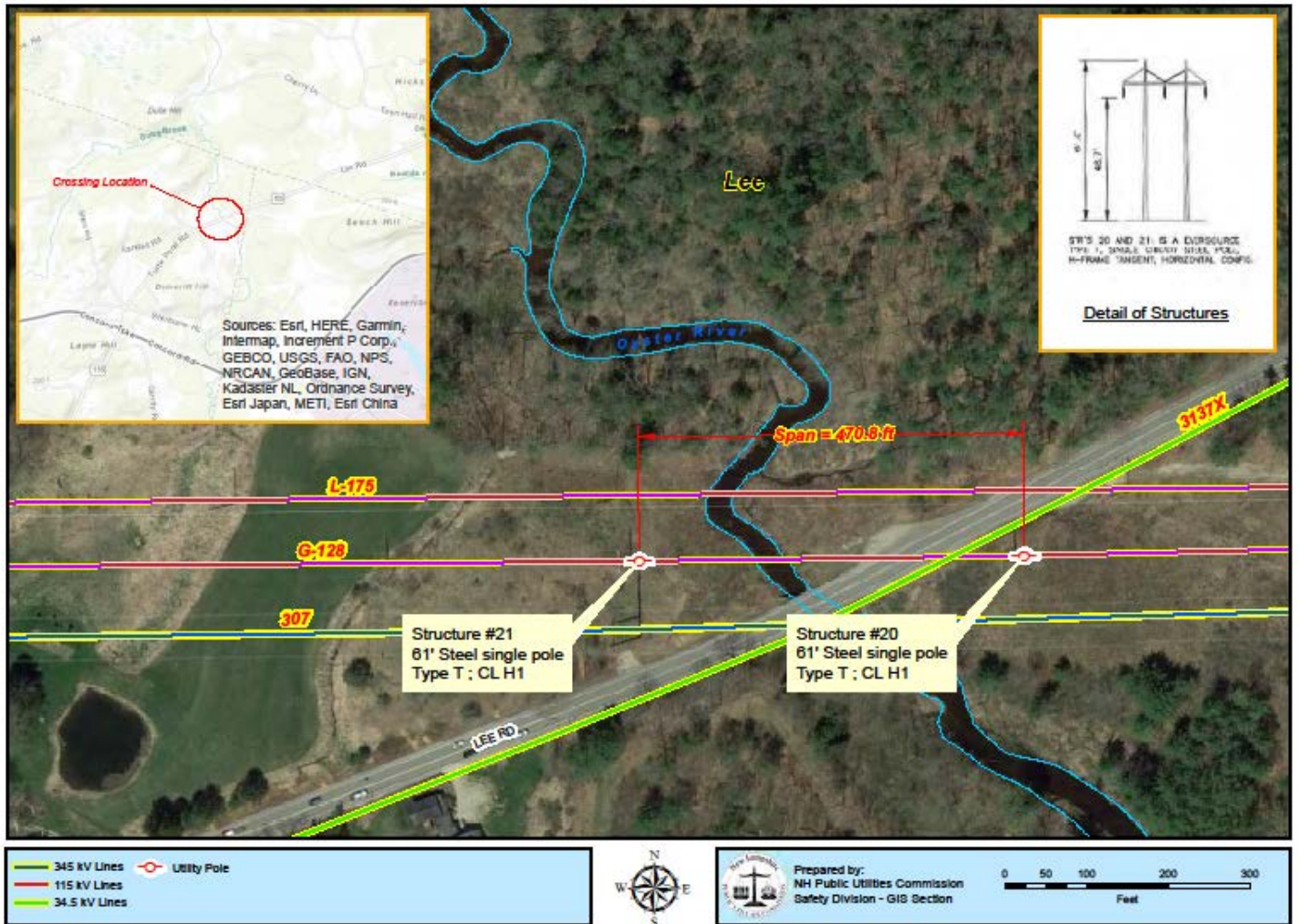
Attachment

## Isinglass River - DE 20-185 Eversource Crossing - Map 1



**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 Rochester. The project will require the Commission to grant a water crossing amended license related to this project. The license will be for the 115 kV G128 transmission line from Structure # 119 northeast to Structures # 120 and # 121. The first crossing from Structure #119 to #120 spans approximately 580.6 feet with 125 feet crossing public waters. The second crossing from Structure # 120 northeast to Structure # 121 spanning approximately 691.3 feet with 105 feet and 175 feet crossing public waters over the Isinglass River.

## Oyster River - DE 20-185 Eversource Crossing - Map 2



**Public Water** as shown above identified in the petition and engineering drawings as State of New Hampshire. The public water crossing is located in Lee. The project will require the Commission to grant a water crossing license related to this project. The license will be for the 115 kV G128 transmission line from Structure # 20 west to Structure # 21 spanning approximately 470.8 feet with 35 feet crossing public waters over the Oyster River.



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