

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: April 3, 2020

AT (OFFICE): NHPUC

FROM: Paul Kasper PGK
Assistant Director – Safety Division

SUBJECT: Docket No. DE 19-149 Public Service New Hampshire d/b/a
Eversource Energy
Petition for a License to Construct and Maintain Electric Lines Over and
across the North Branch River and Steels Pond and Land Owned by the
State in the Towns of Hillsborough and Antrim, New Hampshire
Staff Recommendation

TO: Debra Howland, Executive Director
Thomas Frantz, Director, Electric Division
Richard Chagnon, Assistant Director, Electric Division
Lynn Frabrizio, Senior Staff Attorney

CC: Randall Knepper, 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 September 12, 2019, 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 X104 line, which is a 115 kV transmission line. This is a project to modify or rebuild (7) seven structures on its existing X104 transmission line. No conductors, shield wire or neutral wire will be replaced in the project. All wires shall be transferred from existing structures to new structures replaced at the same locations. The existing Steels Pond crossing in the Town of Antrim had been previously licensed by the Commission, under Order No. 18,782, dated August 4, 1987.

The X104 Line crossing of the State's land parcel in the Town of Antrim, New Hampshire had not been previously licensed, as this parcel was in private ownership when the X104 Line was originally constructed, and no Commission license was required. The existing water crossings over and across the North Branch River in Antrim and Hillsborough were not previously licensed. The existing X104 line structures and associated transmission components are approximately 65 years old, have been subject to environmental damage and require replacement for the line to continue to function safely and reliably. This structure replacement and repair project is part of a capital reliability project - necessary for the X104 line to continue to meet current as well as future projected electricity demands. See a detailed NHPUC Safety Division map/schematic in the Attachments A, B and C of this recommendation.

The State of New Hampshire Water Resources Board acquired the subject parcel Map 214, Lot 34, Antrim, and the acquisition was subject to the existing Eversource right of way on the property. The structure replacements of the X104 Line crossing of the State's land will be newly licensed under this petition.

In their petition Eversource states that between 2016 and 2017, Eversource completed (2) two structure replacements, (Str. 4 and 45) along the existing X104 Transmission Line impacting the North Branch River and Steels Pond crossings, and that a petition was not submitted prior to this work being completed, and as such, will be licensed under this petition.

In ES Exhibit #2 Structure # 3 will be constructed with 3-65 ft.(OAL) CL H1 LD steel poles The structure will have conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The fiber optic cable clearance requirements were met using the NESC heavy conditions (0.5 inch radial ice) and at 32 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 fiber optic cable to the water surface will be maintained at (28.3 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 18.6 ft. is required by the NESC Table 232-1.

Structure # 4 was constructed with 2-70 ft.(OAL) CL H1 LD steel poles The structure has conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The fiber optic cable clearance requirements were met using the NESC heavy conditions (0.5 inch radial ice) and at 32 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 fiber optic cable to the land surface will be

maintained at (21.9 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. The span between str# 3 and str# 4 is 554.6 ft.

Structure # 5 will be constructed with 2-60 ft. (OAL) CL H1 LD steel poles The structure will have conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The span between str# 4 and str# 5 is 555.1 ft.

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 12 to Table 232-i). ES uses floodwater elevations for the North Branch River in the Town of Hillsborough that are identified on FEMA flood map #33011C0045D. The 100-year flood elevation for the river in this location is approximately 620 feet, and is based on the North American Vertical Datum of 1929 (NAVD88). The Safety Division verified the 620-foot flood level from the FEMA flood map.

In ES Exhibit #3 Structure # 38 will be constructed with 2-70 ft. (OAL) CL H1 LD steel poles The structure will have conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The fiber optic cable clearance requirements were met using the NESC heavy conditions (0.5 inch radial ice) and at 32 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 fiber optic cable to the land surface will be maintained at (53.3 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 18.6 ft. is required by the NESC Table 232-1.

Structure # 39 will be constructed with 3-60 ft. (OAL) CL H1 LD steel poles The structure will have conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The span between str# 38 and str# 39 is 715.9 ft. with 39.8 feet crossing state owned land.

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 12 to Table 232-i). ES uses floodwater elevations for the North Branch River in the Town of Antrim that are identified on FEMA flood map #33011C0139D. The 100-year flood elevation for the river in this location is approximately 772.2 feet, and is based on the North American

Vertical Datum of 1988 (NAVD88). The Safety Division verified the 772.2-foot flood level from the FEMA flood map.

In ES Exhibit #4 Structure # 44 will be constructed with 2-80 ft. (OAL) CL H1 LD steel poles The structure will have conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The fiber optic cable clearance requirements were met using the NESC heavy conditions (0.5 inch radial ice) and at 32 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 fiber optic cable to the land surface will be maintained at (31.0 feet). Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 18.6 ft. is required by the NESC Table 232-1.

Structure # 45 was constructed with 1-85 ft. (OAL), 1-90 ft (OAL), and 1-95 ft. (OAL) CL H1 LD steel poles The structures have conductors for the 115 kv X104 transmission line consisting of (3) 336.4 kcmil ACSR 26/7 cables and (3) #6 Copperweld stranding neutral wires. The fiber optic cable will be (1) ADSS-72 Fiber and will be vertically attached 10 ft below the conductors. The span between str# 44 and str# 45 is 688.2 ft.

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 12 to Table 232-i). ES uses floodwater elevations for Steels Pond in the Town of Antrim that are identified on FEMA flood map #33011C0136D. The 100-year flood elevation for the river in this location is approximately 852.1 feet, and is based on the North American Vertical Datum of 1988 (NAVD88). The Safety Division verified the 852.1-foot flood level from the FEMA flood map.

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 Merrimack River

This public water crossing license application for the North Branch River is part of the reliability replacement project on the X104 (115 kV) Transmission Line for ES and had not been previously licensed by the Commission.

The North Branch River, Outflow of Robb Reservoir in Stoddard 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:

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

A New Hampshire Department of Environmental Services (NHDES) Shoreland Permit by Notification application is required for construction activities in the vicinity of the North Branch River. The permit by notification was approved by NHDES in June 2019 (NHDES File #2019-00300).

The U.S. Army Corps of Engineers (ACOE) does not regulate the subject portions of the Steels Pond or North Branch River as navigable waters and does not require a crossing permit from ACOE.

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 North Branch River and Steels Pond. Minimum safe line clearances above the river and pond surfaces and affected shorelines will be maintained at all times. The use and enjoyment of the river and pond by the public will not be diminished in any material respect as a result of the overhead line crossings.

Review of land ownership of proposed pole structures

In its petition, ES specifies that the re-construction of this land crossing is on the State of New Hampshire owned land in the Town of Antrim, New Hampshire

Review of NESC code requirements as described in Puc 300

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

each utility shall 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 this 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 2012 National Electrical Safety Code C2-2012.

Safety Division Staff reviewed the specifications related to the design and re-construction of this crossing project as provided in the petition, the attachments, and all supplemental support documents, and found them to be in conformance with the applicable sections of NESC code C2-2012 and Puc 300.

Review of public need and public impact

In order to meet the reasonable requirements of electric service to the public, ES proposes to re-construct and maintain a three-phase 115 kV transmission line, designated as the X104 line and a fiber optic cable over and across the North Branch River and over and across Steels Pond and Land owned by the State in the Towns of Antrim and Hillsborough, 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 licenses for these crossings may be exercised without substantially affecting the rights of the public in the State land in the Town of Antrim and without substantially affecting the rights of the public in the public waters of the North Branch River and Steels Pond. Minimum safe line clearances above the river and pond surfaces and affected shorelines will be maintained at all times. The use and of which is the subject of this petition. Minimum safe line clearances above the land surfaces will be maintained at all times. The use and enjoyment by the public of these lands will not be diminished in any material respect as a result of the modification and replacement of the existing overhead line crossings.

This project does not require use and occupancy agreements be in place prior to construction of this crossing from the New Hampshire Department of Transportation.

Safety Division Staff concludes the impact to the public will be de minimis and not measurable. The crossing does not appear to affect the rights of the public on the State land 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 licenses ES requests in this docket may be exercised without substantially affecting the public rights in State lands which are the subject of the petition;
- 2) Grant ES a license to construct, operate and maintain electric lines, including neutral and fiber optic cable over and across the State land in the Town of Antrim New Hampshire, as specified in the petition; and
- 3) Find that the license ES requests in this docket may be exercised without substantially affecting the public rights in the public waters which are the subject of the petition;
- 4) Grant ES a license to construct, operate and maintain electric lines, including neutral and fiber optic cable over and across the public waters of the North Branch River and Steels Pond in the Towns of Antrim and Hillsborough, New Hampshire, as specified in the petition;
- 5) Issue an Order Nisi and orders for its publication.

Staff Attachments

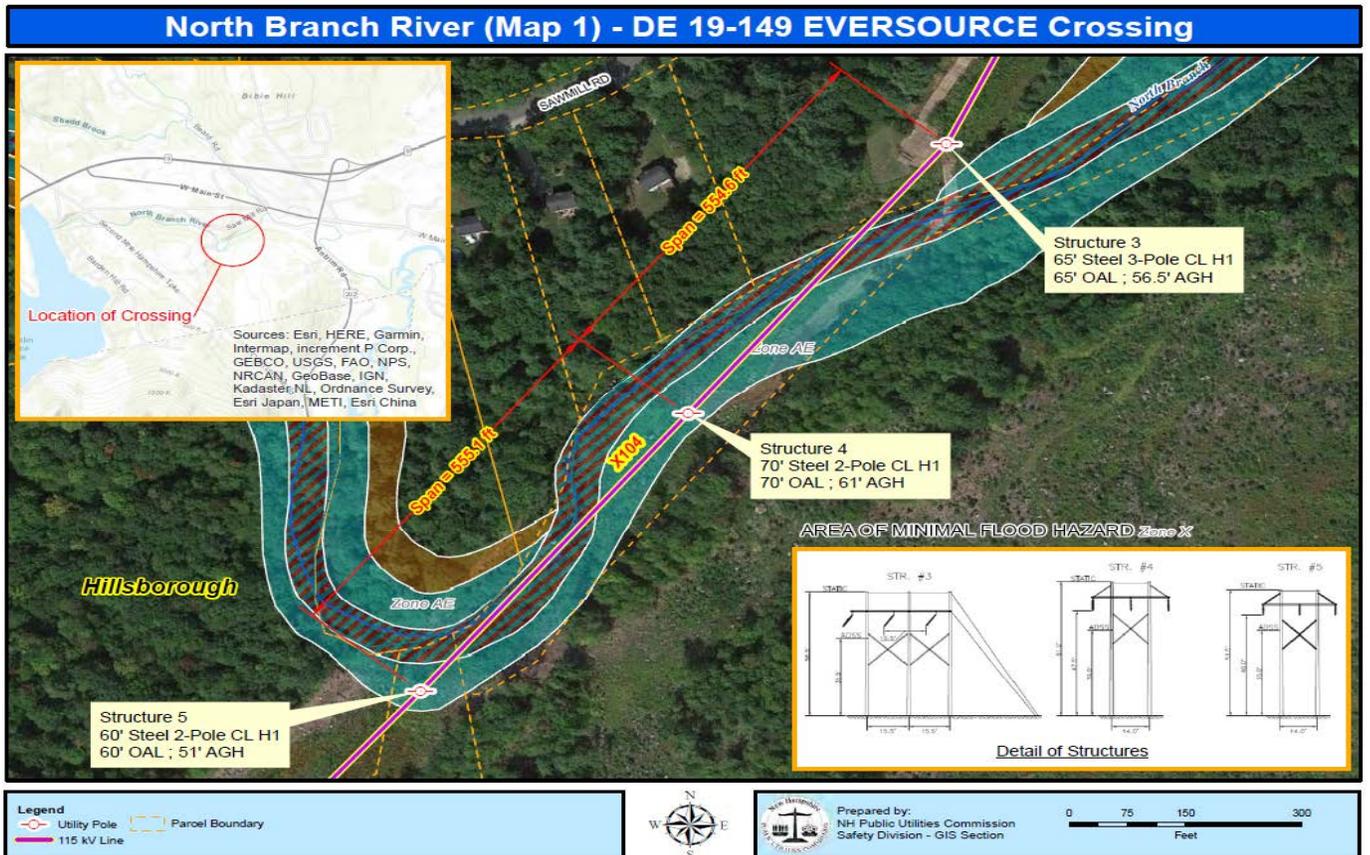


Figure 1: 115kV line, designated as the X104 Transmission Line, is a span of approximately 554.6 feet between structures # 3 and # 4, and a span of approximately 555.1 feet between structures # 4 and # 5 across the North Branch River in the Town of Hillsborough, NH.

Attachment B

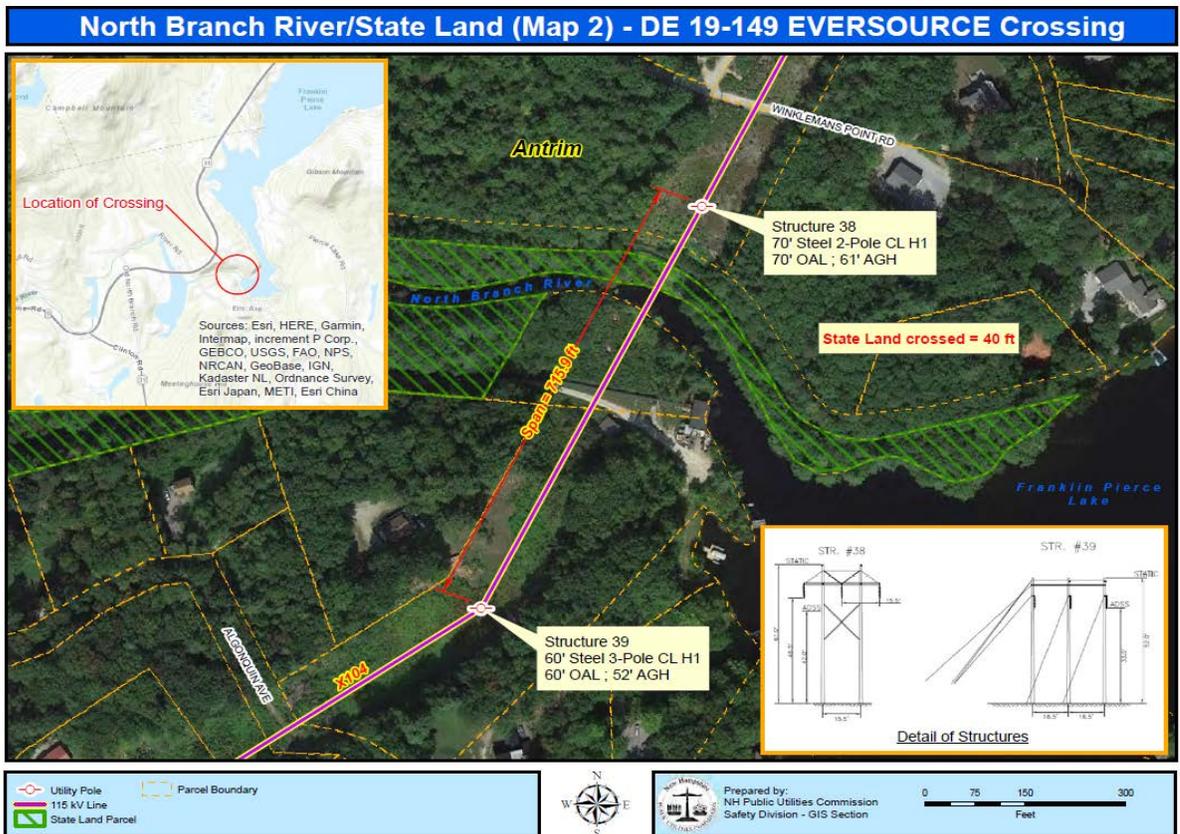


Figure 1: 115kV line, designated as the X104 Transmission Line, is a span of approximately 715.9 feet between structures # 38 and # 39, across the North Branch River and 40 ft across State Land in the Town of Antrim, NH. State owned land is shown above as green hash marks

Attachment C

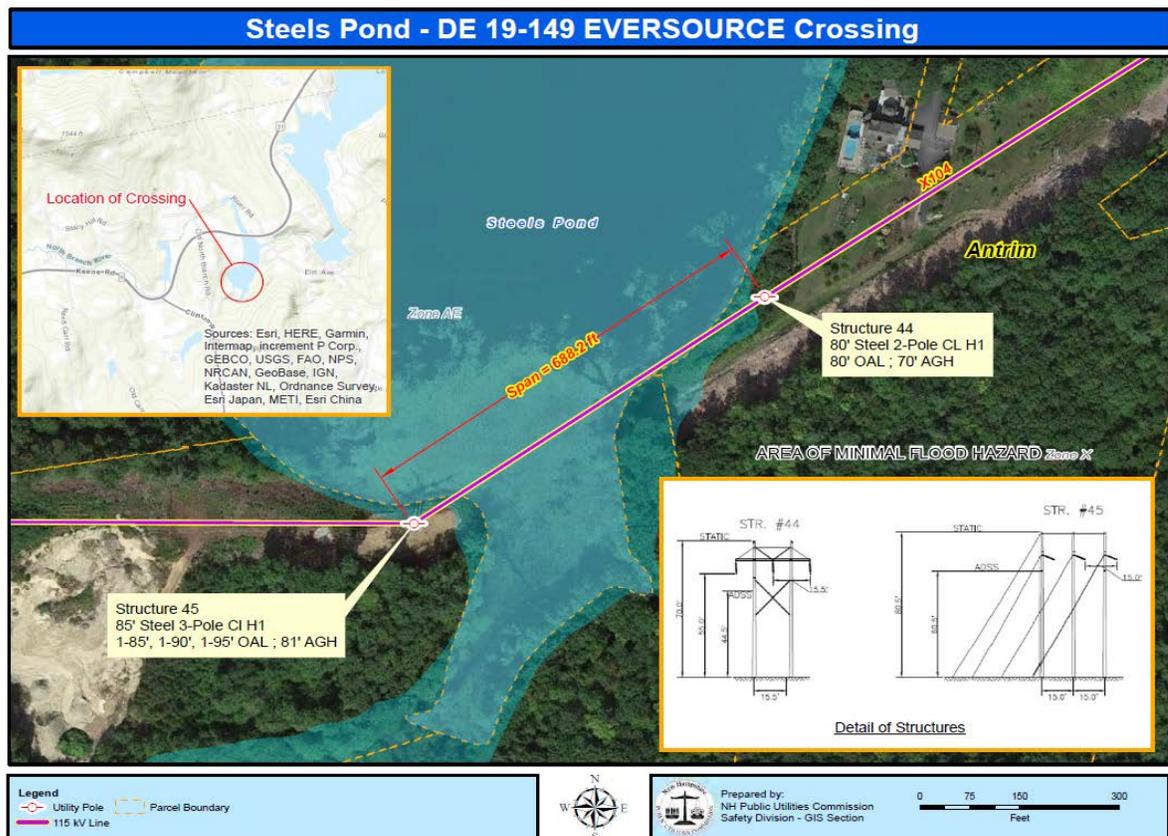


Figure 1: 115kV line, designated as the X104 Transmission Line, is a span of approximately 688.2 feet between structures # 44 and # 45, across Steels Pond in the Town of Antrim, NH.

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