

**STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

DE 15-460, DE 15-461, DE 15-462, and DE 15-463

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE D/B/A EVERSOURCE
ENERGY AND NORTHERN PASS TRANSMISSION, LLC**

Petitions for Licenses to Cross Public Waters and Public Lands

Order Granting Licenses

ORDER NO. 26,025

June 16, 2017

APPEARANCES: McLane Middleton, PA on behalf of Northern Pass Transmission, LLC, by Thomas B. Getz, Esq., and Marvin Bellis, Esq.; Christopher J. Allwarden, Esq., on behalf of Public Service Company of New Hampshire d/b/a Eversource Energy; New Hampshire Attorney General's Office, on behalf of the Department of Resources and Economic Development and the Adjutant General's Office, by Elizabeth Mulholland, Esq.; and Suzanne G. Amidon, Esq. on behalf of Commission Staff.

In this Order, the Commission grants the licenses to cross public waters and public lands requested by Northern Pass Transmission, LLC, and Public Service Company of New Hampshire. The various requests for licenses to cross state waters and lands were submitted as part of the filing before the Site Evaluation Committee for approval of a certificate of site and facility for the Northern Pass Project, a 192 mile transmission line designed to extend from New Hampshire's Canadian Border to Deerfield, New Hampshire. In granting the licenses, the Commission finds that the crossings do not interfere with the public's use of the land and waters affected by the crossings.

The Commission conditions this grant of license on the SEC approval of NPT's request for a certificate of site and facility for the Northern Pass Project.

I. BACKGROUND

On October 19, 2015, Northern Pass Transmission, LLC (NPT), and Public Service Company of New Hampshire d/b/a Eversource Energy (Eversource) filed petitions for licenses to cross public waters (DE 15-460, filed by NPT and DE 15-462, filed by Eversource) and to cross public lands and state-owned railroads (DE 15-461, filed by NPT, and DE 15-463, filed by Eversource).

All four petitions were filed in connection with an application to the New Hampshire Site Evaluation Committee (SEC) for a certificate of site and facility to construct a 192 mile long, high-voltage, electric transmission line from the Canadian border to Deerfield (Northern Pass). Approximately 158 miles of Northern Pass will be operated as direct current (DC) at 320 kilovolts (kV), and the remaining approximately 34 miles will be operated as alternating current (AC) at 345 kV. NPT's petition in DE 15-460 requested 25 licenses to cross public water at 25 locations along the line, and its petition in DE 15-461 requested 14 licenses to cross public lands in 14 locations along the line.

Eversource's petitions requested licenses to relocate existing lines for purposes of allowing NPT to construct transmission facilities in the same rights-of way. In DE 15-462, Eversource requested licenses to relocate lines crossing public waters in 15 locations, and in DE 15-463, Eversource requested licenses to relocate lines crossing public lands in 13 locations. Eversource said the relocations of these crossings are necessary for the construction of the Northern Pass Project.¹

The Commission issued Orders of Notice on March 10, 2016. The Commission directed NPT and Eversource to provide copies of the Orders of Notice to all the towns where NPT and

¹ Table 1 of Staff's overall recommendation at Tab 30 of <http://www.puc.nh.gov/Regulatory/Docketbk/2015/15-462.html> is a complete list of the crossings that Staff reviewed in detail for licenses.

Eversource proposed crossings, and to provide a copy of the appropriate Order of Notice to each owner of lands within 100 feet of the proposed crossing of affected public waters. In addition, the Commission required NPT and Eversource to provide copies of the Orders of Notice to the Office of the Attorney General of New Hampshire.

In each Order of Notice, the Commission stated that the issues in the docket concerned whether the crossings substantially affected the public rights in the waters and lands, whether the crossings will be constructed and maintained according to the standards of the National Electrical Safety Code (NESC), and whether and what amount of compensation NPT should pay to the bordering landowners, the state, or both.

Subsequently, the Commission granted intervention to the following parties: Town of Franconia, City of Concord (Concord), Society for the Protection of New Hampshire Forests (SPNHF), and Franconia Community Church of Christ in DE 15-460; the Department of Resources and Economic Development (DRED), and the Adjutant General's Office (AGO) in DE 15-461; Concord and SPNHF in DE 15-462; and DRED and the AGO in DE 15-463.

On June 28, 2016, the Commission issued Order No. 25,910, which clarified that the Commission's review of the requested licenses would focus on the functional use and safety of the proposed crossings, leaving environmental and aesthetic issues to the SEC. Order No. 25,910 at 11. The Commission reaffirmed that decision in Order No. 25,939 (August 24, 2016) (Order Denying Motion for Reconsideration).

The petition and subsequent docket filings, other than any information for which confidential treatment is requested of or granted by the Commission, are posted to the Commission's website at <http://www.puc.nh.gov/Regulatory/docketbk-2015.html>.

Staff filed its recommendation concerning the filing on February 27, 2017. The Commission held a hearing on April 3, 2017, to hear from intervenors and members of the public on the issue of whether the proposed crossings interfered with the public use of the land or waters. No member of the public attended the hearing. The Commission granted administrative notice to Staff's recommendation at hearing.

II. STAFF RECOMMENDATION

A. Review Process

Staff described the process used in connection with a standard petition for a license to cross public waters or public lands. Staff said it typically reviews and considers the following elements in a petition for a license to cross public waters or public lands:

- Petition contents and history;
- Applicable state statutes;
- Crossings included in the petition that do not require a license;
- Whether the license can be exercised without substantially affecting the public rights in waters or lands;
- Whether any of the proposed relocations of existing crossings are already licensed by the Commission;
- Property rights (deeds, leases, easement documents, etc.) for each of the crossing facility locations;
- Clearances of electric power lines from railroad, land, and water crossings; and
- Construction and maintenance in accordance with the standards of the NESC and the requirements of N.H. Code of Admin. Rules Puc 300.

In this matter, in addition to the standard review, Staff employed other measures to examine each of the public waters and state-owned public lands crossings along the full length of Northern Pass. Staff used a comprehensive verification scheme applying Geographic Information Systems to review the locations of the crossings in context with surrounding

residential and commercial buildings, existing utilities, and other energy infrastructure. Staff examined proposed support structures and parcel information regarding easement documentation and land use. Because state lands are involved, an historical verification was made on land crossings to assess if easement documentation predated the state acquiring the lands and to also consider if construction of Northern Pass would require relocation of existing transmission or distribution lines, which would necessitate new licenses to be issued.

Staff issued seven sets of data requests to clarify certain aspects of the petitions, conducted two technical sessions, solicited specific comment from the Adjutant General and DRED, requested additional information from the N.H. Department of Transportation, retained the assistance of a third-party engineer to assist in the analysis of whether the lines will be positioned in accordance with the NESC, performed limited field inspections, and researched and collected land ownership documents, copies of deeds and easements from public records. To facilitate its review, Staff combined the four petitions and grouped the license requests geographically from north to south, depicted on 24 maps that it prepared for use in its review. Staff presented its recommendation by grouping the maps into four separate zones, north to south. Each of the four zones has a corresponding recommendation. *See* Tab 30 at <http://www.puc.nh.gov/Regulatory/Docketbk/2015/15-462.html>.²

B. Standard of Review

Staff reviewed each crossing to determine whether the crossing would affect the public rights in the waters or lands in question. The standard used by Staff to pass this threshold requires the crossing to permit the public's rights to functional use and safety of the waters or lands at the proposed crossing locations. Staff said that the functional use by the public in and

² Tab 30 contains the overview describing Staff's investigation, and Maps 1-8, Maps 9-12, Maps 13-19, and Maps 20-24. Each of the four Map sets is accompanied by the corresponding recommendation.

around the crossing locations may vary from one site to the next. In connection with this inquiry, Staff reviewed how the public may use the waters and lands in each of the proposed crossing locations and then assessed the information presented in the filing to determine whether the rights of the public in the waters or lands would be substantially affected.

In arriving at its conclusion that the crossings under review would not interfere with use of the public lands, Staff identified the functional uses of various parcels as follows:

State Rail Corridors

- Commercial freight transportation on active railroads, year round
- Recreational cross country skiing, snowmobiling and snowshoeing
- Dog sledding and dog sled training
- Recreational use for bicycling, walking, hiking, running, orienteering

Department of Transportation Land

- Outdoor State Police practice firing range
- Highway buffer

Adjutant General Land

- Land designated for N.H. National Guard Regional Training Institute
- Future 24-foot wide drive to Army National Guard Readiness Center
- Field training exercises

DRED Land

- Traditional hunting and trapping
- Recreational snowmobiling and cross country skiing
- Timber management
- Walking trails.

The principle use of public waters is recreational (e.g. boating and swimming).

The standard of review that Staff uses for determining safety of any proposed public water or land crossing relies primarily on the guidelines provided in the most currently available version of the NESC. The National Electrical Safety Code is the industry standard used by project developers and utility operators for the safe design, construction, operation, and maintenance of electric distribution and transmission systems. The NESC is also recognized by N.H. Code of Admin. Rules Puc 306.01 as meeting good utility practice. Throughout the review, Staff references technical design specifications provided in the petitions for each crossing and identifies key NESC clearance and other safety requirements that were used to make its assessments of conformance for the proposed crossing.

C. Overhead Clearances for Public Lands, Railways, and Public Waters

Staff said it conducted an extensive process to verify the clearances in the petitions for the crossings of public lands, including state-owned railroads. Staff used information provided in the appendices included in the petition, and the diagrams depicted in the materials, to compute the designed clearances. Excluding the crossings of rivers and streams not considered by DES to be “public waters,” Staff reviewed 57 overhead crossings. The 57 crossings included 30 public water crossings (16 by NPT and 14 by Eversource), 15 public land crossings (8 by NPT and 7 by Eversource), and 12 railway crossings (6 each by NPT and Eversource).

To evaluate the clearances proposed in the filings, Staff used commercial software (SAG 10) from Southwire, which is often employed by the electric industry for sag-tension calculations. NPT and Eversource used software with a more complex model (PLS-CADD) from Power Line System, which uses high-resolution, three-dimensional survey information and includes additional elements in the evaluation of sag-tension on conductors constructed on

crossing structures located on slopes and other geographical features. Staff determined three levels of acceptability when comparing the results of the different modeling data, and found that in all instances the crossings, as proposed, were appropriately designed.

For crossings over railways, Staff noted that the licenses for the railway corridors prepared by NPT and Eversource were designed with clearances that assumed the railway would be replaced.

D. Overhead Water Crossings

In reviewing all water crossings, Staff uses the N.H. Department of Environmental Services (DES) official list of public waters. See <http://des.nh.gov>. To determine appropriate design of the crossings, Staff identifies an appropriate flood level. Here, Staff used both the 10-year flood and 100-year flood information that was available. Staff explained that while NESC references only the 10-year flood elevation in its water crossing criteria, Staff used the more conservative 100-year flood information, if available, in evaluating line clearances.

Staff found all the overhead water crossings to be appropriately designed. Staff pointed out that the proposed Connecticut River crossing in Pittsburg may require review by the Army Corps of Engineers. The Connecticut River is a navigable river, subject to the jurisdiction of the Army Corps of Engineers. Staff recommended that if it has not already done so, NPT should notify the Army Corps of Engineers about this crossing.

Staff noted that DES has jurisdiction over shoreland permits and other water quality permitting required for the Northern Pass Project, as well as authority to review the project in its entirety with respect to appropriate environmental permitting.

E. Overhead Land Crossings—Map Discrepancies

Staff noted five discrepancies in state land parcels between those described in the filings and the maps produced by Staff. According to Staff, the discrepancies resulted in differences in the total length of a given crossing and, as a result, could impact the amount of state land that is being granted for a license. The discrepancies affected Map 3 for Nash Stream Forest, Map 4 for Percy State Forest, Map 6 for Cape Horn State Forest, Map 18 for the William H. Thomas State Forest, and Map 24 for Bear Brook State Park. In each of the five instances, the data submitted by NPT differed from DRED's survey data. Staff used the DRED data in examining the crossing.

For the Nash Stream Forest, Staff's use of the DRED data resulted in the actual license requiring 238 feet more than requested, but it did not affect the number of poles in the Nash Stream Forest, or Staff's determination that the crossing was appropriately designed.

With respect to Percy State Forest, use of the DRED data resulted in the actual license requiring 98 feet more than requested. This did not affect the number of poles located in the Percy State Forest, or Staff's decision that the crossing was appropriately designed.

The Cape Horn State Forest crossings affected by the DRED survey data involved both an NPT and Eversource crossing. The NPT license required an additional 62 feet, and the Eversource crossing required 49 feet more than requested. As a result, two additional crossing structures will be located in Cape Horn State Forest. Staff concluded that the crossings were otherwise appropriately designed.

In the William H. Thomas State Forest, the use of the DRED data did not result in any change to the requested 2,954 foot license.

Finally, for Bear Brook State Park, use of the DRED data shortened the license required by 2 feet, but otherwise did not impact the design of the crossing.

F. Underground Water Crossings

Staff reviewed four of eight underground water crossings.³ Of the four reviewed, three are underground crossings of rivers constructed with use of a directional drill. Staff determined that each was appropriately designed. The remaining underground water crossing has a 36-inch diameter steel casing containing two, separate 8-inch diameter density polyethylene conduits for the direct current conductors. Thermal grout will be used to fill the void between the 8-inch diameter cables and communication cables. The communication cables include 3-inch diameter conduits within the casing, for fiber optic communications, heat sensing cables for finding faults, and an empty cable duct. Based on its review, staff determined that these four underground water crossings were appropriately designed.

G. Miscellaneous

Staff has consistently used the DES Official List of Public Waters, referenced in Section E above, to determine whether any particular crossing involves public waters. In the course of its review in this matter, Staff identified six crossings of waters that were submitted by NPT and Eversource but did not meet the current definition of public waters. Those crossings are as follows:

- DE 15-460, Part B, Ham Branch Crossing 1 in Easton (underground) by NPT
- DE 15-460, Part B, Ham Branch Crossing 2 in Easton (underground) by NPT
- DE 15-460, Part B, Ham Branch Crossing 3 in Easton (underground) by NPT
- DE 15-460, Part B, Gordon Pond Brook Crossing in Woodstock (underground) by NPT

³ The remaining four underground water crossings are discussed in the next section.

- DE 15-460, Appendix 17, Lamprey River, Deerfield (overhead) by NPT
- DE 15-462, Table 1, Appendix 15, Lamprey River Deerfield (overhead) by Eversource.

The Ham Branch and the Gordon Pond Brook where the listed crossings in Easton and Woodstock are proposed are not considered public rivers or streams. Neither is listed on DES's official list of public rivers and streams. The affected portion of the Lamprey River in Deerfield is not considered a public river or stream and is also not listed on DES's official list of public waters and streams. Other portions of the Lamprey River in Deerfield and other towns are considered public waters, but the location of the crossing in this instance is upstream from the portions of the river considered to be public waters.

Staff also identified seven existing water crossings where the Commission had not previously granted Eversource a license to construct the crossings that are in existence. According to Staff, the absence of a license was confirmed by Eversource. Staff recommended that Eversource apply for licenses for the crossings regardless of whether the SEC approves a certificate of construction for the Northern Pass Project. Staff identified the crossing locations as follows:

- Johns River, Dalton, Q195 Circuit 115kV (PUC Map 8)
- Johns River, Dalton, X178 Circuit 115kV (PUC Map 8)
- Ammonoosuc River, Bethlehem, X178 Circuit 115kV (PUC Map 9)
- Ammonoosuc River, Bethlehem, 348 Circuit 34.5kV (PUC Map 9)
- Gale River, Franconia, 348X1 Circuit 34.5kV (PUC Map 10)
- Pemigewasset River, Bridgewater, E115 Circuit 115kV (PUC Map 13)
- Squam River, Ashland, E115 Circuit 115kV (PUC Map 14).

H. Recommendation

Staff recommended that the Commission grant licenses for crossings located as described in Staff's filings, and designed and constructed consistent with the plans reviewed by Staff. Staff recommended that NPT and Eversource be required to construct, maintain, and operate the lines across public lands and waters consistent with the NESC as more particularly discussed in Staff's recommendation. Staff also requested that NPT and Eversource provide Staff with the as-built specifications of the crossings once construction is completed. Finally, Staff recommended that the licenses be conditioned on the SEC's approval of the Northern Pass Transmission project and any further conditions the SEC may add to the certificate of construction, if such is issued.

III. COMMISSION ANALYSIS

Under RSA 371:17, anyone wishing to "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," when such facilities are necessary to meet the reasonable requirements of service to the public, must obtain a license from the Commission. Under RSA 371:20, the Commission shall grant a license if it finds that the license "may be exercised without substantially affecting the public rights in said waters or lands." RSA 371:17 defines public waters to include all ponds of more than 10 acres, tidewater bodies, and such streams or portions thereof that the Commission may prescribe. DES prepares, maintains, and publishes an official list of all public waters in the state.

Based on the information presented in the petitions of NPT and Eversource, and Staff's recommendation, we find that the proposed crossings are necessary to meet the reasonable requirements of service to the public, as required by RSA 371:17. We find that the requested licenses may be exercised without substantially affecting the public rights in the affected public

waters and lands, as required for approval under RSA 371:20. We, therefore, approve the licenses for 57 overhead crossings and 4 underground water crossings, subject to the conditions contained in the ordering clauses set forth below to ensure safe construction, operation, and maintenance of the crossings.

This grant of licenses is conditioned upon the issuance of a Certificate of Site and Facility by the SEC in (2015-04) (Northern Pass Docket) and the Commission's approval of the lease of transmission rights-of-way to NPT as requested in Docket No. DE 15-464, by Eversource.

Based upon the foregoing, it is hereby

ORDERED, that subject to approval of the Northern Pass project by the New Hampshire Site Evaluation Committee, and approval of NPT's lease of certain Eversource transmission rights-of-way by the Commission, NPT and Eversource are authorized pursuant to RSA 371:17 to construct, install, operate, and maintain electric lines with associated communications cables as applicable, over, under, and across public waters and lands as described in its petitions and as recommended by Staff; and it is

FURTHER ORDERED, that Eversource apply for licenses for the water crossings identified by Staff that have not previously been licensed, no later than December 31, 2017; and it is

FURTHER ORDERED, that the construction of the lines shall be implemented as depicted in the petitions and supporting documents, including any revisions thereto; and it is

FURTHER ORDERED, that the approval is limited to the construction or alteration of the lines under consideration in this docket, for licenses for 57 overhead crossings and 4 underground water crossings, and is conditioned on the requirement that NPT and Eversource construct, install, operate, and maintain, and, if applicable, alter the lines consistent with the

provisions of the National Electrical Safety Code, in accordance with N.H. Code of Admin. Rules Puc 306.01, as may be applicable, and as amended from time to time, and all other applicable safety standards in existence at that time; and it is

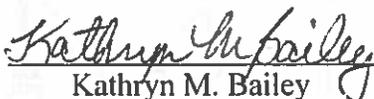
FURTHER ORDERED, that NPT and Eversource shall file with the Commission the as-built design of the crossings once construction is completed; and it is

FURTHER ORDERED, that NPT and Eversource shall provide a copy of this Order to (i) the U.S. Army Corps of Engineers, (ii) the N.H. Site Evaluation Committee, and (iii) the Department of Environmental Services.

By order of the Public Utilities Commission of New Hampshire this sixteenth day of June, 2017.



Martin P. Honigberg
Chairman



Kathryn M. Bailey
Commissioner

Attested by:



Debra A. Howland
Executive Director