

THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE D/B/A EVERSOURCE ENERGY FOR LICENSES TO CONSTRUCT AND MAINTAIN ELECTRIC LINES OVER AND ACROSS DUDLEY BROOK IN THE TOWN OF BRENTWOOD, NEW HAMPSHIRE.

TO THE PUBLIC UTILITIES COMMISSION:

Public Service Company of New Hampshire d/b/a Eversource Energy (“Eversource”), a public utility engaged in the transmission, distribution and sale of electricity in the State of New Hampshire, hereby petitions the Public Utilities Commission (“Commission”), pursuant to RSA 371:17, for licenses to construct and maintain electric lines over and across the public waters of Dudley Brook in the Town of Brentwood, New Hampshire, and in support of this petition states as follows:

1. In order to meet the reasonable requirements of service to the public, Eversource has previously constructed and currently operates and maintains two separate 115 kV overhead electric transmission lines across Dudley Brook in the Town of Brentwood, New Hampshire, designated as the A126 Line and the H141 Line, respectively. Neither of these crossings has been previously licensed with the Commission¹. For the reasons explained below, it is necessary for Eversource to replace the A126 Line and H141 Line crossing structures that support the conductors which cross the above referenced waterbody. Additionally, the replacement of structure 222 on the A126 Line is being relocated approximately 5 feet west of the current location of the existing structure. Structure 221 on the A126 Line is being relocated approximately 70 feet east of the current structure location. Along the H141 Line, crossing structure 197 is being relocated approximately 10 feet west of the current locations of the existing structures. Structure 198 on the H141 Line is being relocated approximately 25 feet west of its current location. The new structure locations are within the Company’s utility easements and in-line of the existing alignment. The existing A126 Line and H141 Line structures are approximately 50 years old and require replacement for these transmission lines to continue to function safely and reliably. This structure replacement and repair project is part of a maintenance project necessary for the A126 and H141 Transmission Lines to continue to meet current as well as future projected electricity demands. All transmission pole structures are currently comprised of a 2-pole wooden H-Frame, and will be replaced with steel 2-pole H-Frame structures.
2. The attached Exhibit 1-Location Plan, dated October 18, 2018, shows the general location of each of the crossings to be rebuilt over and across Dudley Brook. The design and proposed construction of the replacement of the H141 and A126 Lines over Dudley Brook will be in accordance with the National Electrical Safety Code (NESC), as shown on the Eversource Plan and Profile drawing for each crossing,

¹ Due to oversight or the application of different public water or navigability criteria at the time of original construction, neither the existing A126 Line nor the existing H141 Line crossing was previously licensed with the Commission; however, the rebuilt crossings will be licensed under this petition.

attached as Revised Exhibit 2.

3. Wire and structure specifications:
 - a. Dudley Brook – H141 (Revised Exhibit 2):
 - i. Wire:
 1. OPGW: 84 Fiber
 2. Transmission Wire: 336 kcmil ACSR 26/7
 - ii. Structure Types and Pole Heights: From west to east:
 1. Str 197: Type THS, 65' AGH, Class H1
 2. Str 198: Type THS, 75' AGH Class H1
 - b. Dudley Brook – A126 (Revised Exhibit 2):
 - i. Wire:
 1. 7#8 AW
 2. Transmission Wire: 477 kcmil ACSR 26/7
 - ii. Structure Types and Pole Heights: From west to east:
 1. Str 221: Type THS, 65' AGH, Class H1
 2. Str 222: Type THS, 75' AGH Class H1
4. The location of the structures creates the following Dudley Brook crossing spans:
 - a. 601.92 linear feet (H141 structure 197 to structure 198)
 - b. 531.00 linear feet (A126 structure 221 to structure 222)
5. All conductors have been drawn in Revised Exhibit 2 to show the maximum sag conditions in reference to the water.
6. Eversource will maintain and operate the clearance of the wire crossings over Dudley Brook at a height no less than is required by the 2017 National Electrical Safety Code (NESC, Table 232-1). The crossings require clearances of 18.6 feet for 115 kV open supply conductors over water areas not suitable for sail boating. The minimum height over Dudley Brook is depicted on the attached profile drawing (Revised Exhibit 2). The profile drawing of the H141 Line shows the conductor's lowest sag point while at maximum operating condition, with the river beyond its banks at 100-year flood elevation, a clearance at 20.3 feet. The profile drawing of the A126 Line shows the conductor's lowest sag point while at maximum operating condition, with the river beyond its banks at 100-year flood elevation, a clearance at 22.8 feet.
7. The 100-year flood level was established based upon FEMA flood zone maps for the crossing area (Zone AE, effective date: May 17, 2005). This elevation is based on the national Geodetic Vertical Datum of 1929 (NAVD 1929). For the purposes of calculating clearance, the 100-year flood elevation was used, as it was readily available. This is higher than the 10-year flood elevation required by NESC and provides a conservative clearance requirement (Revised Exhibit 2).
8. It is not anticipated that abutters on either side of Dudley Brook will be affected, as these crossings are replacements of existing crossings of overhead lines within Eversource's existing utility easements.