

THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DE 16-_____

PETITION OF UNITIL ENERGY SYSTEMS FOR LICENSE TO REBUILD AND MAINTAIN ELECTRIC LINES OVER AND ACROSS THE MERRIMACK RIVER IN CONCORD, NEW HAMPSHIRE.

Unitil Energy Systems Inc. ("Unitil Energy" or "the Company"), respectfully petitions the New Hampshire Public Utilities Commission ("Commission"), pursuant to RSA 371:17, for a license to rebuild and maintain a line of poles and wires over public waters owned by the State of New Hampshire. In support of this Petition the Company states as follows:

1. Unitil Energy, a corporation duly organized and existing under the laws of the State of New Hampshire, is a retail distribution utility primarily engaged in the business of distributing electricity in various cities and towns in the capital and seacoast regions of New Hampshire. Unitil Energy is wholly-owned by Unitil Corporation ("Unitil"), a New Hampshire corporation and public utility holding company.
2. In support of this Petition, the Company has provided four (4) exhibits: Exhibit 1, a Line Plan and Profile; Exhibit 2, a Pole Top Design; Exhibit 3, Sewall Falls Road Water Crossing Overview Map; and Exhibit 4, FEMA Flood Zone Map of the Sewall Falls Road Water Crossing.
3. In order to meet the requirements for reasonable and safe service to the public, it is necessary for the Company to rebuild structures on the east and west sides of the Merrimack River near the Sewall's Falls Rd Bridge, located in the City of Concord, NH. The existing pole-line must be reconstructed due to the Sewall's Falls Road Bridge replacement in 2016. The Company is requesting to increase height of its lines over the water and improve construction of the structures. The electrical improvements proposed are intended to reduce reliability exposure to Concord residents and businesses.
4. The new crossing over the Merrimack River in Concord, New Hampshire, as shown on the attached plan (Exhibit 1&2), has been designed and will be constructed in accordance with the 2012 National Electrical Safety Code (NESC) for lines operated at 22kV (Phase-to-Ground).
5. The location of the new structures will create a span of approximately four hundred fifty seven (457) feet.
6. There will be three open air conductors making up a horizontally constructed circuit and one neutral conductor crossing the river. Exhibit 2 shows the construction details.

7. FairPoint Communications Inc. will have aerial cables crossing the Merrimack River on these poles, and shall petition the Commission separately for a crossing license.
8. All conductors have been shown on Exhibit 1 to show the maximum sag conditions in reference to the river.
9. The proposed electric line was designed to exceed NESC minimum distance between phase conductors and neutral or grounded conductors at the structure. According to table 235-5 (Vertical Clearance between Conductors at Supports), the required clearance at the structure (for 22kV) is 21.3". This line is designed to provide approximately 156" clearance at the structure, as shown on Exhibit 1.
10. The electric line was designed to exceed NESC minimum distance between phase conductors and neutral or grounded conductors at any point in the span. According to section 235C2b(1)(a), for conductors at different levels on the same structure, the clearance at any point in the span is required to be no less than 75% of that at the structure. Thus, the required clearance between phase and neutral or grounded conductors at any point in the span (for 22kV lines) is 16". This is using the required clearance at the structure as defined in paragraph #7. The proposed line is designed to provide approximately 34.8" at the point of minimum mid span clearance, as shown on Exhibit 1.
11. The proposed line will be constructed, maintained and operated to 2012 NESC, Table 232-1 (Vertical clearance of wires, conductors, and cables above ground, roadway, rail, or water surfaces). According to table 232-1, the clearance over waterway with sailboats is required to be no less than 28.5 feet for the phase conductors (22kV phase to ground), and 26 feet for the neutral conductor. Required clearance over area traversed by traffic is 18.5 feet for the phase conductors (22kV phase to ground) and 16 feet for the neutral conductor. As designed, the minimum clearance of this line crossing is 23' over the roadway and 41' over the water, as shown on Exhibit 1.
12. Although the NESC requires use of the 10 year flood elevation, this design used the 100 year flood level for additional conservatism. The 100 year flood level was provided in the City of Concord's Sewall's Falls Road Bridge Replacement project drawings. This 100 year flood level is consistent with the established FEMA flood zone maps for that area (Zone AE aka 100-year flood levels, Exhibit 4).
13. The proposed overhead line crossing is not expected to affect any public rights in said waters. Minimum safe line clearances above the Merrimack River and affected shoreline will be maintained at all times. The use and the enjoyment by the public of the River will not be diminished in any material respect as a result of the rebuilt overhead line crossing.

Wherefore Unitil Energy respectfully requests that the Commission:

1. Find that the license for construction and maintenance for the rebuild of structures on the east and west sides of the Merrimack River near the Sewall's Falls Rd Bridge, located in the City of Concord, and the maintenance of an electric line over the Merrimack River at that location, may be exercised without substantially affecting public rights in State waters;
2. Grant the Company a license to construct and maintain an electric lines over and across the public waters as identified and described in this Petition; and
3. Issue an order *nisi* and orders for its publication.

Dated at Hampton, New Hampshire this 3rd day of May, 2016.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gary Epler", written over a vertical line.

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