

**DE 05-175**

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**

**Petition for License to Construct and Maintain Electric Lines Over and Across  
Public Waters of the Ammonoosuc River in the Town of Carroll, New Hampshire**

**Order *Nisi* Granting License to Construct and Maintain  
Electric Lines Over and Across Public Waters**

**ORDER NO. 24,570**

**December 30, 2005**

On November 1, 2005, Public Service Company of New Hampshire (PSNH) filed with the New Hampshire Public Utilities Commission (Commission) a petition pursuant to RSA 371:17 for a license to construct and maintain electric lines over and across the Ammonoosuc River in the Town of Carroll, New Hampshire. PSNH states that the new line is required to meet the reasonable requirements of service to the public in Carroll, New Hampshire. PSNH revised its petition on December 7, 2005. The December 7 filing provided substitutes for pages 2 and 3 and Exhibit 3 of the original petition.<sup>1</sup>

PSNH proposes to build a new 19.9 kilovolt (kV) single phase distribution line extension that will tap the existing 348X3 34.5 kV circuit in its existing right-of-way in order to provide service to a new residential customer in Carroll, New Hampshire. The new overhead line will be designated the 334B line. The 344B line crossing will be located approximately ¼ mile west of the intersection of Route 302 and Cherry Mountain Road (Exhibit #2), and will consist of structures #4 and #5 (Exhibit #3). PSNH states that construction of the new crossing is necessary to provide service to a new residential customer and the crossing is required to meet

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<sup>1</sup> For purposes of this Order, the subsequent references to Exhibit #3 refers to Exhibit 3 filed on December 7, 2005.

the requirements of New Hampshire Department of Transportation (NHDOT) in the Route 302 limited access right-of-way.

PSNH states that it first considered serving the new customer by constructing the line parallel to New Hampshire Route 302 (Route 302) and within the Route 302 limited access right-of-way. PSNH avers that such construction would have avoided the need to cross the Ammonoosuc River. However, PSNH avers that the NHDOT determined that running the line parallel to Route 302 would be unacceptable because Route 302 in this location is designated as a Federal scenic byway. PSNH states that it then secured NHDOT's written authorization to cross over Route 302 with the new line in a perpendicular direction by installing a maximum of two poles within the Route 302 limited access right-of-way. PSNH attached a copy of NHDOT's authorization for such construction to its petition as Exhibit #1. PSNH also filed a location plan (Exhibit #2), a profile drawing of the crossing (Exhibit #3) and 19.9 kV single phase construction standards (Figure #1 of Exhibit #3).

PSNH explains that the construction of the crossing will consist of structures #4 and #5, both new 40-foot, class 3 single wood pole tangent structures (Figure #1, Exhibit ##) on the northerly and southerly side of the crossing respectively. The span between these two structures will be 328.8 feet. According to PSNH, the single phase conductor will be 1/0 6/1 ACSR, constructed in a pole top configuration, tensioned to 2000 pounds, and sagged to NESC, ANSI C2-2002 Heavy Loading conditions. The neutral conductor will be mounted on the pole and will be located 7.83 feet below the phase conductor. The neutral conductor will also be tensioned to 2,000 pounds and also sagged to NESC, ANSI C2-2002 Heavy Load Conditions.

PSNH determined that the maximum phase conductor sag of 6.6 feet will occur at a conductor temperature of 140 degrees F. At this elevated conductor temperature, the phase

conductor remains 25.2 feet above the Ammonoosuc River 100 year flood level of 1575.5 feet. For water areas of less than 20 acres that are suitable for sailing, NESC (Table 232-1) requires that the minimum primary conductor clearance to the water surface be 20.5 feet. PSNH offers that the clearance of 25.2 feet exceeds the NESC standard.

PSNH determined that the maximum neutral conductor sag of 5.1 feet will occur at a conductor temperature of 120 degrees F. At this conductor temperature, the neutral conductor remains 20.6 feet above the Ammonoosuc River 100 year flood level of 1575.5 feet as derived from NHDOT highway plans for Route 302. PSNH established that according to NESC Table 232-1, Note 19, the design water surface area for the crossing is 9.6 acres. For water areas of less than 20 acres that are suitable for sailing, NESC (Table 232-1) requires that the minimum neutral conductor clearance to the water surface be 17.5 feet, for neutral conductors meeting Rule 230E1. PSNH points out that the clearance of 20.6 feet exceeds the NESC standards.

PSNH established that, with respect to shoreline clearances, the maximum primary conductor sag of 6.6 feet will occur at a conductor temperature of 140 degrees F and the maximum neutral conductor sag of 5.1 feet will occur at a conductor temperature of 120 degrees F. At these conductor temperatures and according to Exhibit #3, the phase conductor and the neutral conductor, respectively, remain 32.4 feet and 28.4 feet above the Ammonoosuc River. For ground surfaces capable of vehicle traffic, the NESC (Table 232-1) requires that the phase conductor and the neutral conductor (meeting Rule 230E1) clearance to the ground surface be 18.5 feet and 15.5 feet respectively. PSNH offers that the clearances again exceed the NESC standards.

PSNH determined that the minimum distance between the phase conductor and the neutral conductor occurs when the phase conductor is at its emergency temperature of 140

degrees F (200 amperes) and the neutral conductor is at 86 degrees F. Under these conditions, the clearance would be 3.3 feet between the neutral and the phase conductor. NESC Table 235-5, Section 2a requires that the minimum distance between the phase conductors and the neutral be 20.9 inches.

According to PSNH, there is no wetland permit required in connection with the construction of this crossing. PSNH avers that it has recently secured permanent easement rights for the construction, operation, and maintenance of overhead electric lines from Bradford F. Booth and Grace L. Brooks where structures #4 and #5 respectively will be constructed.

PSNH asserts that the use and enjoyment by the public of these waters will not be diminished in any material respect as a result of the proposed aerial line crossings. PSNH attests that the construction of the aerial electric lines will be constructed, maintained, and operated in accordance with the requirements of the NESC.

RSA 371:17 provides, in part, that whenever it is necessary, in order to meet the reasonable requirements of service to the public, that any public utility should construct a line of poles or towers and wires and fixtures thereon over or across any of the public waters of New Hampshire, it shall petition the Commission for a license to construct and maintain the same. "Public waters," as defined in RSA 371:17, means "all ponds of more than ten acres, tidewater bodies, and such streams or portions thereof as the Commission may prescribe." Based on the information presented, we prescribe the part of the Ammonoosuc River under the proposed aerial electric lines as being "public waters" under RSA 371:17.

After reviewing the information presented by PSNH and Staff's recommendation, we find this crossing necessary for PSNH to meet the reasonable requirements of reliable service to the public within PSNH's authorized franchise area and the requested license may be

exercised without substantially affecting the public rights in the waters of the Ammonoosuc River. We find that the crossing is in the public good and we will approve the petition on a *nisi* basis in order to provide any interested party the opportunity to submit comments on said petition or to request a hearing.

**Based upon the foregoing, it is hereby**

**ORDERED *NISI***, that subject to the effective date below, PSNH is authorized, pursuant to RSA 371:17 et seq., to construct, maintain and operate the aerial electric lines over and across the Ammonoosuc River in Carroll, New Hampshire described in its petition and depicted on plans and drawings submitted November 1, 2005, revised on December 7, 2005, and on file with this Commission; and it is

**FURTHER ORDERED**, that all construction and future reconstruction to these approved crossings shall conform to the requirements of the NESC and all other applicable safety standards in existence at that time; and it is

**FURTHER ORDERED**, that PSNH meet the approval requirements of the NHDOT in the Route 302 limited access right-of-way; and it is

**FURTHER ORDERED**, that PSNH limit the current on this crossing to a maximum value of 200 amperes; and it is

**FURTHER ORDERED**, that the Petitioner shall provide a copy of this order to: (i) the Town Clerk of Carroll, New Hampshire, (ii) the New Hampshire Attorney General and the owners of the land bordering on said public waters at the location of the river crossing, pursuant to RSA 371:19, and (iii) pursuant to RSA 422-B:13, the New Hampshire Department of Transportation and the Office of Secretary, U.S. Department of Commerce, by first class mail,

no later than January 6, 2006, and to be documented by affidavit filed with this office on or before January 20, 2006; and it is

**FURTHER ORDERED**, that the Petitioner shall cause a copy of this Order *Nisi* to be published once in a statewide newspaper of general circulation or of circulation in those portions of the state where operations are conducted, such publication to be no later than January 6, 2006 and to be documented by affidavit filed with this office on or before January 20, 2006; and it is

**FURTHER ORDERED**, that all persons interested in responding to this Order *Nisi* be notified that they may submit their comments or file a written request for a hearing which states the reason and basis for a hearing no later than January 11, 2006 for the Commission's consideration; and it is

**FURTHER ORDERED**, that any party interested in responding to such comments or request for hearing shall do so no later than January 17, 2006; and it is

**FURTHER ORDERED**, that this Order *Nisi* shall be effective January 20, 2006, unless the Petitioner fails to satisfy the publication obligation set forth above or the Commission provides otherwise in a supplemental order issued prior to the effective date.

By order of the Public Utilities Commission of New Hampshire this thirtieth day  
of December, 2005.

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Thomas B. Getz  
Chairman

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Graham J. Morrison  
Commissioner

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Clifton C. Below  
Commissioner

Attested by:

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Kimberly Nolin Smith  
Assistant Secretary