

In Re: Petition of New England Power Company
d/b/a National Grid for Licenses to Construct and
Maintain Electric Lines Over and Across Public
Waters in the Towns of Walpole and Surry,
New Hampshire

EXHIBIT G

J-136N ASHUELOT RIVER CROSSING

1. Statement of Need

The J-136N Line is a part of NEP's electric transmission system in southwestern New Hampshire, and is operated in conjunction with the I-135N Line between Bellows Falls Substation and Flagg Pond Substation to serve loads in New Hampshire, Massachusetts, and Vermont. The J-136N Line, approximately 80 years old, will continue to be operated as currently configured.

2. National Electric Safety Code

The existing crossing meets or exceeds the 2007 Edition of the National Electrical Safety Code, (NESC) C2-2007.

3. Specific Electrical and Physical Description

Voltage: 115kV, 3-phase, 60 Hertz

Conductor: 4/0 Copper, 7 strand

Structures: Reuse existing double circuit lattice steel towers with the conductors in a horizontal configuration

Shieldwires: Located above the conductors consist of one 7/16" HS Galvanized steel.

Horizontal Distance between conductors: 12 feet

Vertical Distance at the tower between the conductors and the shieldwire: 10 feet

4. Elevation of Water Level

The water surface elevation of the Ashuelot River, used for design, at the crossing was 511 feet (August 20, 2003) above MSL based on NGVD of 1929. The 100-year flood elevation, at the same location is TBD based on FERM Maps dated May 23, 2006.

5. **Rounding**

All elevations have been rounded to the nearest one-tenth of a foot.

6. **Applicable Area of Water Body**

The applicable water crossing area is not suitable for sailboats because of its limited width down stream of the crossing (approximately 40 feet wide).

7. **Maximum Sag and Clearance (each span)**

The governing case is maximum sag and clearance to both water and land with phase conductors at maximum operating temperature.

8. **Condition Producing Minimum Clearance for Phase Conductors – expected and NESC clearance**

The governing case is maximum sag and clearance to both water and land with phase conductors at maximum operating temperature.

With the conductor at maximum sag, which occurs at the maximum operating temperature of 212°F, the NESC clearance requirement to the water is 18.6 feet, based on water areas not suitable for sailboating or where sailboating is prohibited.

The minimum clearance at the existing crossing is 40.0 feet at 212°F.

9. **Conductor Producing Minimum Clearance for Neutral/Static Conductors – expected and NESC clearance**

- a. Expected Clearance: 40.0 feet at maximum conductor sag
- b. NESC Clearance Requirement: 18.6 feet at maximum conductor sag
Based on the NESC clearance requirement to the water areas not suitable for sailboating or where sailboating is prohibited.

10: **Combinations of Conditions Between Phase and Neutral/Static Conductors**

Governing condition: Shieldwire at NESC Heavy, and conductor at 0F bare.

- Expected clearance: 30.0 feet
- NESC clearance requirement: 4.8 feet
Based on the NESC clearance for span wires parallel to the line

11. **Minimum Clearance for Phase Conductors to Both Water and Land**

The minimum clearance at the existing crossing is 40 feet at 212°F.

12. Permits and Approvals

All necessary permit applications have been filed or will be filed including wetland applications.

13. Maintenance and Operation of Crossing

The Crossing will be maintained and operated in compliance with NESC at all times.

14. Easement Rights

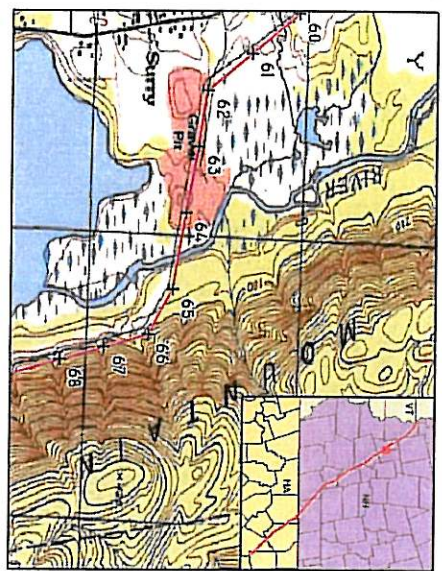
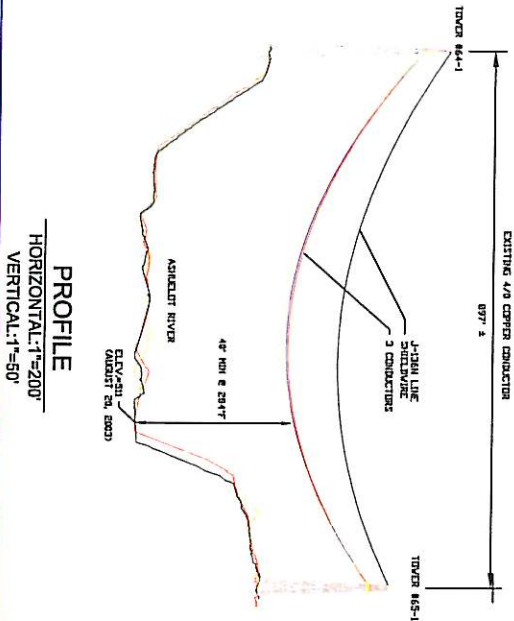
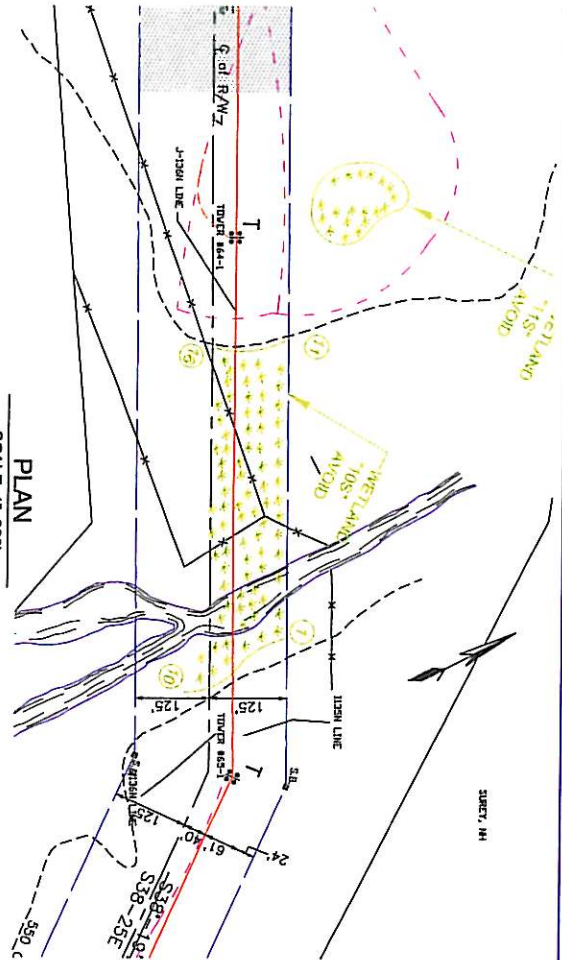
The line is located within an existing easement.

15. Public Rights on Public Water or Lands

The public's use and enjoyment of the Ashuelot River will not be diminished in any material respect as the result of the J-136N crossing subject to this Petition.

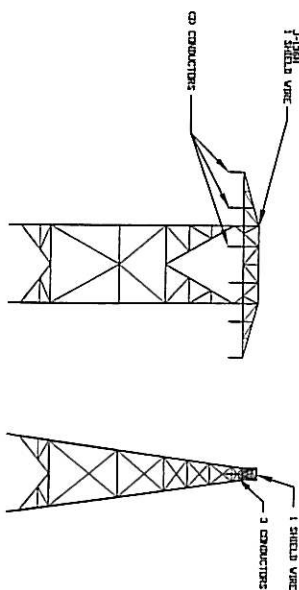
16. Plan Requirements

Please see attached Plan of J-136N Ashuelot River Crossing.



MAP SOURCE - USGS TOPOGRAPHIC IMAGE

SCALE - 1:24,000



(August 20, 2003) = Data Flown

ELEVATION SCALE: 1"=20'

SIDE ELEVATION SCALE: 1"=20'

LEGEND

● Tower Location

— Existing Conductor to be Replaced

New England Power Company
Plan Showing Location of
J-136N Transmission Line
Over and Across
Ashuelot River
Sury, New Hampshire
Scale: As Shown
Date: October, 2007

115KV LINE
LINE CROSSING OF ASHUELOT RIVER
IN SURRY, NH
PLAN & PROFILE
SCALE: 1:50

ORIGINAL NAME	DATE
DESIGNED BY	1/2/07
CHECKED BY	
APPROVED BY	

nationalgrid

NO.	REV.	REVISION DESCRIPTION	DESIGNED BY	APPROVED BY	REVISION
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

INCHES ON ORIGINAL