



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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Petition No. 349

The Connecticut Light and Power Company
North Wallingford Substation - Schwab Junction Transmission Line
Wallingford, Connecticut

March 13, 1996

Staff Report

On February 23, 1996, Gloria D. Pond and Edward S. Wilensky of the Connecticut Siting Council (Council) Executive Director Joel M. Rinebold and Robert K. Erling of the Council staff met Michael Carlson of the Connecticut Light and Power Company (CL&P) for a field review of this proposed project. CL&P is petitioning the Council for a determination that no Certificate of Environmental Compatibility and Public Need would be required pursuant to General Statutes § 16-50g et. seq. for proposed modifications to this existing 115-kV transmission line.

CL&P proposes to convert one structure on the existing North Wallingford Substation - Colony Substation portion of this transmission line from suspension insulation configuration to strain insulation configuration to increase conductor clearance to the ground. The existing wood-pole H-frame structure would otherwise remain unchanged.

On the Colony Substation - Schwab Junction portion of this transmission line (1355), CL&P proposes to connect two parallel three conductor lines together to operate as a single six conductor circuit. To establish this six conductor circuit between North Wallingford Substation and Colony Substation, the existing 1975 circuit on steel pole structure no. 3646 at Colony Substation would be converted from suspension insulation configuration to strain insulation configuration. The two circuits on the westerly side of this structure would be bundled by the installation of phase cross ties or conductors between the conductors of the northerly and southerly circuits. At Schwab Junction, existing structure no. 4577 would be replaced by a new structure approximately 30 feet to the east, and a new conductor would be installed to the existing 1355 circuit between the new structure and a new dead end structure located approximately 100 feet (unconfirmed) northwest of the 1355 line. Vertical phase ties or conductors would be installed between the conductors, thereby bundling the lines together to operate as one line. Upon completion, the 1355 line and a section of the existing de-energized 1975 line would function as a six conductor circuit. The 1975 line from Colony Substation to North Wallingford Substation would remain de-energized.

The proposed project would increase emergency ratings to prevent projected overloads on the existing 1355 and 1588 lines under contingency conditions. On the North Wallingford - Colony Substation (1588) line, normal summer ratings would increase from 520 amps to 595 amps, and winter normal ratings from 685 amps to 740 amps. Long-term emergency summer ratings would

increase from 520 amps to 720 amps, while winter long-term emergency ratings would increase from 685 amps to 835 amps. Short-term emergency summer ratings would increase from 520 amps to 730 amps, while short-term emergency winter ratings would increase from 685 amps to 850 amps. CL&P anticipates construction would begin in April 1996 with completion of the project by the end of May 1996.

Magnetic Fields

As a result of this project magnetic fields on the Colony Substation - Schwab Junction (1355 line) would decrease along the northern edge of the right-of-way (ROW) for winter short-term (15 minutes) emergency (STE), winter long-term (one peak load cycle) emergency (LTE) winter normal and average currents, due to the bundling of the lines, while magnetic fields along the southern edge of the ROW would increase because of the energized circuit to the south

Magnetic fields for the Wallingford Substation - Colony Substation (1588 line) are expected to increase along both the northern and southern edges of the ROW for winter STE, winter LTE, and winter normal ratings. The average currents fields along both the northern and southern ROW are expected to remain the same. No bundling would occur on this line.

Colony Substation - Schwab Junction 1355 Line

Existing Magnetic Fields at Northern Edge of ROW
 (in Milligauss)

Winter Short-Term Emergency (STE)	Winter Long-Term Emergency (LTE)	Winter Normal	Average Currents
74.3	74.3	74.3	26.0

Proposed Magnetic Fields at Northern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
70.5	66.1	56.5	12.1

Existing Magnetic Fields at Southern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
10.8	10.8	10.8	3.8

Proposed Magnetic Fields at Southern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
78.9	74.0	63.3	13.6

North Wallingford Substation - Colony Substation 1588 Line

Existing Magnetic Fields at Northern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
74.3	74.3	74.3	20.6

Proposed Magnetic Fields at Northern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
92.2	90.5	80.2	20.6

Existing Magnetic Fields at Southern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
10.8	10.8	10.8	2.9

Proposed Magnetic Fields at Southern Edge of ROW
 (in Milligauss)

Winter STE	Winter LTE	Winter Normal	Average Currents
13.4	13.2	11.7	2.9