



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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Petition No. 233
Stony Hill Substation
Brookfield, Connecticut
Substation Modifications
May 15, 1989

Northeast Utilities (NU) is requesting a determination from the Council that no Certificate of Environmental Compatibility and Public Need is required for additions to the Connecticut Light and Power Company (CL&P) substation and 115-kV transmission line modifications within its existing 115-kV Stony Hill Substation and transmission line right-of-way in Brookfield, Connecticut.

On May 4, 1989, Brian Emerick and Harry Covey from the Council, and Thomas E. Fanning, Jr., staff of the Council, met with Robert Carberry, Chris Ebert, and Donald Biondi of CL&P on the site of the proposed additions.

The proposed work is needed to improve system reliability and to meet the growing load requirements in the area. The existing Stony Hill Substation was originally constructed as a temporary facility approximately ten years ago. It uses a single 22-MVA transformer and is restricted by the number of feeder positions. The growing load would necessitate the use of two transformers and an increase in the number of distribution feeder positions. This would enable Stony Hill to relieve the increasing loads at Triangle and West Brookfield Substations.

The Stony Hill Substation is a terminal that steps voltage down from a 115-kV transmission line to 13.8-kV distribution feeders. The existing 22-MVA transformer, one mobile transformer position, two regulated 13.8-kV feeder positions, and one 115-kV line position would be dismantled, removed, and stored off-site for future system use. The freed space would be used as a staging area for the proposed construction and left open following the completion of construction.

Proposed substation construction would consist of the following work:

- a. Clearing and grading approximately 1.3-acres of land east and contiguous to the existing substation;
- b. Extending the existing 7-foot high fence approximately 800 linear feet and enclosing the area to contain the new substation equipment;
- c. Installation of two 115-kV terminal structures;
- d. Installation of one 115-kV circuit breaker;
- e. Installation of two 115-kV circuit switches;
- f. Installation of two 47-MVA, 115-kV to 13.8-kV bulk supply transformers;
- g. Construction of a switchgear enclosure and six underground feeder exits; and
- h. Construction of a relay and control enclosure.

Transmission right-of-way (ROW) work would entail:

- a. ROW clearing and access road construction for two new structures;
- b. Installation of two, single-pole, guyed wood structures approximately 75 feet tall; and
- c. Installation of new conductor (795 kcmil SSAC) and ground wire (3/8" Alumoweld) between existing structures and the new guyed structures.

The substation is located in a wooded residential area. The entire parcel is adjacent to the ROW and paralleling a railroad line. The nearest residence is located approximately 300 feet to the southwest of the proposed fenceline. This would be screened by the existing woods. Several other residences are located approximately 500 feet or more to the north and northeast, topographically above the proposed additions. These residences would also be partially screened by the existing woods.

The proposed substation equipment would be contained within the extended substation fence. The two new pole structures would be located within CL&P's ROW and would not be taller than adjacent transmission line lattice structures. The ground slopes gradually downward towards the railroad line to the north and east, however, cut and fill grading would be minimal. The typical hardwood forest vegetation would be totally cleared, including several hardwood trees estimated at 15 - 18 inches in diameter. Part of the substation area is a designated inland wetland. During construction, fabric silt-fencing would be deployed around the perimeter of the area to mitigate erosion effects. Following construction, the woodline bordering the north side of the station would need augmented evergreen plantings. Some of the screening vegetation has been removed to provide access to the proposed pole structure sites. The expanded substation area would be covered by a 4-inch layer of crushed stone.

The new transformers would be installed on concrete pads containing 40-inch deep sumps capable of holding 110 percent of a transformer's insulating fluid. The fluid is designated as non-PCB by the U.S. Environmental Protection Agency. The transformers would contain 8,000 to 10,000 gallons of insulating fluid depending on the size ordered from the manufacturer.

The two transformers would not increase the sound level along the property line by more than 1 dBA. CL&P states that there would be no television or radio interference from the proposed additions.

The Town of Brookfield's Zoning Commission approved the location of the substation in November 1988. The Town's Inland Wetland Commission approved CL&P's location plan, and the Soil Erosion and Sediment Control Plan. The wetland soils on the property, would be located outside the proposed construction area.

The proposed project is not within a 100-year flood zone or any stream-channel encroachment lines.

The project would not affect any historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

Construction would begin in July 1989, and be completed by May 1991.

The Petition Review Team recommends that N.U., to the maximum extent possible, preserve the remaining natural vegetative buffer between the facility and the northern side residences. Augmentation screening along this fence line should be as tall as can be commercially obtained. In addition, all uncovered boulders, not used for blocking unauthorized access ways, should be removed from the site..

Pursuant to Section 16-50g and Section 16-50k(a) of the Connecticut General Statutes, NU contends that the proposed construction would not have a substantial adverse environmental effect and therefore would not require a Certificate of Environmental Compatibility and Public Need.

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Siting Analyst

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