



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051
Phone: 827-7682

Petition No. 272
Northeast Utilities
Barbour Hill-Rockville 600 Line
South Windsor - Vernon, Connecticut
July 16, 1991

On June 14, 1991, the 100-MVA 115/69-kV autotransformer at the Montville Station of Northeast Utilities (NU) failed. This transformer is the only electrical connection between the 115-kV bus and the 69-kV bus at the Montville Station. If another failure should occur in another transmission line or substation in southeastern Connecticut, service outages would be expected. To maintain service, NU must replace the Montville autotransformer. NU presently has only one spare 50-MVA 115/69-kV autotransformer, and it is only one half the capacity of the failed unit. NU has been unable to locate an autotransformer of suitable capacity.

To replace the needed autotransformer, NU proposes to provide a replacement autotransformer at Montville with a 72-MVA 115/69-kV autotransformer from the Barbour Hill Substation in South Windsor. To accomplish this, the double circuit 69-kV, 600 line from the Barbour Hill Substation to the Rockville Substation would be converted from 69-kV to 115-kV operation. NU has a power transformer at the Rockville Substation in Vernon now operating with a high side voltage of 69kV, which NU proposes to reconnect for high side operation at 115kV. Other substation facilities on the high side of this transformer are prebuilt for 115kV service. Approximately 1.3 miles of this line is on lattice towers with a conductor separation sufficient for 115-kV operation, but with insulator strings which are sufficient only for 69 kV.

On July 10, 1991, Chairman Mortimer A. Gelston of the Siting Council and Robert K. Erling of the Council staff met Christopher Aberg, Robert Carberry, Joseph Russo, and Gerald Thompson of NU for a field review of this petition. NU petitions the Council for a determination that no Certificate of Environmental Compatibility and public need would be required for this project, which would be as follows. NU would add two porcelain insulators to each insulator string on the Barbour Hill/Rockville 600 line to enable them to handle 115kV operation. The wood poles which support this line are pre-insulated for 115-kV operation, and the clearances of all

conductors above the ground and other facilities are adequate for 115-kV operation, according to NU. The only change to the transmission line would be the addition of insulators along the steel tower portion of the line. Three 3-pole wood structures and one 2-pole wood structure would be installed along with conductor to connect the 600 line to the 115-kV bus at the Barbour Hill Substation.

There are two 72-MVA 115/69-kV autotransformers at the Barbour Hill Substation. The autotransformer which supplies the 600 line would be removed from its position, as would a sound wall and 69-kV bus. The 600 line would be rerouted to be directly connected to the 115-kV bus at Barbour Hill. This would allow a 115-kV circuit to be in service from Barbour Hill to Rockville. The 72-MVA 115/69 kV autotransformer would be removed from Barbour Hill and installed in Montville, replacing the failed unit. This autotransformer does not equal the capacity of the failed 100-MVA unit, but it would provide a greater margin to serve load demand than would the only available 50-MVA autotransformer.

Engineering and construction within the substation and on the transmission line have already been completed; NU realizes that this construction was initiated prior to Council approval, but believes immediate action was needed to prevent outages in the area during a period of expected high summer electric loads. This work was undertaken by CL&P with full knowledge that should the Petition be denied, CL&P would be required to submit an application for a Certificate to the Council.

The brush cleared near the substation will soon be chipped and removed. No other environmental effects were noted.

CL&P proposes that the modifications will have no substantial adverse environmental effect, and pursuant to CGS section 16-50k no Certificate is required from the Council.

Robert K. Erling
Sr. Siting Analyst

RKE:bw

5415E