STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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August 25, 2004

Roger C. Zaklukiewicz
Vice President
Transmission Engineering and Operations
Northeast Utilities System
P.O. Box 270
Hartford, CT 06141-0270

Richard J. Reed
Vice President of Electric System
The United Illuminating Company
801 Bridgeport Avenue
Shelton, CT 06484

RE: **DOCKET NO. 272** - The Connecticut Light and Power Company and The United Illuminating Company Application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction of a new 345-kV electric transmission line facility and associated facilities between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk, including the reconstruction of portions of existing 115-kV and 345-kV electric transmission lines, the construction of Beseck Switching Station in Wallingford, East Devon Substation in Milford, and Singer Substation in Bridgeport, modifications at Scovill Rock Switching Station and Norwalk Substation, and the reconfiguration of certain interconnections.

Dear Mr. Zaklukiewicz and Mr. Reed:

The Connecticut Siting Council (Council) requests your responses to the enclosed questions no later than September 1, 2004. To help expedite the Council's review, please file individual responses as soon as they are available.

Please forward original and 20 copies to this office including an electronic filing. In accordance with the State Solid Waste Management Plan, the Council is requesting that all filings be submitted on recyclable paper, primarily regular weight white office paper. Please avoid using heavy stock paper, colored paper, and metal or plastic binders and separators. A list of parties and intervenors dated July 20, 2004, is enclosed. Fewer copies of bulk material may be provided as appropriate.

Yours very truly,

S. Derek Phelps
Executive Director

Enclosure

c: Parties and Intervenors

Docket No. 272
Connecticut Siting Council
Pre-Hearing Questions
Set Number Four

71. Should the requirement for maintaining harmonic resonance above the 3rd harmonic be the only criteria for acceptable or unacceptable system performance in terms of harmonic amplification requirements?

    a. If yes, please specify why this criterion alone is sufficient.

    b. If not, please describe what other criteria should be used.

72. Should the amounts of damping associated with the various resonance points be a factor in establishing acceptable performances? If not, please discuss why. If yes, please specify:

    a. The minimum acceptable criteria in terms of resonance frequency number and damping. These criteria should be provided, per harmonic number, at the different driving points of the system.

    b. The maximum permissible harmonic voltage magnification levels, per harmonic number, which you consider acceptable.

73. The GE Harmonic Study that describes the results for Study Cases 5, 6, and 7, dated August 2004, reports in Table 2, Page 3, that different load conditions and generation units' dispatch were studied. For the referenced study conducted by GE, please provide:

    a. For both Light Load and Peak Load conditions, the real and reactive power components of the loads on all buses, as modeled in the referenced GE study.

    b. Real and reactive power outputs for each generator interconnected with CP&L and United Illuminating, for each dispatch scenario used in the referenced GE study.

74. Are there any plans to change the existing Phase I design from less HPFF to more XLPE cable sections? If so, which cables would be replaced? If not, does the Applicant intend to study the effects of such a change on system performance and/or the need for STATCOM capacity in Study Case 7? If such studies are not planned, please explain why this alternative should not be investigated.

75. Under heavy (peak or near-peak) load conditions, in southwest Connecticut, is it reasonable to assume that:

    a. More local generation would be operating than at light load?

    b. All (or most) shunt capacitors would be in service?

    c. In each case, discuss all reasons for your answer.

76. Under light load conditions, is it reasonable to assume that:

    a. Less local generation would be operating than under heavy load conditions?

    b. No local generation would operate?

    c. Most (or all) shunt capacitors would be out of service?

    d. In each case, describe all reasons for your answer.

77. For the current and projected future power system in southwest Connecticut, what contributes to higher voltages under light load conditions? What steps are taken to mitigate high voltages during light load conditions?

78. Are the shunt capacitor banks in southwest Connecticut used to help control system voltage under various loading scenarios? If so, please describe in detail how this is accomplished.

79. Are all the shunt capacitor banks listed in Table 1 of GE's report, entitled "Connecticut Cable Resonance Study for XLPE Alternative in Middletown to Norwalk Project," under the direct control of either the Applicant or ISO-NE?

80. Can the Applicant cite any instance(s) in actual operation where all capacitor banks were dispatched (i.e. in service) under light load conditions?

    a. If so, please identify and describe each specific instance (or a representative set) in detail.

    b. Would such operation of the shunt capacitors result in an acceptable system voltages for:

        i. The existing system?
        ii. The approved Phase I system?

        iii. The system alternative examined as Study Case 6?

        iv. In each case, discuss why or why not.

81. Is it reasonable or advisable to design transmission facilities to perform acceptably under operational circumstances that are not credible for either the existing or future system in southwest Connecticut? Why or why not?

82. With reference to GE's August 2004 Report on Study Cases 5, 6, and 7, please explain the significance of the 6th column of Table 1 (p.2), entitled "Light Load." Does this indicate that under light load conditions only the shunt capacitors associated with the Cross Sound Filters would be expected to be in service?

    a. If not, what is the significance of this column in Table 1?

    b. What party provided the information in Table 1?

    c. What regional load levels are associated with each loading condition?

    d. Based on Table 1 alone, is it more likely that all capacitor banks would be in service for peak load conditions or for light load conditions?

    e. Based on Table 1 alone, is it more likely that all banks of capacitors (except the cross sound filter capacitors) would be out of service for peak load conditions or light load conditions?

    f. On page 2, paragraph 3, GE states, "An additional generator…is given for 'Light Post Project,' which depicts a more realistic scenario with more local generation off." Please explain in detail why this is more realistic. What scenario is it more realistic than and why? For what year(s) is this scenario considered realistic?

    g. What is GE's understanding of the circumstances that constitute:

        i. Peak load conditions?

        ii. Light load conditions?

83. With reference to GE's August 2004 Report on Study Cases 5, 6, and 7, please state whether system resonance results were obtained for a peak load case. If so, please describe and discuss all results. If not, why was a peak load case not studied?

84. Has the Applicant or GE run any resonance studies of the XLPE Alternative in the Middletown and Norwalk Project for either a peak load (or a heavy load) scenario? If so, please provide the results of all such studies and discuss the reasons for any differences between these results and those for other study cases. If not, please discuss in detail the rationale for not examining such a loading scenario.

85. In further studying Case 7, does the Applicant intend to look at variations in the total amount of STATCOM Capacity and in its deployment at the various transmission stations in southwest Connecticut? If so, please describe what variations will be studied and why. If not, please discuss why there is no need to examine such options.

86. Has the Middletown-Norwalk Project been designed to accommodate the delivery of power from existing and new generating plants? If so, please describe all aspects of the design that accommodate such deliveries. If not, please explain why.

87. Does the Applicant have any ability to influence the siting and/or operation of generating plants in southwest Connecticut? If so, please describe all ways that the Applicant can influence either plant siting or plant operation.

88. Please describe in detail the Applicant's current system plan for future generation in southwest Connecticut. Please identify plant location, size, number of units, prime movers, fuel type (if known), and year of initial operation.

89. Is it reasonable for the Applicant to assume that little or no local generation will operate to meet the future needs of southwest Connecticut? Why or why not? Please answer this question separately for a 5-year and a 10-year planning horizon.

90. Could the presence and operation of local generation in southwest Connecticut have a direct effect on the region's transmission design and cost?

    a. If so, please discuss what effects are possible.

    b. If not, please describe why additional generation would not affect future transmission needs.