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March 28, 2005

VIA OVERNIGHT AND ELECTRONIC MAIL

Mr. Derek S. Phelps
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Docket No. 272 - Joint Application of The Connecticut Light and Power Company and The United Illuminating Company for a Certificate of Environmental Compatibility and Public Need for a 345-kV Electric Transmission Line Facility and Associated Facilities Between Scovill Rock Switching Station in Middletown and Norwalk Substation in Norwalk

Dear Mr. Phelps:

On behalf of ISO New England Inc. ("ISO"), I am filing herewith an original and 20 copies of ISO's Exceptions to Draft Findings of Fact in the above-referenced docket. I am also filing the Exceptions with the Council and distributing it to the service list electronically.

Please contact me if you have any questions or need additional information.

Sincerely,

Anthony M. Macleod

Enclosures

cc: Matthew Goldberg, Esq.
Service List

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

NORTHEAST UTILITIES SERVICE 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

DOCKET NO. 272

MARCH 28, 2005

EXCEPTIONS OF ISO NEW ENGLAND INC. TO DRAFT FINDINGS OF FACT

ISO appreciates the opportunity to comment on the Proposed Draft Findings of Fact in the above-referenced case. ISO is in general agreement with the overall direction of the Proposed Findings of Fact but submits that the following changes are necessary clarifications and corrections.

FF 56. There is no 345-kV loop in the southwest area of Connecticut. A "full loop" 345-kV transmission line located within Southwest Connecticut would meet NEPOOL Reliability Standards. (Applicant 31, p.11; ISO-NE 1, p. 28; ISO-NE 4, p. 22)

Exception: ISO cautioned that the full loop 345 kV transmission line had been modeled in for RTEP purposes as substantially an overhead line. ISO requests that the second sentence of Finding 56 be changed to read as follows: "A 'full loop' 345-kV transmission line located within Southwest Connecticut is necessary to address the reliability problems in this area and addresses those problems more completely than other transmission or non-transmission alternatives studied by ISO." (ISO Ex. 1, p. 4)

FF 103. ABB was engaged by Northeast Utilities to study a DC based underground option from Beseck to Norwalk as an alternative to the Phase II AC solution. The study considered the HVDC alternative against system criteria established by Northeast Utilities and ISO New England. ABB developed three underground HVDC alternatives which were technically feasible. (Tr. 12/15/04, p. 46, 47)

Exception: The third sentence of this finding should be revised to state: "ABB developed three underground HVDC alternatives which it believed were technically feasible." Other findings indicate the drawbacks associated with an HVDC solution (See, e.g., Proposed Findings 167, 168). ISO does not concur that HVDC alternatives are technologically feasible solutions to the reliability needs in SWCT. ISO repeats its Proposed Findings of Fact 48 through 50 and 52 through 54 in support of its position:

> 48. The use of Voltage Source Converter-HVDC ("VSC-HVDC") in Southwest Connecticut would require an unprecedented number of converter stations in one portion of a system, converter stations of a size not yet used anywhere, and control technologies that are still in their infancy and that have never been employed in the middle of a 3,500 MW load center with limited transmission infrastructure and capacity. It would also demand extremely complex and impractical operating procedures given the complexities of power flow on the AC system in Southwest Connecticut. (App. Ex. 164, p. 8; 1/13/05 Tr. 231)

49. There are 13 system reliability and operability criteria that the Project must meet, and the VSC-HVDC proposal does not meet many of them. (App. Ex. 164, pp. 9-13)

50. In addition to the unacceptable operating complexity introduced by HVDC, the ISO's modeling of conventional HVDC between Beseck and East Devon indicates unacceptable thermal conditions for such a project, as three contingency overloads that occurred for the HVDC plan that did not occur for the Applicants' Proposal. An all-lines-in transfer limit analysis for identical generation conditions favored the Applicants' Proposal by 225 MW, suggesting a 3 to 4 year shorter lifetime for the HVDC Plan, and ISO's line-out transfer limit analysis demonstrated that the Applicants' Proposal had transfer limits that were 700 to 2200 MW higher than the HVDC Plan, most notably when 345 kV lines in the Southington area were not in service. (ISO Ex. 12, p. 3)

52. HVDC is not readily expandable for either the integration of load stations or versatility in generation interconnection and operation. (ISO Ex. 12, p. 4)

53. The use of VSC HVDC technology would not be technologically feasible for the Project because it would add unacceptable complexity to the system, require reliance on unproven operating procedures and control technology, prohibit the installation of new merchant generation unless VSC HVDC terminals were incorporated into the generator lead, limit future expansion of the electric grid to serve customer load, and render the backbone of the SWCT transmission system dependent on new technology available only from one source. Moreover, the Applicants estimate that the full cost of the VSC HVDC proposal would be approximately double the cost of the Applicants' proposed Project alternative (Case 5 with XLPE). Finally, because HVDC operates differently than AC facilities, the design would face great challenges from NEPOOL Participants with respect to receiving regional cost support. (CSC Ex. 24, pp. 6-7; App. Ex. 176, p. 9)

54. There is no adequate assurance that system control scheme software programs, which would need to be used to implement security-constrained dispatch, can be designed, engineered and constructed with the ability to respond to outages on either the VSC HVDC or AC system in a timely manner and effect changes to the system such that it is secure for any possible subsequent event. The operational complexity is huge; the consequences of a problem are significant; and the reliability risk to SWCT is too great. (App. Ex. 176, p. 31; 1/13/05 Tr. 71, 230-232, 234-235)

FF 110. An HVDC system between Beseck and Devon is technically feasible if cost is not a consideration. (Tr. 06/15/04, p. 85, 108)

Exception: For the reasons cited in ISO's Proposed Findings of Fact 50 and 52, set forth above, ISO does not concur that an HVDC system between Beseck and East Devon is technologically feasible, whether or not cost is considered. ISO requests that this Draft Finding of Fact be deleted.

FF 124. DC would be scheduled by ISO in the same manner as generation to leave the system secure. The secure system would have the ability to survive single or multiple contingencies while operating under emergency limits. (Tr. 12/15/04, p. 237, 242)

FF 130. In a contingency if an HVDC line is lost, the Security Constrained Dispatch Algorithm would have all of the links on the system prescheduled to accommodate that loss and there would not be overloads on the remaining AC circuits. (Tr. 12/15/04, p. 277)

Exception to FF 124 and 130: The foregoing Draft Findings state ABB's belief that ISO could operate the system by scheduling it like generation and that ISO's Security Constrained Economic Dispatch ("SCED") Algorithm could operate to make the HVDC system accommodate contingencies.

ABB's beliefs in this regard were refuted by Mr. Brandien of ISO, who testified that HVDC was not generation, that security constrained unit commitment tools and computer programs could not provide solutions for multiple terminals, that ISO did not believe its SCED Algorithm could work to schedule flows on the HVDC proposal, that ISO never told ABB that its SCED Algorithm could do so, that he did not believe ISO's software had been sufficiently perfected to run ABB's proposed HVDC system as presented, and that several statements made by ABB in its proposal had not been implemented anywhere. (1/13/05 Tr. 68-72, 229-231, 233-235).

In light of Mr. Brandien's testimony, FF 124 and 130 should be deleted. Less preferably, they should be changed to indicate that they reflect only ABB's beliefs.

FF 156. Any DC option from Beseck to East Devon would have technical limitations. Conventional DC for that segment would be most impractical. A VSC DC would be an engineering challenge because of weakening of the system with the capacitance still there. A fully DC system from Beseck to Norwalk with conventional DC would be infeasible because of weakness of the system. VSDC has the appearance of technical viability. (Tr. 7/29, p. 161)

Exception: The last sentence of FF 156 should be deleted for the reasons set forth in ISO's Proposed Findings 48-49 and 53-54.

FF 308. CGIT normally supplies long lengths of gas-insulated transmission lines where it is worth separating the bus from the substation, and in those cases they may be several hundred meters in length. (Tr. 1/19, p. 45)

Exception: The foregoing finding ought to be clarified as follows: "The longest lengths of gas-insulated transmission lines generally occur where it is worth separating the bus from the substation, and is such cases, and these cases are typically only several hundred meters in length. It is not considered a viable option for this Project."

FF 366. STATCOMs were not found to be an effective mitigation tool. The results of the KEMA studies found that C-type filtering, a passive filtering, were encouraging. KEMA concluded that an additional up to 20 miles of undergrounding appeared to be technologically feasible. (Tr. 12/14/04, p. 22, 23)

Exception: The third sentence should be changed to read: "KEMA initially concluded, based on harmonic frequency scans only, that up to 20 miles of additional undergrounding appeared to be technologically feasible, but it stated

that its conclusion was conditioned on satisfactory results from further testing." (12/14/04 Tr. 155, 180-182; 2/17/05 Tr. 71-72)

FF 406. The results for the additional 10 miles of undergrounding are equal to or better than those for zero miles of additional undergrounding. (Tr. 1/13, p. 23)

FF 407. A study by Enernex shows the results for both the 10 and 20 mile undergrounding are equal to or better than those cases with zero miles of additional undergrounding. (Tr. 1/13, p. 23-24, p. 29, p. 30)

Exception: Findings 406 and 407 are misleading in that they leave out Mr. Gunther's critical qualification that cases with zero, 10 and 20 miles of additional undergrounding all had severe TOVs, and they also omit his clarification that the foregoing results were taken from millions of potential combinations. Specifically, Mr. Gunther testified, in response to a question about whether further studies should be performed, that:

> No, we've studied this, you know, thoroughly and we stand by the conclusion that it's clear to us on all of the results, not just these particular statistics, but all of the results. Especially the frequency scan results in Figure Six showing the general trend that it's clear that anything beyond the zero case exacerbates the problem and makes things significantly worse on balance when all of the issues are taken into account. 1/13 Tr. 25.

It also omits reference to further studies that were conducted after submission of the KEMA White Paper in January 18, 2005 regarding the final ROC Report prior to the last hearing date that indicated that TOVs were even more severe than EnerNex first reported, as reported in Draft Findings of Fact 464 and 478.

The results of such testing by ROC and its consultants indicated, with respect to 2 cycle TOVs, that there were 134 TOVs in the safety margin for case

5, but none which exceeded upgraded equipment ratings. For Case 5 plus 5 more miles of underground between East Devon and Beseck, there were 195 TOVs in the safety margin and 15 TOVs exceeding equipment ratings. For Case 5 plus 10 more underground miles, there were 251 TOVs in the safety margin and 54 TOVs exceeding equipment ratings. For Case 5 plus 20 more underground miles, there were 289 TOVs in the safety margin and 23 TOVs exceeding equipment ratings. (App. Ex. 199; 2/17/05 Tr. 109, 112-115).

Such results do not support the conclusion that the results of 10 and 20 additional miles of additional undergrounding are equal to or better than zero additional undergrounding. Accordingly, the foregoing findings 406 and 407 should be deleted.

FF 429. One of ISO's concerns about an imbedded system is that it is not typical of HVDC, that it is used more to link systems of different frequencies and for scheduled point to point deliveries from one system to another. (Tr. 1/13, p. 143)

Exception: As a matter of clarification, the foregoing sentence should be changed to read:

> One of ISO's concerns, in addition to conclusions it shared with the ROC that the HVDC proposal did not meet operability and reliability criteria specified by the ROC, was that HVDC is not typically used in an imbedded AC system. Instead it is used more to link systems of different frequencies and for scheduled point to point deliveries from one system to another. (Tr. 1/13/05, p. 142-43)

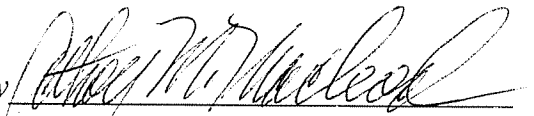
FF 452. ISO-NE would only support the use of C-filters in this project on an isolated capacitor bank, as a research project. In that case, if the capacitor bank fails, it would not cause the entire system to collapse. Wide-spread use of C-type filters is otherwise too great a risk. (Tr. 2/17/05, p. 103-104)

Exception: ISO was not supporting the use of C-filters as "a research project" in this project, and Mr. Whitley was not talking about the use of multiple C-filters. The context of Mr. Whitley's testimony makes it clear that he was describing the appropriate process for finding out if a C-filter could be used in this sort of application. Responding to a Council question regarding "the use of C-Filters for a project of this scale," not being reliable, Mr. Whitley testified as follows:

> That's correct. The ISO certainly could not support it at all. And partly it's because of the risks that you take. In other words, we could see using *a C-filter* as sort of a research project over on some isolated capacitor bank…but to use it on this project – and this project is now our network for serving load in this entire area, the risks are just too great… (*emphasis added*). (2/17/05 Tr. 103)

Respectfully submitted,

ISO NEW ENGLAND INC.

By 

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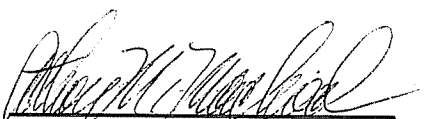
Its Attorneys

CERTIFICATION

I hereby certify that a copy of the foregoing was hand delivered or sent via email or first class mail postage prepaid, on March 29, 2005, to all parties and intervenors of record as shown on the service list.



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