

BEFORE THE CONNECTICUT SITING COUNCIL

**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)**

Docket No. 272

SUPPLEMENTAL TESTIMONY OF

MARC D. MONTALVO

ON BEHALF OF

THE OFFICE OF CONSUMER COUNSEL

25 MAY 2004

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Marc D. Montalvo. My business address is 20 Winthrop Square, Boston, Massachusetts, 02110.

Q. By whom are you employed and in what capacity?

A. I am employed by La Capra Associates as a Senior Consultant and Manager of Wholesale Market Analytics. I also serve on the firm's board of directors.

Q. Please describe briefly your professional background.

A. I have been employed by La Capra Associates since 1997. My professional experience includes power market design and implementation, market modeling and price forecasting, and power-system planning and operation. Prior to joining La Capra Associates, I was employed as an analyst in the Integrated Resource Planning department at the New England Power Company. I included a resume with the Direct Testimony that I filed in this docket on 9 March 2004.

Q. On whose behalf are you presenting testimony in this proceeding before the Connecticut Siting Council?

A. I am presenting this testimony on behalf of the Connecticut Office of Consumer Counsel (OCC).

Q. Did you appear at the Connecticut Siting Council's March 24, 2004 hearing to present oral testimony on behalf of OCC?

A. Yes, I did.

Q. What is the purpose of your Supplemental Testimony?

A. The purpose of my Supplemental testimony is threefold. First, I provide a detailed discussion in response to the questions from Chairman Katz (Tr., 3/24/04, p. 47) and Council-member Tait (Tr., 3/24/04, p. 72) regarding how specifically

the Connecticut Siting Council (Council) should implement the recommendations that I presented in direct testimony and in oral testimony at the 24 March 2004 hearing. Second, I present some additional perspectives on the East Shore alternative that has received some attention during the course of this proceeding. Third, I provide additional information regarding cost-sharing within the Regional Transmission Organization (RTO), as approved by the Federal Energy Regulatory Commission (FERC) for New England in an Order issued on 24 March 2004 (106 FERC ¶ 61,280), and related cost recovery issues.

II. SUMMARY OF RECOMMENDATIONS

Q. Please summarize your specific recommendations.

A. In my initial direct testimony, I indicated that additional analyses should be performed to demonstrate that the proposed project is in fact the most cost-effective solution to Southwest Connecticut's reliability problem. This supplemental testimony demonstrates that:

- (1) requiring the additional analyses that I recommend is fully consistent with the Connecticut Siting Council's mission and authority;
- (2) Connecticut statutes establish a mechanism by which the Connecticut Energy Advisory Board can act to acquire non-transmission resources, if the recommended additional analysis demonstrates that such resources would contribute to a plan that would better serve the public interest;
- (3) additional generating units located at New Haven Harbor, when combined with the East Shore alternative, may well represent a cost-effective alternative to the proposed project; and
- (4) although it appears that ISO New England is poised to provide financial support to the proposed project through cost sharing mechanisms that have been approved by the Federal Energy Regulatory Commission, it is reasonable to anticipate a limit to the level of undergrounding costs that will be eligible for regional support.

Q. Please summarize your concerns regarding the petition that has been submitted by the Connecticut Light and Power Company and the United Illuminating Company (Companies).

A. The Application in the proceeding proposes a solution to Southwest Connecticut's reliability problem that represents a "transmission-only" approach to resolving an established reliability need. As I recommended in my initial direct testimony, Connecticut should not accept the proposed solution if other, more cost-effective alternatives (or, I would add, other alternatives that, for whatever reason, are likely to better serve the public interest) are available. Additional analysis should be performed by the Applicants to explore reasonable alternatives to the proposed project before the Council approves their request.

To date only transmission-based solutions have been considered. Thus, I contend that the Companies have not provided the Council sufficient information on which to base its decision. Failure to consider integrated approaches to resolving the region's reliability needs is inconsistent with a balanced approach to resource planning and appears inconsistent with evolving Connecticut policy. This is particularly true in light of recent actions by the Connecticut Legislature, which set a statutory foundation to allow the State to adopt a more proactive role in optimizing its response to Southwest Connecticut's reliability need.¹

Q. What question did the Council ask you to address in this supplemental testimony?

A. Mr. Tait asked, "What concrete recommendations do you have that we should put in our decision to further the things that you have been talking about [during your oral testimony] that are within our power to order?" (Tr., 3/24/04, p. 72.) The supplemental testimony that follows responds to this question.

Q. What additional background information would you like to provide to the Council?

¹ See Public Act 03-140.

A. The New England Conference of Public Utilities Commissioners (NECPUC) submitted a letter to ISO New England on 4 February 2003 urging the ISO to adopt planning processes that would be resource neutral. Such a process would consider the merits of economically viable and technically feasible demand response, distributed generation, transmission and traditional generation as means of meeting reliability needs and improving the efficiency of the market. NECPUC emphasizes that its recommended resource planning approach is consistent with recent rulings of the FERC. For example, in its 2002 Order in *Remedying Undue Discrimination Through Open Access Transmission Service and Standard Electricity Market Design*, 100 FERC ¶ 61,138 at 347, FERC states that

. . . the planning process should leave open the question of how and by whom those [system expansion] needs should be met, without favoring one solution (whether it is transmission, generation or demand response) over another.

In a subsequent 2003 Order, *Proposed Pricing Policy for Efficient Operation and Expansion of Transmission Grid*, 102 FERC ¶ 61,032 at 32, FERC further stated that

. . . the most timely and cost-effective ways to meet demand for additional grid capacity will not always be additional transmission facilities; rather, they may be innovative operation practices, such as operation of facilities beyond traditionally accepted limits, distributed generation, demand response or demand-side management.

NECPUC's 4 February 2003 letter also states that "Not only should system planning be resource neutral, it must be designed so as to identify the least-cost approach to problems facing the system." [Emphasis added].

Q. Is your recommendation consistent with the approaches advanced by NECPUC and FERC?

A. Yes. My recommendation is that the Council (1) identify the least-cost solution to Southwest Connecticut's reliability need, and (2) take action to facilitate the

implementation of the least-cost resource plan. This recommendation is consistent with the views being advanced by NECPUC and FERC. Moreover, as I discuss below, such an approach appears consistent with a fair reading of recent amendments to Connecticut law.

III. THE STATUTORY CONTEXT IN CONNECTICUT

The Role of the Connecticut Siting Council

Q. What request have the Applicants made of the Connecticut Siting Council?

A. The Applicants have requested that the Council grant them a Certificate of Environmental Compatibility and Public Need for the 345kV transmission line and associated facilities between Scovill Rock switching station and Norwalk substation.

Q. What is the Council's statutory mission?

A. As established in Chapter 277a, Section 16-50g of the General Statutes of Connecticut, the mission of the Council is the regulation of facility siting to balance the need for adequate and reliable public services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the State.

Q. What is the Council's statutory responsibility with respect to an application for a Certificate of Environmental Compatibility and Public Need?

A. Subsection (a) of Section 16-50p of the General Statutes establishes that,

In a certification proceeding, the Council shall render a decision upon the record either granting or denying the application as filed, or granting it upon such terms as, conditions, limitations or modifications of the construction or operation of the facility as the Council may deem appropriate.

This statutory language appears to give the Council broad latitude to act to protect the public interest in issuing certificates of need. I understand that, in order to

achieve such purpose, the Council has in past decisions tailored its conditions of approval to the specific circumstances of an application.

The additional analysis that I recommend addresses the question of whether the proposed facility, in fact, meets the identified need at the lowest reasonable cost to consumers. Given the enormity of the cost of expanding transmission capacity through Southwest Connecticut and the potential for cost escalations due to additional undergrounding, the Council should act to ensure that all reasonable alternatives are explored before approving the Application.

Q. What did the Council conclude in its Decision regarding the “Phase I” transmission improvements to address Southwest Connecticut’s reliability problem?

A. The Council’s Decision in Docket 217 addresses transmission construction between Connecticut Light and Power’s Plumtree Substation in Bethel and its Norwalk Substation in Norwalk. These improvements are part of a broader plan to address Southwest Connecticut’s reliability problem. The Council’s “Revised Opinion” (at 2-3) issued on 9 September 2003 recognized the need for bulk power facilities in Southwest Connecticut. I concur that there is a need for additional bulk power facilities in Southwest Connecticut. The unanswered question is “To what degree can Southwest Connecticut’s need be met more cost-effectively by including non-transmission resources in the overall resource plan?”

Q. Do you view the Council’s Decision in “Phase I” as in any way limiting its ability to implement the recommendations as presented by you in your direct testimony, at the 24 March 2004 hearing, or herein?

A. I do not see the Decision in Docket 217 as constraining the Council’s actions with respect to my recommendations. In keeping with its statutory mandate, in the instant docket the Council is free to consider issues related to the question of whether the Application conforms to long-range plans for power supply to

Connecticut and whether the proposed facilities are in fact cost-effective relative to the feasible alternatives. My recommendation to consider all reasonable alternatives (i.e., from the standpoint of cost and otherwise) is fully within the scope of the review to be performed in Docket Number 272.

The Role of the Connecticut Energy Advisory Board

Q. Before turning to the specific recommendations that the Council should consider in this proceeding, please discuss the role of the Connecticut Energy Advisory Board.

A. The CEAB was recently restructured. This is important for two reasons. First, Southwest Connecticut's reliability problem is exactly the sort of complex problem that the restructured CEAB is intended to address. In its March 2004 *Energy Plan for Connecticut*, the CEAB states (at 69) that:

Many state agencies have authority over some decisions that affect energy demand, supply, technology, and price, as well as environmental impacts. However, since the energy system is affected by a variety of policies, most agencies have limited authority to implement a coordinated set of energy policy strategies. In part, the Board has been reconstituted to fill this void.

Second, Public Act 03-140 created mechanisms for implementing alternate responses to Southwest Connecticut's reliability problem. Section 19 of that Act establishes a process by which the CEAB may issue a request for proposals (RFP) in response to a need identified in regional energy system planning processes. Those RFPs are intended to seek alternative solutions to the need that would otherwise be addressed by a proposed facility, and can include proposals for generation or energy efficiency measures. Thus, action by the Council to ensure that reasonable alternatives to the proposed project are fully evaluated is more than just an academic exercise.

Q. So, if a specific need and least-cost solution is identified by the Council, the CEAB has statutory authority to respond?

A. Yes. The CEAB has statutory authority to respond to a finding by the Council that an alternative resource plan is feasible and would be more cost-effective. To the extent that the Council can identify specific locations and particular types of generation resources that would be desirable (e.g., cost-effective), the CEAB's response can be enhanced.

Q. And the CEAB is armed with a statutory mechanism for implementing such response?

A. It appears that the Legislature has vested in the CEAB the authority to issue RFPs in response to identified needs. If, for example, the Council finds that the inclusion of generating capacity in specific locations as part of an integrated infrastructure project is likely to represent a more cost-effective solution to Southwest Connecticut's reliability problem, the CEAB would be able to issue an RFP for power supplies to meet needs that need as soon as October 1, 2004. Specifically, Section 19(c) of Public Act 03-140 allows the CEAB to issue RFPs from that date if a need is identified in its own energy report or in ISO New England's planning processes. In my view, both of these institutions have recognized the reliability problem in Southwest Connecticut and the potential contribution of a variety of approaches (transmission, generation, conservation) to resolving that problem.

Q. If the CEAB were to issue an RFP for power supplies deliverable to a specific location, would such action be inconsistent with the workings of a competitive power market?

A. No.

Q. Please explain.

A. First, an unsolicited action by transmission or generation suppliers in response to planning reports and market signals from ISO New England is not the only means by which the wholesale power market must function. In fact, in many markets

that are fully competitive it is common for consumers to issue RFPs for goods and services that they are seeking. Moreover, those who have participated in restructuring the electric power industry have long anticipated that “bilateral contracts” would constitute a significant portion of the overall power supply. Such contracts often are the result of competitive solicitations.

As I indicated at the 24 March 2004 hearing, it may be appropriate for a statutory body to intercede in the market in response to a market failure. In this context, a competitive solicitation for generating capacity may be viewed as a market response to “the market’s” failure to date to deliver a cost-effective solution to Southwest Connecticut’s reliability problem (Tr., 3/24/04, pp. 25, 29).

Second, I would emphasize that a transmission expansion proposal brought by two traditional electric utilities seeking regulated rate recovery of the costs that they might incur is not a market response to the identified need in Southwest Connecticut in the sense that the construction of a “merchant” transmission facility where owners are compensated based only on throughput (such that their investment is fully at risk) would be.

Specifics of Implementing An Integrated Approach

Q. So, to repeat Mr. Tait’s question in part, what should the Council include in its decision?

A. This question is best answered in several parts. Let me begin by stating that the urgency of Southwest Connecticut’s need dictates that the Council consider issuing an interim decision indicating that it cannot approve the proposed project absent formal analysis of the feasible alternatives. Other related actions by the Council can wait until its final decision in this proceeding.

It is appropriate for The Connecticut Light and Power Company and The United Illuminating Company, in their capacities as public service companies, to perform

the additional analysis necessary to ensure reliable electric service at least-cost within their service areas. In initiating this effort, the Council should provide some guidance regarding the further analysis to be performed. As indicated in my direct testimony, assessing the merits of the Applicant's proposal requires consideration of the full range of viable alternatives. These would include distributed and other local generating facilities, demand-side programs, and probably some portion of the requested transmission upgrades. A specific focus on the East Shore Alternative that has received some attention in this proceeding may be appropriate, as I discuss further below.

The supplemental analysis should consider more than minimization of capital costs. To ensure that a given resource plan meets least-cost planning objectives requires an assessment of the carrying charges, energy costs (in SWCT), and rate impacts that would result from the plan. It is also important to consider environmental impacts, planning flexibility, operational impacts, and possibly other resource characteristics that might be relevant to the planning process in Connecticut and to the Council's final decision.

As suggested in my direct testimony, it would be both feasible and desirable to perform this supplemental analysis in parallel to the ongoing effort in Docket Number 272. This will enable the Council to utilize the results of that analysis in its decision in this proceeding.

Q. What process do you envision to fully achieve implementation of your recommendations?

A. The supplemental analysis described above might result in the development of an alternative that has superior performance to or is lower cost than the Applicant's current proposal. Assuming such a result, its implementation could be achieved in three stages, as described below.

Q. Please describe Stage 1 of the implementation process.

A. The Connecticut Siting Council would implement Stage 1. Conceptually, the implementation steps for this stage would be as follows.

The Council would act to ensure that a complete record is developed regarding the feasible alternatives to the proposal. The applicants have set a very good foundation for the supplemental analysis that should be performed (Tr., 3/24/04, p. 44). That foundation will facilitate further analysis. As I have suggested, a supplemental analysis could be initiated by asking the Applicants to broaden the range of alternative resources that they explore. This analysis should include alternate combinations of transmission upgrades taken in conjunction with expanded use of distributed generation, conservation and energy efficiency measures and the strategic siting of generation. The supplemental analysis would be conducted in parallel with the other activities in this docket (Tr., 3/24/04, p. 50). If through consideration of a broad range of resource options an improved solution were identified, it would be incumbent on the Applicants to bring that solution forward to the Council (Tr., 3/24/04, p. 22).

If the supplemental analysis supports a finding by the Council that there is an alternative to the proposed transmission project that would better serve Connecticut, the Council should so state in its decision in this proceeding. In such case, the process would move to Stages 2 and 3 as described below.

Q. What specifically would be included in the Council's decision in this proceeding?

A. In conceptual terms – and operating under the assumption that the alternative to the proposed transmission project includes (1) transmission facilities that were duly noticed and reviewed in this docket, and (2) generation facilities (such as described below as integral to the “Modified East Shore” solution) – the Council in its decision would conditionally approve the alternate transmission facilities,

subject to the condition that the generation facilities integral to the alternative receive the Council's approval within a specified timeframe. The Council's Decision should:

- Establish that there is a need for additional bulk power facilities in Southwest Connecticut;
- Identify the resource plan with the cost, environmental and other characteristics that the Council finds would best serve Southwest Connecticut's identified need;
- Specify all facilities that are granted a Certificate of Environmental Compatibility and Public Need through this proceeding, conditioned upon the Council issuing siting approvals for the other resources in the approved resource plan; and
- Identify the facilities (e.g., by generating capacity (MW), location, technology type, etc.) that are included in the optimal resource plan but for which siting approvals are not yet being granted.

Q. Could the Council, in this proceeding, approve siting for all facilities of the alternate resource plan?

A. It may be inappropriate for the Council to approve the alternative plan in full (i.e., including both its transmission and generation components) in its final decision in this proceeding, given that at present little is known of the particulars of its generating facility components. Moreover, the proceeding was not noticed as a review of proposed generating facilities in yet-to-be-determined locations. Thus, at least some of the facilities in the alternate plan likely would require a separate proceeding before the Council.

However, I anticipate that, once specific parties have been identified and have committed to develop such generation facilities (i.e., through a CEAB RFP), the Council would be in position to act expeditiously in response to an application for

siting approvals, which likely would be filed some months after the final decision in this proceeding. Through the instant proceeding a record will exist addressing the need for such generation facilities and establishing that they are part of a least-cost resource plan.

Q. So, as you envision it, the Siting Council could issue a final Decision in this proceeding that rejects the Application and grants a Certificate of Environmental Compatibility and Public Need based on the yet-to-be-developed record in this proceeding?

A. Yes. But I must emphasize here that I do not presume any particular result. If a thorough analysis of the feasible alternatives demonstrates that the proposed project is in fact the best option for Connecticut, the Council should not hesitate to issue its approval so that further development work can begin with all due haste. My discussion addresses a potential course if, and only if, an alternative plan proves viable.

Q. What if the Council issues a decision that follows the structure that you describe above? What happens in Stage 2 if an alternative resource plan is approved by the Council in Stage 1?

A. It would be up to the Connecticut Energy Advisory Board to implement Stage 2. As I see it, the challenge would be for the CEAB to design and implement an RFP that achieves the design objectives of the alternative resource plan approved by the Council. In short, the goal would be for the CEAB to take a proactive approach to acquiring the generation resources identified as part of the optimal plan for Connecticut (Tr., 3/24/04, p. 20). The CEAB would design and issue an RFP for particular types of generating facilities at particular locations, in keeping with the Council's findings in its decision (Tr., 3/24/04, p. 29-30). As discussed below, I believe that the supplemental analysis may point to the strategic siting of several 25 to 50 MW combustion turbines, possibly at or near New Haven Harbor or Bridgeport Harbor (Tr., 3/24/04, p. 34).

Note that this recommendation for Stage 2 assumes a path that avoids invoking the special powers granted in Section 17 of Public Act 03-135 to the Department of Public Utility Control to conduct an emergency solicitation for power supplies. The reliability problem in Southwest Connecticut warrants swift attention, but it seems that the RFP process established in Public Act 03-140 would represent a more deliberate, and thus more efficient, approach, even though speed will remain important. Should the DPUC invoke those emergency powers, the Siting Council is required to approve the siting of such temporary generation by declaratory ruling.² The approach being recommended here is quite different, and asks for thoughtful and deliberate actions from the Siting Council. This approach holds the potential for added value in that the expertise of the various statutory bodies represented on the CEAB may contribute to the design of an effective RFP process (Tr., 3/24/04, p. 23). This approach also seems consistent with the intent of the Connecticut Legislature in its framing of Public Act 03-140 (Tr., 3/24/04, p. 68).

Q. Would this CEAB RFP be an unusual or difficult process?

A. I am sure that capital works projects are nothing new to Connecticut. Neither are RFPs for generating capacity anything particularly unusual. The real challenge is likely to arise in the area of the State's commitment to cost recovery. However, this is a challenge that is fully within the CEAB's mandate.

Q. When you use the term "cost recovery," what costs are you referring to?

A. Before committing to build new generating facilities in Connecticut, generation suppliers can be expected to seek assurance that they will have access to revenue streams sufficient to recover the costs of their investments in generating plant plus a reasonable return (Tr., 3/24/04, p. 34). One source of such revenues will be the competitive wholesale market administered by ISO New England. However,

² See Section 6 of Public Act 03-140.

depending on market economics and the operating characteristics of the generating facilities that would be sought through a CEAB-administered RFP, a supplemental revenue stream may be necessary (Tr., 3/24/04, p. 32).

Note that generating plant need not be acquired in an ownership sense; contracts sufficient to ensure that generating facilities are sited in particular locations and operated according to a predetermined set of protocols should be sufficient to ensure that the bulk power system in Southwest Connecticut achieves an acceptable reliability level.

Q. What options exist for establishing a supplemental revenue stream to the owners of generating capacity acquired through an RFP administered by the CEAB?

A. At this time, I see three options for cost recovery. First, the State of Connecticut could back the CEAB solicitation, such that the obligation to make payments to generation owners whose power plant proposals are selected through the RFP process would fall to Connecticut taxpayers. This likely would be the least-desirable of the options, but may be necessary as an initial step (i.e., if one of the other options is feasible but cannot, for whatever reason, be implemented immediately).

The second option for cost recovery would shift to Connecticut's investor-owned utilities ("IOUs") the costs of supporting the supplemental revenue stream to generation owners that are successful in the CEAB's solicitation. These utilities historically have been responsible for providing reliable supplies of electricity to consumers in their service territories, most recently in the form of "Standard Offer" and "Transitional Standard Offer" generation service. It may be appropriate to assign to one or more of the IOUs any contracts initiated by the CEAB to ensure reliability in Southwest Connecticut. A mechanism would have to be created to achieve this result. The IOUs might choose to do so of their own

volition (just as they have joined together in an effort to introduce a transmission-based solution to the problem), or might be asked to do so through a petition filed with the Department of Public Utility Control by others. While I am not a lawyer, it does not appear to me that the fact that electric distribution companies may not own or operate generation in Connecticut would rule out this approach.³

The third option for cost recovery would shift the cost of supporting the supplemental revenue stream directly to load in Southwest Connecticut, perhaps through a surcharge assessed via a schedule to the ISO-NE Open Access Transmission Tariff. FERC has expressed a preference for assigning uplift costs needed to support facilities required for reliability to the local area benefiting from the improvement. Refer, for example, to 107 FERC ¶61,112, at 22.

Q. Do you see the options for cost recovery that you outline above as mutually exclusive?

A. No. A progression may represent the best approach. By this I mean that acting swiftly to address the significant reliability problem may require the CEAB to initiate the RFP as soon as possible, perhaps before provision can be made to implement the second or third option. However, if a mechanism for cost recovery that better suits Connecticut's needs can later be established (be it the second or third option, or something else), a transition to that better approach should be implemented.

Q. What is your view of Stage 3 of the implementation process?

A. In Stage 3, responsibility for implementing the plan would shift to the generation suppliers who are successful in the CEAB's solicitation for generating capacity. These generation suppliers would be expected to act swiftly to finalize their plans and obtain all necessary permits, including a Certificate of Environmental Compatibility and Public Need from the Council. Once permitting is complete,

³ See Section 18 of Public Act 03-135.

generation suppliers would be expected (contractually) to work in concert with those developing transmission facilities to make the resource plan approved by the Council a truly integrated solution to Southwest Connecticut's reliability problem (Tr., 3/24/04, p. 37).

Let me emphasize here that the Council's decision will be very important to potential generation suppliers. To the extent possible, the Council should make clear findings regarding the types and sizes (i.e., megawatts) of additional generation needed at specific locations in Connecticut that can be relied upon when generation owners approach the Council seeking Certificates of Environmental Compatibility and Public Need. Such findings likely would be viewed by generation suppliers as facilitating the process of gaining siting approvals in which they would have to engage. This, in turn, would be expected to (1) lower their costs and ultimately consumer costs for necessary generation supplies, (2) promote an enthusiastic response to the CEAB's RFP, and (3) ensure that necessary generation components of the alternate resource plan can be brought into service as expeditiously as possible (Tr., 3/24/04, p. 71).

Consideration of a Modified East Shore Alternative

- Q. How is this subject relevant to your testimony?**
- A. The Companies have studied a potential transmission alternative to the proposed project, the East Shore Alternative ("ESA"). This alternative was rejected because it failed to resolve all of the reliability concerns, particularly thermal overloads on the "387 line." The studies presented by the Company do suggest that the ESA is inadequate as a transmission-only alternative. However, these same studies can be interpreted to suggest that, if modified to include, as an integrated component of the solution, strategically sited generation, a Modified ESA might more cost effectively address the identified reliability problem.

As stated in my direct testimony and during the 24 March 2004 hearing, I believe that the Companies have focused too narrowly on transmission-only approaches to resolving the SWCT reliability problems. The testimony that follows discusses specific information from the Companies' studies of the ESA that support the premise that viable integrated generation-transmission alternatives probably do exist. Such viable alternatives must be fully vetted to the same standard as the project.

Q. What is the East Shore Alternative?

A. At the 25 March 2004 pre-hearing conference, Assistant Attorney General Wertheimer asked the Companies to provide a statement defining the East Shore Alternative. My working definition of the ESA is based on the Companies' 8 April 2004 letter to the Council in response to that request. The ESA proposes to utilize an existing transmission line (i.e., the 387 line) in place of a substantial portion of the new transmission construction proposed for the Project between Wallingford and Milford, specifically between the Beseck and East Devon substations, respectively. The "387 line" in question here refers to a section of existing 345 kilovolt (kV) transmission line that runs from Wallingford to East Haven.

Q. Describe the Companies' studies regarding the reliability performance of the ESA as an alternative solution to the Project.

A. Beginning in December 2003, the Companies, working in parallel with ISO New England, performed a series of reliability studies with the purpose of comparing the reliability performance of the ESA to the Project. The studies that I have reviewed include studies from the Companies and ISO New England, as included in the Application. These studies focus on reliability in Southwest Connecticut from two vantage points: thermal loading and voltage performance.

Q. Please continue.

Thermal loading and voltage performance standards are addressed within the context of the so-called “N-2” planning standard of the North American Electric Reliability Council’s (“NERC”). This standard requires that the bulk power system be designed to serve electric load in a reliable manner such that, even after the loss of any critical system element, the power system is still able to reliably serve loads. The “N-2” standard further requires that, within 30 minutes after the loss of the most critical system element, the power system must be able to sustain the loss of the next most critical element. Critical system elements are defined to include generating units, transmission lines, transformers, phase angle regulators, or other transmission system facilities.

The tests are designed to ensure that, under the prescribed contingency conditions, the components of the transmission system not violate thermal, voltage or short circuit standards. As I mentioned earlier, the studies submitted by the Companies addressed the thermal loading and voltage performance aspects of system reliability standards. The thermal loading and voltage performance standards are summarized in my Exhibit 1 (attached). It is my understanding that the studies are ongoing; as such, they might eventually include short circuit analyses.

Q. How is compliance with the “N-2” planning criterion demonstrated by the Companies?

A. Compliance with “N-2” planning criterion is generally demonstrated by conducting a series of deterministic analyses which measure the performance of the system assuming that the two most critical system elements are out of service while the balance of the system is operating as reasonably may be expected under peak load or other key stress conditions. Note that these “critical system elements” may be within or outside of SWCT. The Companies’ reports describe and document the list of transmission contingencies tested.⁴

⁴ Several contingencies are generally tested in reliability studies such as this, including outages of single transmission lines, outages of transmission towers carrying double circuits, transformer outages and transmission circuit breaker failures.

Q. Of the various contingencies explored by the Companies, which seemed most problematic relative to the East Shore Alternative?

A. The Companies consider the New Haven Harbor generating station a critical contingency for the purposes of evaluating the ESA.⁵ Though New Haven Harbor is not considered to be within the SWCT region, the Companies have determined that its availability would significantly affect the performance of the ESA. The analysis showed that the ESA performed at inadequate levels with respect to thermal standards under a contingency scenario in which New Haven Harbor's generating capacity was out-of-service, thus the ESA failed to achieve NERC's "N-2" reliability standard.

Q. What other generating unit contingencies were explored in evaluating the ESA?

A. The Companies tested the reliability performance of the ESA with respect to other generation contingencies. Four different generation dispatch scenarios were tested by the Companies, together with the list of transmission contingencies (as referenced above). Generator unavailability or other stresses to the bulk power system can constrain which generators can be dispatched to meet customer demands at any given time. Availability assumptions with respect to generators located in, or in close electrical proximity with SWCT are shown in my Exhibit 2 (attached) for the four dispatch scenarios tested.

Q. What other factors were considered in the "N-2" analysis?

A. Note that when the power system is operating normally, the exchange of power between New England and New York is generally according to contracts entered into by participants in the wholesale power markets. A proposed solution to the SWCT reliability problem must operate reliably under the range of likely New England to New York power exchanges. The Companies presented the results of

⁵ Re: ISO-NE, "Comparison of Middletown to Norwalk Project vs. East Shore Alternative," 2-18-04, p7 and Section 4.2.

studies that considered different assumptions regarding power exchange with the New York region.

All tests were performed with New England peak load set at 27,700 MW, which corresponds to the peak load forecast for 2010 to 2011.⁶ Under extreme summer weather conditions, this load may be reached as early as 2004 or 2005. This way, the performance of the system under future system loading conditions is tested.

Q. Please summarize the Companies' conclusions regarding the technical feasibility of the ESA.

A. The Companies and the ISO concluded that the ESA was an "unacceptable substitute" to the Project, primarily because, under certain conditions, it violated thermal loading standards required by NERC.

Q. Do the Companies investigate whether modifications to the ESA could provide a fix to the observed thermal loading violations?

A. Yes. The Companies investigate the possibility of achieving a fix through replacing the existing conductor in the limiting section of the line. They explored new conductors⁷ that can carry 20% more load (the equivalent of about 210 MW).⁸ They state that, "even with the assumed reconductoring of the limiting portion of the 387 line, the line continues to overload." In connection with the reconductoring modification, they further state that "the outage of this line yields substantial overloads in remaining transmission corridors serving SWCT and the 345-kV across the state."⁷ They ultimately conclude that, "since the East Shore Alternative is not considered acceptable, continued comparative testing was not performed."⁷

⁶ Re: NEPOOL 2004 CELT Report, Reference Load Forecast.

⁷ Re: ISO-NE, "Comparison of Middletown to Norwalk Project vs. East Shore Alternative," 2-18-04, p7 and p13.

⁸ Re: Attachment 3 to Addendum #2 of the Companies' Supplemental Filing, 1-28-04, p6.

Q. What limitations do you perceive in the Companies' efforts at modifying the ESA in order to eliminate the problematic thermal loading violations?

A. As I emphasized in my written and oral testimony during the 24 March 2004 hearing and reiterate here, the main technical limitation I see in the Companies' filings is the lack of consideration of a broader range of alternatives. The Companies' efforts at modifying the ESA reflect have considered only alternative transmission configurations. In my opinion, evidence from the Companies' analyses strongly suggests the potential for combining new quick-start generating capacity with the ESA to obtain a "Modified ESA" with equal or better thermal loading performance, than the proposed project.

Q. Please describe the evidence you allude to in the Companies' analyses that suggests that a "Generation-Augmented ESA" could produce equal or better thermal loading performance than the Project.

A. In order to compare the reliability performance of the ESA to the project, the Companies conducted a variety of stress tests to represent various extreme transmission and generation contingencies. I have described the methodology used by the Companies earlier in this testimony. Apart from providing a basis for comparing the reliability performance of the competing transmission alternatives, the generation contingencies in particular are also inherently informative on how additional generation can be used to maintain reliable system performance in SWCT.

The Companies' analyses of generation contingencies within or close to SWCT indicate that certain generation resources in or close to SWCT are critical to the reliability performance of the ESA. The unavailability of these critical generators makes all the difference regarding the reliability performance of the ESA. Conceptually, therefore, the ESA can be brought to acceptable reliability performance if backup generation capacity is provided for SWCT. My Exhibit 3 (attached) compares the ESA to the project for one of the reliability tests

performed by the Companies.⁹ In this test, which assumes the New Haven Harbor generator is available, the ESA has comparable or better performance than the project. Other tests conducted with the New Haven Harbor generator out of service led to the majority of the reliability problems that formed the basis of the Companies' conclusions. I propose that the Companies test the reliability performance of the ESA if additional generation capacity is installed in East Haven or elsewhere within SWCT. The optimal generator configuration by way of size, location and etc., can be determined with the appropriate studies.

Q. Please explain further how the optimal generation configuration to augment the ESA may be determined.

A. Different locations other than East Haven, e.g., between Bridgeport and Norwalk, will provide different levels of coverage to offset the New Haven Harbor generator contingency. The goal is to identify the location(s) that would provide the greatest benefit at the least cost. In consideration with site and other known limitations, generation schemes involving siting units at single and multiple locations must be tested. Once the most effective location(s) are identified, generator size also can be optimized.

Q. What about the problems cited by the Companies regarding building additional generation in SWCT?

A. The Companies have suggested potential short circuit problems as posing an impediment to siting new generation in SWCT. The Project remedies this problem by providing 345 kV interconnections at the problematic substations. These same 345 kV interconnections are retained in the ESA concept. Short circuit problems therefore should be mitigated to the same degree with the ESA as with the Project.

⁹ Re: ISO-NE, "Comparison of Middletown to Norwalk Project vs. East Shore Alternative," 2-18-04, Section 4.1, Table 3.

Cost Sharing

Q. Please recap your prior testimony on the issue of cost sharing.

A. In my direct testimony, I indicated that there currently is some uncertainty regarding cost sharing within NEPOOL. The 100th Agreement Amending the NEPOOL Agreement, as filed with FERC on 31 July 2003, creates a category of transmission upgrades called “Regional Benefit Upgrades” that are eligible for regional cost support. I also indicated in my direct testimony that, to my knowledge the project had not yet received such designation, nor was it clear what portion of the project’s costs would receive regional cost support if it is eventually deemed a “Regional Benefit Upgrade.”

Q. Do you have further information regarding the cost sharing issue?

A. Yes, I would like to clarify my initial direct testimony in this regard. On 18 December 2003, the FERC approved a proposal from ISO New England and NEPOOL for revisions to the approach to allocating the costs of new transmission projects. Under the ISO New England / NEPOOL proposal, all transmission improvements that are necessary to ensure the continued reliability of the region’s bulk power grid are eligible for cost sharing. FERC’s December 18 Order, 105 FERC ¶ 61,300 (at 5), makes clear that all projects listed in RTEP02 and RTEP would constitute “Reliability Upgrades,” including the SWCT 345kV project. As such, the project would be eligible for cost sharing.

Q. What do you mean by cost sharing? To what extent might the costs of a project to resolve a local reliability problem be “shared”?

A. The methodology approved in FERC’s 18 December 2003 Order establishes that transmission facilities rated at 115kV and above will be eligible for regional cost support. Costs excluded from regional cost support include “Localized Costs” such as the costs of constructing underground transmission lines when such construction is not justified. Regional cost support refers to

the costs of transmission facilities that will be rolled into the regional transmission rates paid by all network transmission customers under the region's open access transmission tariff.

The FERC's 18 December 2003 Order reveals FERC questioned ISO New England and NEPOOL regarding whether the costs of placing underground sections of the SWCT 345kV project would be eligible for regional cost support. The Order states (at 6) that "ISO New England and NEPOOL ... are unable to answer the question of whether burial costs would be localized or regionalized as this, they state, would prejudge the Connecticut siting process that has just begun for Phase II."

Q. How do you interpret this statement from Page 6 of the FERC's 18 December 2004 Order?

A. It appears that ISO New England and NEPOOL – and apparently the FERC as well – are willing to allow the Connecticut Siting Council a measure of discretion in deciding the degree to which it is necessary to place underground portions of the proposed project without impairing its eligibility for regional cost support. However, I believe, if the Council requires underground construction to a degree that deviates substantially from what is necessary from a technical design standpoint, that some level of costs will be deemed "localized" and thus not eligible for regional cost support.

Q. What if NEPOOL is unwilling to participate in the additional costs necessary to place certain transmission segments underground?

A. The infrastructure upgrades will bring important reliability benefits to many communities in Southwest Connecticut. As such, it could be considered fair for all communities to bear a portion of the cost burden associated with the construction and operation of these facilities. However, it also is possible that additional costs may be incurred to place certain segments of the transmission

line underground in response to the aesthetic concerns of communities along the transmission route. In that circumstance, it could be considered unfair to burden communities not benefited by such expenditures (communities that, by contrast, place a priority on rate minimization) with those extra costs.

Section 11 of Public Act 04-246, *An Act Concerning Electric Transmission Line Siting Criteria*, does not (should it become law) provide much guidance on this matter. It provides merely that the distribution companies may recover the prudent costs of reconfiguring or burying the present transmission line, in consequence of this legislation itself, in their rates. This does not resolve in advance the question of whether such costs would be allocated to all ratepayers or to particular communities. The Department of Public Utility Control would, of course, have jurisdiction over such ratemaking surcharge. I assume that its eventual determinations on point would be guided, at least in part, by the Siting Council's pertinent factual findings.

Q. On 24 March 2004, the FERC approved ISO New England's request for status as a Regional Transmission Organization. Will this affect your assessment of cost sharing?

A. No. RTO New England's Open Access Transmission Tariff, as included in the RTO filing, specifically identifies SWCT 345kV project costs as RTEP02 costs as recoverable, if placed in service on or before 20 December 2007 (see Sheets 478 and 487). Moreover, the Transmission Operating Agreement included as part of the approved RTO filing package imposes a five year moratorium on filings by participant transmission owners and RTO New England that would alter the methodology by which the costs of transmission upgrades and new transmission facilities are allocated under the region's open access transmission tariff (see Article III, Section 3.04(h)). The above notwithstanding, the FERC's stated policy position on cost recovery in its Staff White Paper and then in the 18 December 2003 Order regarding the so-called

TCA Amendments (Docket Nos. ER03-1141- et al) suggests that transmission projects that improve either the reliability (e.g., the addition of looped facilities) or the efficiency of the market (e.g., the relief of generation pockets) will be eligible for some manner of socialized cost recovery. The proposed project broadly meets both of those criteria. Thus, even if it is not in service by the end of the moratorium, it stands to reason that a strong argument could be made in favor of some level of socialized cost recovery.

Q. Does this conclude your testimony?

A. Yes, it does.