THE CONNECTICUT SITING COUNCIL
DOCKET NO. 217

Application of the Connecticut Light and Power Company
for a Certificate of Environmental Compatibility
and Public Need for an Electric Transmission Line Facility
between Plumtree Substation, Bethel
and Norwalk Substation, Norwalk

Testimony, Supplemental Testimony and Second Supplemental Testimony of

David A. Schlissel
Peter J. Lanzalotta
Paul R. Peterson

On behalf of
The Towns of Bethel, Redding, Weston and Wilton, Connecticut

March, 2002, November 2002 and January 2003

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March 12, 2002

Q. Mr. Schlissel, please state your name, position and business address.

A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Mr. Peterson, please state your name, position and business address.

A. My name is Paul R. Peterson. I am a Senior Associate at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Mr. Lanzalotta, please state your name, position and business address.

A. My name is Peter J. Lanzalotta. I am Principal with Lanzalotta & Associates LLC, ("Lanzalotta") 9762 Polished Stone, Columbia, Maryland 21046.

Q. On whose behalf are you testifying in this case?

A. We are testifying on behalf of the Towns of Bethel, Redding, Weston and Wilton, Connecticut ("Towns").

Q. Mr. Schlissel, please summarize your educational background and recent work experience.

A. I graduated from the Massachusetts Institute of Technology in 1968 with a Bachelor of Science Degree in Engineering. In 1969, I received a Master of Science Degree in Engineering from Stanford University. In 1973, I received a Law Degree from Stanford University. In addition, I studied nuclear engineering at the Massachusetts Institute of Technology during the years 1983-1986.

Since 1983, I have been retained by governmental bodies, publicly-owned utilities, and private organizations in 24 states to prepare expert testimony and analyses on engineering and economic issues related to electric utilities. My clients have included the Staff of the California Public Utilities Commission, the Staff of the Arizona Corporation Commission, the Staff of the Kansas State Corporation Commission, the Arkansas Public Service Commission, municipal utility systems in Massachusetts, New York, Texas, and North Carolina, and the Attorney General of the Commonwealth of Massachusetts. I am currently a Senior Consultant at Synapse Energy Economics.

I have testified before state regulatory commissions in Connecticut, Arizona, New Jersey, Kansas, Texas, New Mexico, New York, Vermont, North Carolina, South Carolina, Maine, Illinois, Indiana, Ohio, Massachusetts, Missouri, and Wisconsin and before an Atomic Safety & Licensing Board of the U.S. Nuclear Regulatory Commission.

A copy of my current resume is attached as Exhibit SPL-1.

Q. Mr. Peterson, please summarize your educational background and recent work experience.

A. I am a graduate of Williams College and have a Juris Doctor degree from Western New England College School of Law.

I have twenty-two years of experience on energy policy issues through work with the University of Vermont Extension Service, the Vermont Public Service Board, and most recently, ISO New England, Inc. ("ISO-NE") the operator of the regional electric grid for New England.

During my eight-years of work for the Vermont Public Service Board, I focused on electric utility integrated resource planning, electric rate cases, and numerous other proceedings. I also was Chair of the Staff Energy Policy Committee for the New England Conference of Public Utilities Commissioners and directly involved in the negotiations to re-design the New England wholesale electric markets and create the Independent System Operator.

I joined ISO New England in the fall of 1998 to manage its regulatory affairs. For two and one-half years, I worked with state, regional and federal entities and regulators regarding ISO New England development and implementation issues. These included the start-up of the new wholesale markets in 1999, changes and improvements to those markets, market monitoring reports, the development of load response programs, the implementation of electronic dispatch, and the long-term efforts to develop and implement a congestion management system and a multi-settlement system. I also was involved in the early discussions and filings

related to the Federal Energy Regulatory Commission's efforts to establish regional transmission organizations ("RTOs").

I am currently Synapse's representative at ISO New England's Transmission Expansion Advisory Committee ("TEAC") meetings which are part of ISO-NE's Regional Transmission Expansion Planning process. I have closely followed the presentations that have been made at the TEAC by Northeast Utilities ("NU") and the Southwestern Connecticut Reliability Study Group. I am also the voting representative at the NEPOOL Participants Committee meetings on behalf of our member clients.

A copy of my current resume is attached as Exhibit SPL-2.

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics ("Synapse") is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Q. Mr. Lanzalotta, please summarize your educational background and recent work experience.

A. I am a graduate of Rensselaer Polytechnic Institute, where I received a Bachelor of Science degree in Electric Power Engineering. In addition, I hold a Masters degree in Business Administration with a concentration in Finance from Loyola College in Baltimore.

I am currently a Principal of Lanzalotta & Associates LLC, which was formed in January 2001. Prior to that, I was a partner of Whitfield Russell Associates, with which I had been associated since March 1982. My areas of expertise include electric system planning and operation, cost of service, and utility rate design. I am a registered professional engineer in the states of Maryland and Connecticut.

In particular, I have been involved with the planning and operation of electric utility systems as an employee of and as a consultant to a number of privately- and publicly-owned electric utilities over a period exceeding twenty-eight years.

I have presented expert testimony before the FERC and before regulatory commissions and other judicial and legislative bodies in 16 states, the District of Columbia, and the Provinces of Alberta and Ontario. My clients have included utilities, regulatory agencies, ratepayer advocates, independent producers, industrial consumers, the United States Government, and various city and state government agencies.

A copy of my current resume is included as Exhibit SPL-3.

Q. Mr. Schlissel, have you filed testimony in support of the construction of a new high voltage transmission line?

A. Yes. I filed testimony before the West Virginia Public Service Commission in March 1998 supporting Appalachian Power Company's proposal to build a 765-kV transmission line from West Virginia to Virginia. My support of that transmission line was based on my review of Company and consultant analyses which showed that the line was needed to enable the Company to adequately and reliably serve the needs of customers in its Eastern/Southern service areas.

Q. Mr. Lanzalotta, have you ever filed testimony in support of the construction of a new high voltage transmission line?

A. Yes. I filed testimony in 1992 before the Public Utilities Commission of Hawaii in which I supported the construction of a double-circuit 138-kV transmission line.

Q. What is the purpose of your testimony?

A. Synapse and Lanzalotta were retained by the Towns to examine whether alternatives to Connecticut Light & Power Company's ("CL&P" or "NU") proposed 345-kV line from Plumtree to Norwalk would provide needed additional capacity and enhance system reliability in the Norwalk-Stamford and Southwest

Connecticut load pockets with lower environmental and societal impacts. This testimony presents the results of our analyses.

Q. Please explain how you conducted your analyses.

A. We originally reviewed CL&P's Draft Application and prepared comments that the Towns submitted to the Company in October 2001. Since that time we have reviewed CL&P's Final Application to the Siting Council. We also have submitted interrogatories to the Company and reviewed CL&P's responses to the discovery submitted by the Towns, the Attorney General, the Office of Consumer Counsel, the Siting Council, and other active parties. In addition, we have reviewed the transmission loop analyses presented in the January 2002 Southwestern Connecticut Reliability Study Interim Report. Finally, we have submitted two sets of discovery to ISO New England and reviewed ISO-NE's responses to those interrogatories.

Q. Please summarize your conclusions.

A. We have reached the following conclusions:

1. CL&P is asking the Siting Council for a Certificate of Environmental Compatibility and Public Need for only a proposed 345-kV overhead transmission line between Plumtree and Norwalk substations and the reconstruction of the existing 115-kV transmission line. CL&P is not at this time requesting approval from the Siting Council to build the remaining segments of its publicly-announced 345-kV loop in Southwest Connecticut.

2. CL&P has not presented any analyses or studies comparing the benefits of constructing only the Plumtree to Norwalk 345-kV transmission line that is the subject of this proceeding to other possible transmission lines or system reinforcements. The only analyses that CL&P has provided, including those prepared for ISO New England, examined the benefits of completing the entire proposed 345-kV loop.

3. CL&P has not presented any evidence that the construction of a lower voltage transmission line or several lower voltage lines between Plumtree and Norwalk would not adequately increase the transfer limits into the Norwalk-Stamford area and reduce reliance on local generation in that area.

4. We believe that reinforcement of the transmission system in Southwest Connecticut is necessary to ensure adequate system capability and reliability.

5. Our analyses show that the construction of two underground 115-kV transmission lines from Plumtree to Norwalk substations would bring enough additional power into the Norwalk-Stamford area to reliably serve projected customer loads through at least the year 2020 even if extreme weather conditions are assumed. The construction of these lines also would bring economic benefits to customers in the region.

6. To be conservative, our analyses have excluded the additional power that could be imported into the Norwalk-Stamford area if the existing Peaceable-Norwalk 115-kV transmission line were reconductored. In addition, we have used CL&P's base case and extreme demand forecasts which are based on historic and extreme weather conditions, respectively. Our analyses have not reflected any of the reductions in peak loads that could result from customers' participation in load response programs, the use of distributed generation facilities or more aggressive demand side management efforts.

7. If our analyses had reflected reductions in future peak demands as a result of load response, distributed generation, or more aggressive demand side management programs, the need for any additional transmission import capability beyond the Towns' proposed two underground 115-kV lines would be deferred even further into the future.

8. To be conservative, our analyses also did not assume the construction of any new baseload, intermediate or peaking facilities in the Norwalk-

Stamford area or the potential repowering of the Norwalk Harbor Station. The presence of any such new or repowered facilities would enhance the reliability of the transmission system in Southwest Connecticut and defer the need for any additional transmission import capability beyond the Towns' proposed lines further into the future.

9. The Towns believe that two underground 115-kV lines from Plumtree to Norwalk could be installed in a single trench along the alternative underground route discussed by CL&P or as modified by the Siting Council. The placement of two underground transmission lines in the same trench is an accepted industry practice.

10. The two lines proposed by the Towns would use solid dielectric cable. Even CL&P has acknowledged that dielectric cable is an accepted and proven technology for use in underground 115-kV transmission lines.

11. CL&P's proposed 345-kV transmission line would carry as much as 2,000 MW of power into the Norwalk-Stamford area. This would be far more power than would be needed in Norwalk-Stamford at any time in the next sixty or more years, even under CL&P's extreme peak load forecasts. The additional capacity provided by the proposed 345-kV line would enable CL&P to transmit power for sale in the lucrative Long Island and New York City markets.

12. The Siting Council need not be concerned that NRG, Inc., will retire the Norwalk Harbor generating units in the near future. The New England market rules and procedures, as administered by ISO New England and NEPOOL, prevent a generating unit owner from retiring a unit if such retirement would jeopardize the reliability of the electric system. CL&P has said that it does not believe that NRG is authorized to shut down any of its generating units in Southwestern Connecticut without approval by ISO New England. Moreover, the receipt of transmission congestion payments provides an economic incentive to NRG to continue operating the Norwalk Harbor Station.

13. The additional import capacity provided by the two underground 115-kV transmission lines would significantly reduce congestion costs and increase the ability of customers in the Norwalk-Stamford area to access power from lower cost generating facilities in Southwest Connecticut and the rest of New England.

14. CL&P's has proposed that the new 345-kV be carried on the same towers as the reconstructed 115-kV line from Plumtree to Norwalk. CL&P has admitted that having two transmission lines on common structures would be a reliability concern unless the second phase of the 345-kV loop is completed.

15. The addition of the Towns' two proposed underground 115-kV lines using a different route from the existing 115-kV line from Plumtree to Norwalk, however, would enhance system reliability by eliminating the possibility of common cause failures.

16. In summary, there is no public need for CL&P's proposed 345-kV transmission line. The addition of two underground 115-kV lines from Plumtree to Norwalk substations would import enough power into the Norwalk-Stamford area to satisfy projected customer demands through at least the year 2020 even if extremely hot summer weather is assumed. The addition of these two 115-kV lines also would reduce reliance on local generation within the Norwalk-Stamford area and lower transmission congestion costs. CL&P's proposed 345-kV transmission line would import far more power into the Norwalk-Stamford area than would be needed at any time over the next sixty years even under extreme weather conditions.

17. CL&P is relying on the very same set of transmission loop studies that are discussed in the January 2002 Southwestern Connecticut Reliability Study Interim Report. Northeast Utilities and ISO New England jointly performed these studies.

18. The NU and ISO New England transmission loop studies are seriously flawed in a number of ways which make them extremely biased in favor of NU's preferred 345-kV alternative and against the 115-kV and 230-kV options examined.

19. The power carrying capabilities of the 115-kV alternatives studied by NU and ISO New England were unfairly and significantly hampered by the failure to include any new transmission lines from the Plumtree to the Norwalk substations. The absence of any such lines resulted in additional stresses on the transmission systems in Southwest Connecticut and biased the results in favor of the 345-kV loop alternative.

20. The NU and ISO transmission loop studies used peak loads for the year 2006 for the State of Connecticut, Southwest Connecticut and the Norwalk-Stamford area that were significantly higher than CL&P and the Siting Council have projected. In fact,

- Under CL&P's 2002 Base Case forecast, the Norwalk-Stamford area will not reach the 1,298 MW peak load used in NU and ISO New England studies until the year 2018 and Southwest Connecticut will not reach the 3,747 MW peak load used in the NU and ISO New England studies before the year 2020.
- Under CL&P's more extreme forecast based on the actual 2001 peak day weather, the Norwalk-Stamford area will not reach the 1,298 MW peak load used in the NU and ISO New England studies until the year 2009 and Southwest Connecticut will not reach the 3,747 MW peak load used in the NU and ISO New England studies before the year 2013.
- Under the forecasts accepted by the Siting Council in its November 2001 Twenty Year Forecast, the State of Connecticut will not reach the 7,410 MW used in the NU and ISO New England studies until nearly the year 2020.

21. NU and ISO New England only examined the 115-kV loop alternative in a generator dispatch scenario that assumed that only 869 MW of generating capacity would be operating in Southwest Connecticut at the time of the system peak. This unrealistic assumption stressed the 115-kV loop alternative. By contrast, when NU and ISO New England examined the

345-kV loop alternative they also looked at dispatch scenarios in which 2,464 MW and 2,791 MW of generating capacity would be operating in Southwest Connecticut at the time of the system peak.

22. We have reviewed and tested the transmission load flow studies provided by CL&P and ISO New England that examined various base case and 345-kV and 115-kV transmission system enhancement scenarios. In particular, we studied the effects of installing two new underground 115-kV transmission lines from Plumtree to Norwalk. These reviews and analyses led to the following conclusions:

A. There is a need for reinforcement of the transmission system in Southwest Connecticut especially if it is assumed i) that there will be no available generation at Norwalk Harbor, and ii) that the transmission system should have the capacity, even with outages of critical facilities at the time of the annual peak demand, to supply several hundred megawatts of power to New York, via the underwater cable system out of Norwalk. If this is not the case, then there is less of a need for system reinforcement.

B. The 345-kV line proposed by CL&P would address many of the transmission line overloads that could occur if the system is not reinforced. However, a number of lines would continue to be overloaded even if CL&P's proposed 345-kV line were constructed. In addition, the installation of the proposed 345-kV line would lead to other line overloads, especially on transmission lines leading out of Norwalk.

C. The two 115-kV lines proposed by the Towns would provide substantial reinforcement to the transmission system in Southwest Connecticut and relieve many of the projected overloads on the existing transmission system in scenarios with all lines in service and with selected contingencies. Under normal conditions and under most of the selected contingencies we examined, the 115-kV alternative performed as least as effectively as the 345-kV proposal in relieving transmission line overloads.

D. The two 115-kV lines proposed by the Towns have reliability advantages over the 345-kV line proposed by CL&P.

E. Both the 345-kV line proposed by CL&P and the Towns proposed alternative of two 115-kV lines reduce system losses in the CL&P and UI zones. CL&P's 345-kV alternative reduces loses by about 33 MW, while the Towns' 115-kV alternative reduces system losses by 21 to 22 MW.

Q. Please describe the project which CL&P is currently asking the Siting Council to approve in this proceeding.

A. The Company is asking the Siting Council as its preferred alternative to grant a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction of a proposed 345-kV overhead transmission line and the reconstruction of an existing 115-kV transmission line between Plumtree and Norwalk substations.

Q. Is CL&P currently requesting a Certificate from the Siting Council to construct any other segments of its so-called 345-kV transmission loop?

A. No. CL&P is not requesting approval from the Siting Council in this proceeding to build the remaining segments of its publicly-announced 345-kV loop in Southwest Connecticut.

Q. Has CL&P presented any analyses or studies comparing the benefits of constructing only the Plumtree to Norwalk 345-kV transmission line that is the subject of this proceeding to other possible transmission lines between the two substations?

A. No. The only analyses that CL&P has provided, including those prepared for ISO New England, examined the benefits of completing its entire proposed 345-kV loop.

Q. Has CL&P presented any evidence that the construction of a lower voltage transmission line or several lower voltage lines between Plumtree and Norwalk would not adequately increase the transfer limits into the Norwalk-Stamford area and reduce reliance on local generation in that area?

A. No. CL&P has not presented any evidence looking at alternatives to the construction of only the proposed 345-kV Plumtree to Norwalk line that is the subject of this proceeding.

Q. Do you agree that the transmission system needs reinforcement to ensure adequate system capability and reliability to serve customer demands in Southwest Connecticut?

A. Yes. Based on our familiarity with the transmission system in Southwest Connecticut from earlier studies, our review of the analyses that CL&P has provided to the Towns and the conclusions of ISO New England's October 2001 Regional Transmission Expansion Plan ("RTEP01") we believe that reinforcement of the transmission system is necessary to ensure adequate system capability and reliability.

Q. Have you analyzed whether the construction of one or more lower voltage transmission lines between Plumtree and Norwalk would adequately increase the transfer limits into the Norwalk-Stamford area?

A. Yes. We have determined that the construction of two new underground 115-kV transmission lines from Plumtree to Norwalk substations would bring enough additional power into the Norwalk-Stamford area to reliably serve projected customer loads through at least the year 2020 even if extremely hot summer weather conditions are assumed. These lines also would bring economic benefits to customers in the region.

Q. Please describe the analyses which form the basis for this conclusion.

A. Figures SPL-1, SPL-2, and SPL-3 below show that under CL&P's recently issued base case 2002 forecast, the addition of two underground 115-kV transmission lines from Plumtree to Norwalk will ensure that there will be adequate transmission and generation capacity in the Norwalk-Stamford area past the year 2020 to ensure adequate system reliability even if the two largest generating units (i.e., Norwalk Harbor Units 1 and 2) or the two largest transmission lines or one of the Norwalk units and one of the largest transmission lines are out of service at the same time. These figures reflect the double contingency planning criteria that CL&P has discussed in its Application to the Siting Council.

Figure SPL-1
Norwalk-Stamford Peak Demand
Norwalk Units 1 and 2 Out of Service
2002 CL&P Base Case Forecast

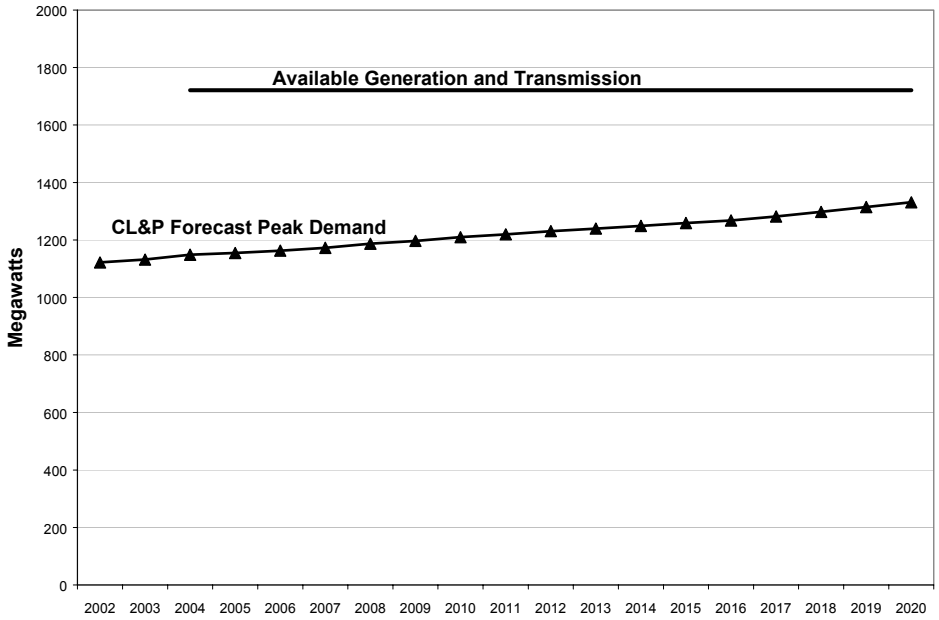


Figure SPL-2
Norwalk-Stamford Peak Demand
Two Largest Transmission Lines Out of Service
2002 CL&P Base Case Forecast

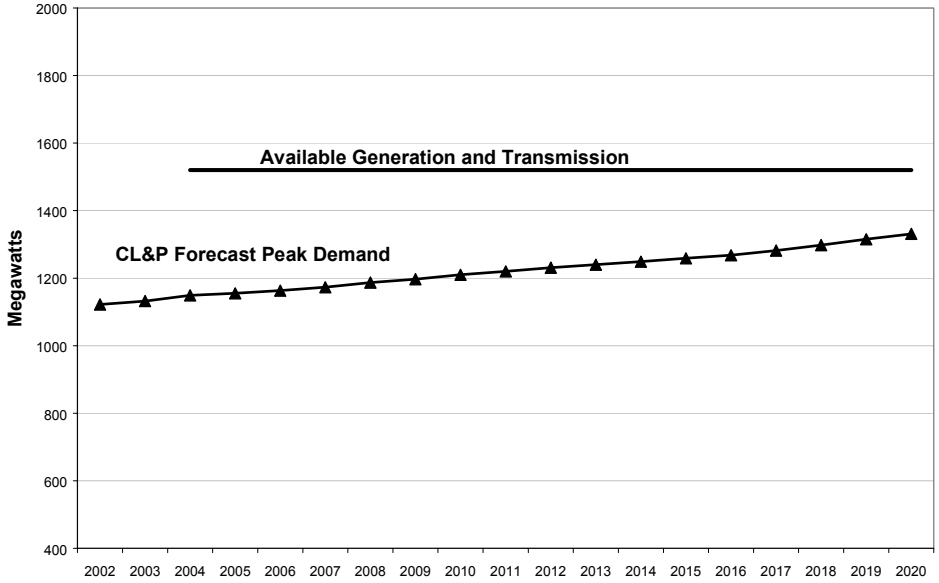
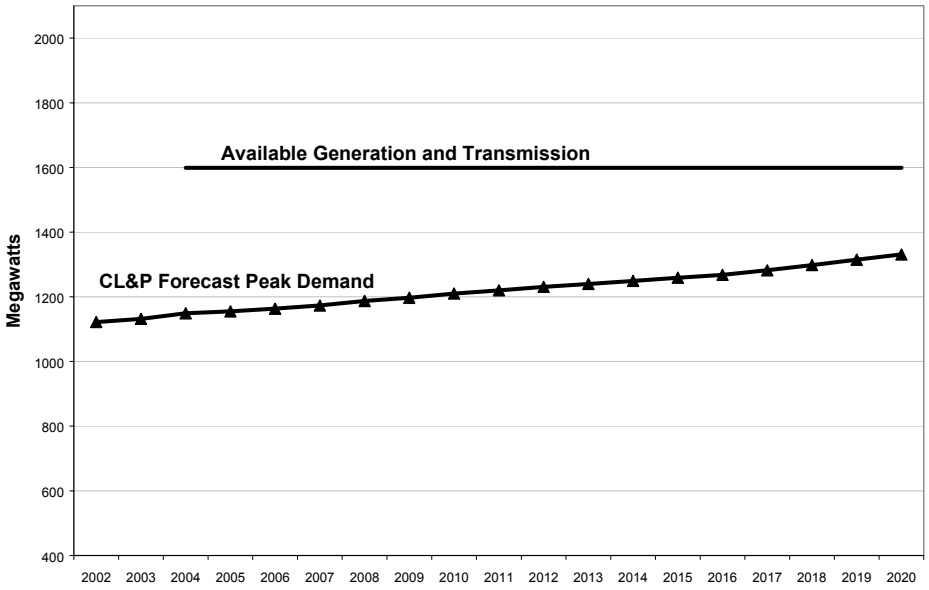


Figure SPL-3
Norwalk-Stamford Peak Demand
One Norwalk Unit and Largest Transmission Line Out of Service
2002 CL&P Base Case Forecast



Q. Please explain how you determine the amount of generation and transmission capacity that would be available in the Norwalk-Stamford area.

A. The Available Generation and Transmission lines shown on Figures SPL-1 through SPL-6 all reflect the approximately 460 MW of existing generating capacity within the Norwalk-Stamford area, the 1100 MW of transmission import capability from CL&P's five existing transmission lines into the area, and the additional 500 MW of transmission import capability that would be provided by two underground 115-kV transmission lines from Plumtree to Norwalk.[1]

Q. What is the basis for the CL&P Forecast Peak Demands shown on Figures SPL-1 to SPL-3?

A. The CL&P Peak Demand Forecasts shown on Figures SPL-1 to SPL-3 represent CL&P's 2002 Base Case projections and have been taken directly from

[1] The 1,100 MW assumed for the import capability of the existing transmission system is conservative. For example, it does not reflect the 200 MW capability that could be imported into Norwalk through the existing underwater transmission cable from Long Island.

Attachment C to CL&P's response to Interrogatory OCC-001. These projected peak demands reflect historic peak producing weather during the years 1970 to 2000. Such weather-normalized peak demands have traditionally been used in evaluating the need for new electric generation and transmission facilities. CL&P has said that these base case forecasts assume "that the average peak-producing weather will be the most likely occurrence."[2]

Q. Would there still be adequate transmission and generation capacity to serve loads in the Norwalk-Stamford area with your proposed two underground 115-kV transmission lines if future peaks demands are higher than CL&P forecast in its Base Case 2002 Forecast?

A. Yes. CL&P developed a more extreme set of peak demands for the years 2002-2020 to reflect the "extremely hot weather" that produced the actual peak load experienced in August 2001.[3] Figures SPL-4 through SPL-6 show that there would still be adequate levels of available generation and transmission in the Norwalk-Stamford area with our proposed two underground 115-kV transmission lines even assuming these more extreme CL&P peak demands.

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[2] CL&P's 2002 Forecast of Loads and Resources for 2002-2011, dated March 1, 2002, at page I-2.
[3] CL&P's 2002 Forecast of Loads and Resources for 2002-2011, dated March 1, 2002, at page I-2.

Figure SPL-4
Norwalk-Stamford Peak Demand
Norwalk Units 1 and 2 Out of Service
CL&P Extreme Forecast Based on Actual 2001 Peak Demand

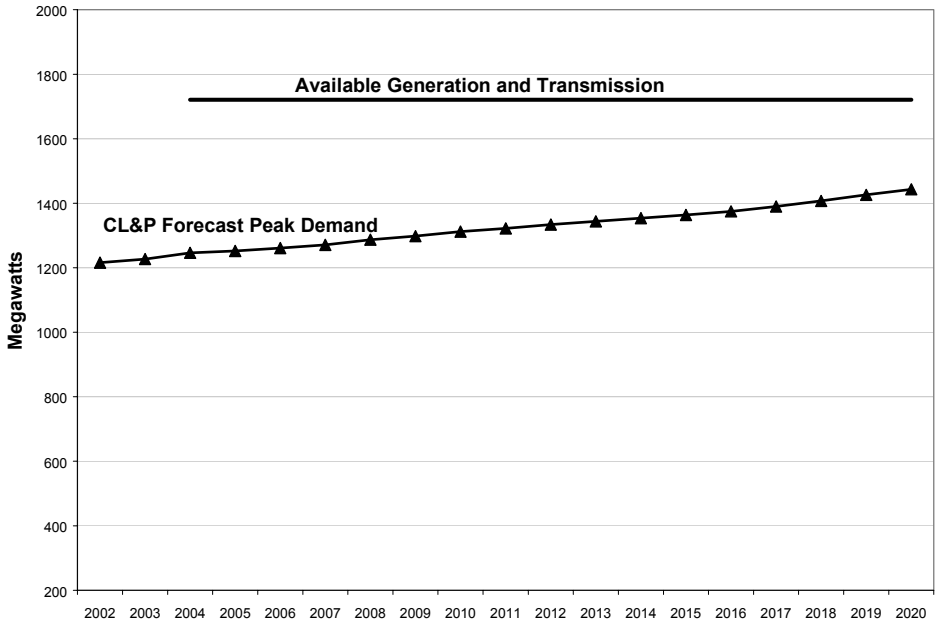


Figure SPL-5
Norwalk-Stamford Peak Demand
Two Largest Transmission Lines Out of Service
CL&P Extreme Forecast Based on Actual 2001 Peak Demand

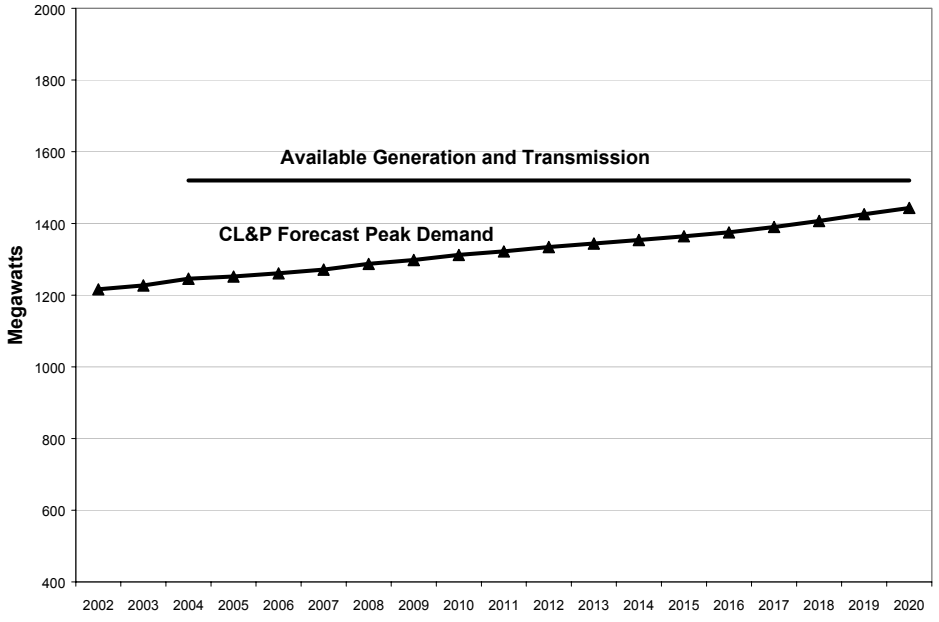
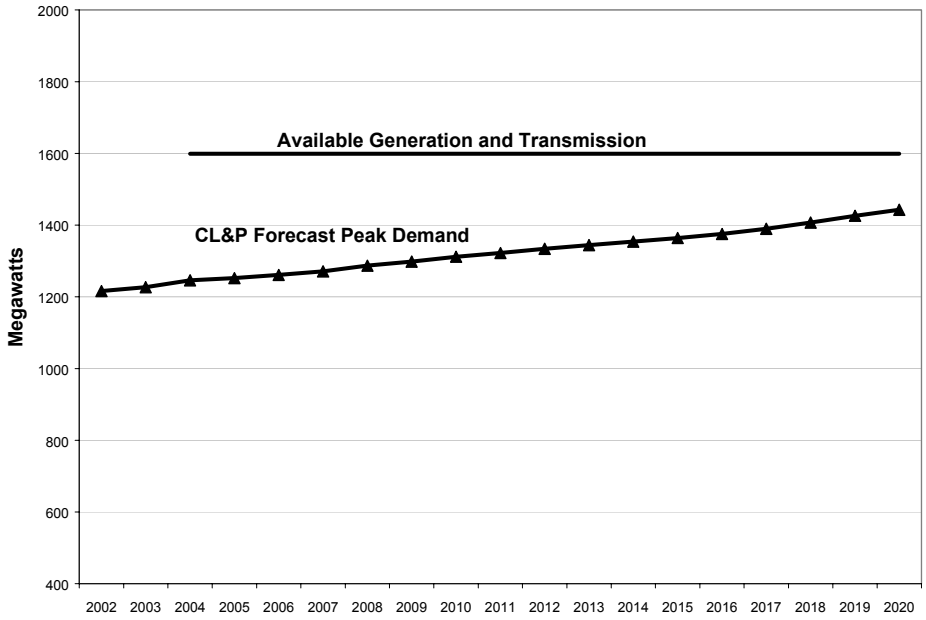


Figure SPL-6
Norwalk-Stamford Peak Demand
One Norwalk Unit and Largest Transmission Line Out of Service
CL&P Extreme Forecast Based on Actual 2001 Peak Demand



Q. Do Figures SPL-4 to SPL-6 reflect the same levels of available generation and transmission capacity as Figures SPL-1 to SPL-3?

A. Yes.

Q. What is the basis for the CL&P Forecast Peak Demands shown on Figures SPL-4 to SPL-6?

A. These more extreme CL&P Forecast Peak Demands were taken from Attachment C to CL&P's response to Interrogatory OCC-001. They reflect CL&P's recently submitted "2002 Forecast of Loads and Resources for 2002-2011."

Q. Do the analyses presented in Figures SPL-1 through SPL-6 reflect the additional power that could be imported into the Norwalk-Stamford area if the existing Peaceable to Norwalk line were reconductored?

A. No. To be conservative we have excluded the additional one hundred or so megawatts of additional power that could be imported into the Norwalk-Stamford area if the existing Peaceable-Norwalk 115-kV transmission line is reconductored.

Q. Do the analyses presented in Figures SPL-1 through SPL-6 reflect the potential for reducing peak loads in the Norwalk-Stamford area below those currently forecast by CL&P?

A. No. To be conservative we have not reflected any of the reductions in peak loads that could result from customers' participation in load response programs, the use of distributed generation facilities or more aggressive demand side management efforts.

Q. What is load response?

A. Retail customer response to wholesale electricity prices or other market incentives can serve several important system-wide functions. For example, retail customers can ease tight capacity situations and mitigate reliability concerns by reducing consumption. By reducing consumption in response to price signals or other financial incentives, retail customers also can reduce peak wholesale electricity prices, mitigate price volatility, and reduce opportunities for market manipulation. It is not necessary for all customers to participate in these emergency or economic load response programs; even the response of a small percentage of customers can produce significant benefits for all customers.

In order to participate in load response programs, customers need tools to assist in reducing their usage at appropriate times. The two main categories of tools are communications devices and mechanisms for modifying their usage of grid electricity during peak hours and conditions. Customers have two basic mechanisms for reducing their demand on the local electricity grid. They can simply reduce their electricity at key times through load management or energy efficiency, or they can shift their source of electricity from the grid to on-site generation, thereby reducing their use of grid electricity but not their overall use of electricity.

Emergency load response can be implemented with readily available technology. For example, load response software can be installed in a building (e.g., an industrial facility, an office building, or commercial establishment, or even a home) that would connect to the outside world (signals sent by the Independent

System Operator) with building control systems (e.g., thermostats, light dimmers). The building owner or operator could choose to respond to the signal or not. With currently available software, building operators could be notified through e-mail, cellular phone, and alpha-numeric paging of an expected reliability threat and could respond as simply as pressing a "yes" or "no" button included with the system. An affirmative answer would trigger predetermined changes to building systems (e.g., the lights could dim twenty percent, the AC thermostat could rise two degrees) for a set time.

Emergency load response to serve a reliability function is not new. For years electric utilities and system operators have offered special rates to customers who were willing to curtail their load upon request from the utility or system operator to avert short-term reliability problems. On hot days when demand threatens to overwhelm the available capacity on the system, customers willing and able to lower the amount of electricity they draw from the grid offer a resource that can be tapped to delay or avoid the need for more drastic measures, including rolling brown-outs or rolling black-outs.

Customers participating in load response programs don't just avoid costs associated with consuming at high prices at peak periods; they can receive payments from "selling" the power they don't use at market prices. In simple terms, the electricity that the customer decides not to use at peak times can be sold back into the energy market at peak prices.

Q. Is ISO New England developing a load response program in Southwest Connecticut and the Norwalk-Stamford area?

A. Yes. ISO New England has two programs to provide incentives for encouraging reductions in electricity demands during peak power periods: a Demand Response Program which compensates users for reducing load at ISO-NE's direction and a Price Response Program to compensate users for monitoring and controlling their consumption in response to real-time market prices.

In particular, ISO-NE is implementing a special program to provide up to 80 MW of load relief in Southwest Connecticut for the June-September 2002-2004

periods "to mitigate potential reliability problems."[4] We believe that such a program could be implemented on a longer-term basis as well.

Q. Is ISO New England also considering other incentives to encourage consumers to reduce their loads during times of transmission congestion, peak demands or high prices?

A. Yes. ISO New England is developing a Standard Market Design which, among other things, will allow customers to specify the price they are willing to pay for electricity on a day-ahead basis. This new system will enable customers to specify a maximum price at which they are willing to consume energy and to avoid higher prices, should they occur, by reducing their energy consumption in the expensive hours. There also may be opportunities in the Standard Market Design for customers to agree to not consume energy at a specific price level and, in effect, to "sell" their unconsumed energy into the market at that specified price. Efforts such as this could reduce peak loads and congestion costs in Southwest Connecticut and the Norwalk-Stamford areas.

Q. When will the Standard Market Design be implemented?

A. ISO-NE's most recent estimate is that the Standard Market Design will be implemented in early 2003. ISO New England has committed to FERC that it will be implemented no later than June 2003.

Q. Have you assumed any benefits from Standard Market Design in your analyses?

A. No.

Q. What are distributed generating facilities?

A. Distributed generating ("DG") facilities are simply on-site generators. The term usually refers to small units, under a few MW in size, rather than larger power plants and cogeneration units at industrial customers' sites. Many large customers

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[4] *SWCT Emergency Load Response Program*, presented to NEPOOL's Reliability Committee on February 5, 2002.

have small generators that have typically been used for emergency back-up generation purposes; however, system operators, customers and their suppliers are realizing that on-site generation can provide an important alternative in some hours to purchasing electricity from the grid.

Several generating technologies are competing to serve customers interested in DG. Photovoltaic arrays, wind turbines, fuel cells, biomass, micro turbines, and internal combustion engines fueled by natural gas or diesel fuel are all either available today or are expected to be available in the next year or two. These technologies can vary in size, use, and efficiency, and can be used to meet a portion or all of a customer's load during selected hours or even most of the time.

The use of these distributed generating units, sited at end-use locations, can provide significant benefits by improving electric system reliability, reducing line losses (because the generator is close to the load), and eliminating or at least deferring the need for expensive transmission and central generating station additions. In addition, this distributed generation could provide air-quality benefits, if developed with care. Photovoltaic arrays and wind turbines have no air emissions. Fuel cells emit CO_2 at rates well below the average for electric generation facilities and have even lower emission rates for other pollutants. DG represents a growing capacity resource for system planners and can be expected to support system reliability as their numbers grow.

Q. What evidence leads you to believe that future peak demands in Southwest Connecticut and the Norwalk-Stamford area could be lowered by the implementation of more aggressive demand side management programs?

A. Aggressive conservation efforts in California led to a more than twelve percent reduction in peak electric loads between June 2000 and June 2001.[5] These conservation efforts include a public education campaign, voluntary commitments by companies to cut electricity usage by twenty percent, financial incentives to make saving electricity less expensive than using it, strengthened state efficiency

[5] Weather adjusted peak loads decreased by 9.1 percent between June 2000 and June 2001.

standards, and programs funded through the systems benefits charges collected by the state's utilities.[6]

The revised efficiency standards also are expected to result in ten to fifteen percent energy savings in all of California's new residential and commercial buildings. The revised standards will result in installation of energy efficient windows, high efficiency central air conditioners and leak-resistant duct systems in residential buildings. Commercial buildings will have improved glazing (to reflect sunlight and reduce air conditioning loads) and more efficient lighting and ventilation systems.[7]

Q. If there were reductions in future peak demands as a result of load response, Standard Market Design, distributed generation, or more aggressive demand side management programs, how would those reductions affect the analyses presented in Figures SPL-1 to SPL-6?

A. The CL&P Forecast Peak Demand lines would be less steep and there would be more of a reserve between the Available Generation & Transmission capacity and forecast peak demands. Moreover, the need for any additional transmission import capability (beyond the two underground 115-kV lines into the Norwalk-Stamford area) would be deferred further into the future.

Q. Do the Available Generation and Transmission lines in Figures SPL-1 through SPL-6 reflect the construction of any new generating facilities in the Norwalk-Stamford area?

A. No. To be conservative we have not assumed the construction of any new baseload, intermediate or peaking facilities or the potential repowering of the Norwalk Harbor Station. The presence of any such new or repowered facility would enhance the reliability of the transmission system in the Southwest Connecticut and Norwalk-Stamford areas.

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[6] *Energy Efficiency Leadership in a Crisis*, *How California is Winning*, a report by the Silicon Valley Manufacturing Group and the Natural Resources Defense Council, August 2001, at page 1. This report is available at www.NRDC.org.

[7] Ibid, at pages 7 and 8.

Q. How would the analyses presented in Figures SPL-1 to SPL-6 be affected if new or repowered generating facilities were constructed in the Norwalk-Stamford area?

A. The construction of new or repowered generating capacity would raise the Available Generation and Transmission lines on Figures SPL-1 to SPL-6 which would create more of a reserve between the Available Generation & Transmission capacity and the forecast peak demands. Consequently, the need for any additional transmission import capability (beyond the two underground 115-kV lines into the Norwalk-Stamford area) would be deferred further into the future.

Q. Please describe the two 115-kV transmission lines that you are proposing as an alternative to CL&P's proposed 345-kV transmission line.

A. The two underground lines would run from Plumtree to Norwalk in a single trench along the alternative underground route discussed by CL&P in its Application or as modified by the Siting Council. The two lines would use solid dielectric cable.

Our analyses have conservatively assumed that each of these proposed 115-kV cables would have a normal rating of 250 MW and a long-term emergency rating of 310 MW.

Q. Is solid dielectric cable an accepted and proven technology for use in underground 115-kV transmission lines?

A. Yes. Even CL&P has acknowledged that the reliability of solid dielectric cable at the 115-kV level is "well established."[8] In addition, the May 2001 study for the Siting Council, "Update of Life Cycle Cost Studies for Overhead and Underground Electric Transmission Lines," has concluded that improvements in testing and quality controls during manufacture have significantly decreased the risk of dielectric cable failures. As a result, this study concluded that solid

[8] CL&P Application, at page 4.

dielectric cables are "being accepted as proven technology for applications up to and including 230-kV."

Q. Does CL&P currently have any underground 115-kV transmission lines on its system which use solid dielectric cable?

A. Yes. CL&P has had an 8.3 mile underground 115-kV line with solid dielectric cable on its system in Sterling, Connecticut since 1991.[9]

Q. Would there by any technical problems installing two underground 115-kV lines from Plumtree to Norwalk?

A. No. The placement of two underground transmission lines in the same trench is an accepted industry practice.

The arrangement of the two underground 115-kV could be virtually identical to the arrangement that CL&P has proposed for its 345-kV underground alternative as described at page 26 of its Application and illustrated in Figure 13 of the Application.

Q. How much additional power would CL&P's proposed 345-kV transmission line import into the Norwalk-Stamford area?

A. CL&P's proposed 345-kV line would carry perhaps as much as 2,000 MW of power into the Norwalk-Stamford area.[10] This would be far more power than would be needed in the Norwalk-Stamford area at any time in the next sixty or more years, even under CL&P's extreme peak load forecasts.

Q. Why do you believe that CL&P is seeking to build such an oversized transmission line into Norwalk?

A. Based on internal Northeast Utilities documents and the Company's July 13, 2001 filing with the Federal Energy Regulatory Commission it is clear that the reason why NU is seeking to overbuild the Plumtree to Norwalk line is its desire to

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[9] CL&P Response to Interrogatory Towns 01-026.

[10] CL&P Application, at page 13, and CL&P's Response to Interrogatory CFRE-038, Attachment, page 2.

transmit large amounts of electricity to Long Island and New York City through its existing under-Sound transmission line and a proposed 330 MW DC transmission line. The additional capacity provided by the proposed 345-kV line would enable CL&P to transmit power for sale in the lucrative Long Island and New York City markets.

Q. Has CL&P studied the amount by which its proposed 345-kV transmission line would increase its capability to import power into the Norwalk-Stamford area?

A. No. CL&P has said that Stage 2 of the Southwestern Connecticut Reliability Study will examine the increase in transfer capability to the Southwest Connecticut area and the Norwalk-Stamford area that would be provided by the proposed 345-kV transmission line.[11]

Q. Has CL&P nevertheless estimated the amount by which its proposed 345-kV transmission line would increase its capability to import power into the Norwalk-Stamford area?

A. CL&P has said that it anticipates that the Plumtree-Norwalk 345-kV transmission line would increase the Norwalk-Stamford transfer capability on the order of 200 MW.[12]

Q. Should the Siting Council be concerned that NRG will retire the Norwalk Harbor generating units in the near future?

A. No. The New England market rules and procedures prevent a generating unit owner from retiring a unit if such retirement would jeopardize the reliability of the electric system. A proposal to retire a generating unit must be reviewed and approved by ISO New England and the members of the New England Power Pool. In fact, in a letter to Connecticut DPUC Chairman Downes, ISO-NE's general counsel explained that:

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[11] CL&P's Response to Interrogatory OCC-009.
[12] CL&P's Response to Interrogatory OCC-009.

> The NEPOOL Agreement stipulates that owners of any bulk power facility in New England (generating stations, transmission lines, substations, etc.) must obtain ISO-NE and NEPOOL permission (through the [NEPOOL Agreement Section] 18.4 Process) to make any change in the facility's capability, characteristics or status. ISO-NE and NEPOOL can reject the proposed change if it has significant adverse impacts on the secure and reliable operation of the bulk electric power system. The NEPOOL Reliability Committee reviews 18.4 Applications and determines if proposals are technically acceptable. The NEPOOL Participants Committee (NPC) grants final approval. If the NPC does not approve such a request (due to reliability issues), then it must develop some form of compensation to keep the unit in-service. [13]

This is one of the provisions of the electricity markets and systems operating in New England that is designed to ensure that necessary facilities, like the Norwalk Harbor Station, will be available to support system reliability and that facility owners will be compensated. The compensation and parameters of unit operation would be determined through a negotiation process between the unit owner and NEPOOL. Consequently, there is no danger that NRG will unilaterally decide to retire the Norwalk Harbor Station if doing so would cause blackouts or other serious system reliability problems.

Q. Does CL&P believe that NRG could shut down any of its generating facilities in Southwest Connecticut without approval by ISO New England?

A. No. We specifically asked CL&P whether it believed that NRG is authorized to shut down any of its generating facilities in Southwestern Connecticut without approval by ISO New England. CL&P's answer was no. [14]

Q. Does NRG have an economic incentive to continue to operate its Norwalk Harbor Station?

A. Yes. Both NU and ISO New England have talked about the need to increase the capability to import power into Southwest Connecticut and the Norwalk-Stamford area in order to reduce transmission congestion costs. Such costs are paid to

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[13] May 7, 2001 letter to Donald W. Downes, Chairman, CT DPUC, from Kathleen A. Carrigan, Vice President, General Counsel & Secretary, ISO-NE, a copy of which is attached as Exhibit SPL-4.

generators, including NRG, when facilities that would otherwise not be operated must be run because of transmission constraints. NRG will continue to receive such payments as long as these transmission constraints exist and, consequently, will have a significant incentive to continue to operate the Norwalk Harbor Station.

Q. Would the addition of two underground 115-kV transmission lines from Plumtree to Norwalk provide customers in the Norwalk-Stamford area greater access to competitively priced generation?

A. Yes. The additional 500 MW of import capacity provided by the 115-kV underground transmission lines would significantly reduce transmission congestion costs and increase the ability of customers in the Norwalk-Stamford area to access power from lower cost generating facilities being built in Southwest Connecticut and the rest of New England.

Q. Would the addition of two underground 115-kV transmission lines from Plumtree to Norwalk improve the reliability and stability of the transmission system in Southwest Connecticut?

A. Yes. As we will discuss later in this testimony, the addition of two underground 115-kV transmission lines from the Plumtree to Norwalk substations would provide substantial reinforcement to the transmission system in Southwest Connecticut. However, neither the installation of CL&P's proposed 345-kV line or two underground 115-kV lines from Plumtree to Norwalk would on their own address all of the stability and reliability problems in Southwest Connecticut. Other system reinforcements will be needed.

For example, the only load flow analysis presented by CL&P which examined only the Company's proposed 345-kV line showed that in certain contingency scenarios some existing transmission lines in Southwest Connecticut would be loaded at more than their long-term emergency ratings even if the proposed line were built.

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[14] Interrogatory Towns 01-048.

Q. Does CL&P's proposal raise reliability concerns?

A. Yes. If built, the proposed 345-kV line would be carried on the same towers as the reconstructed 115-kV line. CL&P has admitted that having two lines on common structures will be a reliability concern unless the second phase of the project is completed.[15]

In fact, as CL&P has acknowledged:

> The most critical and problematic contingencies are the loss of two transmission lines which share common structures or are within a common corridor. Unplanned outages of two of these lines can occur due to a shield wire failure, tower failure or lightning.[16]

However, the addition of two underground 115-kV lines by a different route from the existing 115-kV line from Plumtree to Norwalk would enhance system reliability by eliminating the possibility of such common cause failures.

Q. Please summarize your conclusion on the question of whether there is a public need to construct CL&P's proposed 345-kV transmission line.

A. There is no public need for the line. The addition of two underground 115-kV lines from Plumtree to Norwalk substations would import enough power into the Norwalk-Stamford area to satisfy future customer demands through at least the year 2020 even if extreme summer weather is assumed. The addition of these two 115-kV lines also would reduce reliance on local generation within the area and lower congestion costs. CL&P's proposed 345-kV transmission line would import far more power into the Norwalk-Stamford area than would be needed at any time over the next sixty years even under extremely hot summer weather conditions.

Q. Have you reviewed the Southwestern Connecticut Reliability Study recently issued by ISO New England?

A. Yes. We have reviewed the January 2002 Interim Report of the Southwestern Connecticut Reliability Study Group.

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[15] CL&P Response to Interrogatory CSC-043.
[16] CL&P October 15, 2001 Application , at page 38.

Q. Is NU relying on the same loop studies that the Southwestern Connecticut Reliability Study Group examined in this report?

A. Yes. It is clear from CL&P and ISO New England's responses to interrogatories from the Towns and the Attorney General that NU is relying on the very same set of 345-kV, 230-kV and 115-kV loop studies that are discussed in the January 2002 Southwestern Connecticut Reliability Study Interim Report.[17]

In fact, it is clear that NU and ISO New England jointly performed these studies as two of the six members of the Southwestern Connecticut Reliability Study Group were NU employees and another was a consultant to NU.

Q. Do these studies by NU and ISO New England actually show that there is a public need for CL&P's proposed 345-kV transmission line from Plumtree to Norwalk and that nothing less than a 345-kV line will be adequate?

A. No. The NU and ISO analyses are seriously flawed in a number of ways which make them extremely biased in favor of NU's preferred 345-kV alternative and against the 115-kV and 230-kV options examined.

1. As we discussed earlier, NU and ISO-NE examined the addition of a 345-kV loop in their studies that included a number of transmission projects beyond the single 345-kV line for which CL&P currently is seeking a Certificate. In fact, many of the benefits claimed by CL&P for the 345-kV Plumtree to Norwalk transmission line actually are dependent upon the completion of other transmission system upgrades.

2. The power carrying capabilities of the 115-kV alternatives studied by NU and ISO-NE were unfairly and significantly hampered by the failure to include any new transmission lines from Plumtree to Norwalk substations. The absence of any such lines resulted in additional stresses on the transmission systems in Southwest Connecticut in the NU and ISO-NE studies and biased the results in favor of NU's preferred 345-kV loop plan.

3. The NU and ISO studies used peak loads for the year 2006 for the State of Connecticut, Southwest Connecticut, and the Norwalk-Stamford area that are significantly higher than CL&P and the Siting Council have projected. These extreme peak loads put unreasonable stresses on the transmission system and, again, bias the results in favor of the Company's preferred 345-kV loop.

4. The NU and ISO studies examined a series of generating dispatch scenarios. All of these scenarios assumed that a number of existing power plants in Southwest Connecticut would not generate any electricity even at the time of the system peak demands. This is an unrealistic assumption that places unreasonable stresses on the transmission system in Southwest Connecticut.[18]

5. At the same time, NU and ISO only examined the 115-kV loop alternative in a generator dispatch scenario that assumed that only 869 MW of generating capacity would be operating in Southwest Connecticut at the time of the system peak. This unrealistic assumption unfairly stressed the 115-kV loop alternative. By contrast, when NU and ISO examined the 345-kV alternative they also looked at dispatch scenarios in which 2,464 MW and 2,791 MW of generating capacity would be operating in Southwest Connecticut at the time of the system peak.

6. Finally, the 345-kV loop alternative was examined in a series of studies that assumed that the existing Norwalk-Long Island underwater transmission cable would either carry 200 MW from Connecticut to Long Island, from Long Island to Connecticut or would not carry any power at all. The 115-kV loop alternative, however, was only examined in the scenarios in which this transmission either exported 200 MW of power to

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[17] For example, see CL&P's Responses to Interrogatories AG-009SP01and AG-040 and ISO New England's Response to Interrogatory Towns Set Two, Question No. 1.

[18] NU and ISO New England assumed that the following units would not generate any power in any of the scenarios they examined: Cos Cob 10, 11, 12; Norwalk Harbor Jet; Bridgeport Harbor 2 &

Long Island (thereby creating additional demand on the transmission system in Southwest Connecticut) or did not carry any power at all. NU and ISO did not examine any scenario for the 115-kV loop in which the Norwalk to Long Island line would import additional power into Connecticut.

Q. Have you identified any flawed assumptions made by NU and ISO New England in the design of the 115-kV transmission loop that appear to disadvantage that alternative as compared to NU's proposed 345-kV loop?

A. Yes. It appears that in their load flow studies of possible 115-kV alternatives NU and ISO-NE did not add any new transmission lines from the Plumtree to Norwalk substations.[19] Instead, NU and ISO-NE only reconductored the existing Peaceable to Norwalk section of the existing line.[20] Consequently, it is not surprising that the 115-kV alternatives found that there were "heavy power flows east to west on the 115-kV system" even with the addition of a phase shifter at Plumtree on the 115-kV system.[21]

Q. What is the basis for your conclusion that the peak loads assumed in the NU and ISO New England studies are based on "extreme" conditions?

A. Table SPL-1 compares the peak loads for the year 2006 used in the NU and ISO New England loop studies with CL&P's recently filed 2002 forecasts and the

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4; Devon 11-14; South Meadow Jets; Haddam. ISO New England Response to Interrogatory Towns 02-11(c).

19 *January 2002 Interim Report of the Southwestern Connecticut Reliability Study,* at Volume I, pages 36 and 37 and ISO New England's Response to Interrogatory Towns 02-11(b).

20 ISO New England does list the installation of a new 115-kV transmission line from Plumtree to Norwalk as one of its "possible solutions tested." ISO New England's Response to Interrogatory Towns 01-14. However, the final 115-kV alternative loop load flow studies provided by ISO New England and NU, i.e., those studies on which NU is relying, did not include such a line. Nor were any other documents or analyses provided concerning ISO New England's "testing" of this alternative or of a number of the other alternatives that ISO New England has said that it tested.

21 *January 2002 Interim Report of the Southwestern Connecticut Reliability Study,* at Volume I, page 37.

Siting Council's November 2001 Twenty Year Forecast of Loads and Resources.[22]

Table SPL-1
2006 Peak Load Forecasts

Area	NU and ISO-NE Loop Studies	CL&P Base Case Forecast	CL&P Forecast Based on Actual 2001 Peak Producing Weather	Siting Council's 2001 Twenty Year Forecast
Connecticut	7,410 MW			6,550 MW
SW Connecticut	3,747 MW	3,227 MW	3,497 MW	
Norwalk-Stamford	1,298 MW	1,163 MW	1,261 MW	

As we noted earlier, CL&P has prepared two forecasts. The Base Case Forecast is based on average historic peak producing weather (1970-2000). The other CL&P forecast is based on the actual 2001 peak day weather.

It is clear from Table SPL-1 that the peak loads assumed in the NU and ISO New England loop studies are significantly higher than the loads projected by CL&P and accepted by the Siting Council. In fact,

- Under CL&P's 2002 Base Case forecast, the Norwalk-Stamford area will not reach the 1,298 MW peak load used in NU and ISO New England studies until the year 2018 and Southwest Connecticut will not reach the 3,747 MW peak load used in the NU and ISO New England studies before the year 2020.
- Under CL&P's more extreme forecast based on the actual 2001 peak day weather, the Norwalk-Stamford area will not reach the 1,298 MW peak load used in the NU and ISO New England studies until the year 2009 and Southwest Connecticut will not reach the 3,747 MW peak load used in the NU and ISO New England studies before the year 2013.
- Under the forecasts accepted by the Siting Council in its November 2001 Twenty Year Forecast, the State of Connecticut will not reach the 7,410 MW used in the NU and ISO New England studies until nearly the year 2020.

[22] CL&P's Responses to Interrogatories Towns 03-02 and Towns 03-03 and ISO New England's Response to Interrogatory Towns 02-11.

Q. Are the peak loads that NU and ISO New England used in their loop studies even consistent with the loads presented in ISO New England's January 2002 Southwestern Connecticut Reliability Study Interim Report?

A. No. The peak loads for Southwest Connecticut and Connecticut shown on page 12 of the Interim Report are significantly lower than the peak loads that NU and ISO New England actually used in their loop studies.

Q. What is the impact of the use of these significantly higher peak demands in the NU and ISO New England studies?

A. The use of these significantly higher peak loads in the Norwalk-Stamford and Southwest Connecticut areas and the remainder of the State of Connecticut put unrealistic pressure on the transmission system and lead to unreasonable results.

Q. Do you understand why NU and ISO New England have used such high peak demands in their transmission loop studies?

A. It appears that the methodology used to allocate the total assumed New England peak load among the various sub-regions leads NU and ISO New England to allocate too large a percentage of the overall assumed load to the Norwalk-Stamford area, Southwest Connecticut and the State of Connecticut.

Q. Did NU and ISO New England originally plan to rely only on such extreme peak load forecasts?

A. No. It is clear from the documents related to the initiation of the loop studies that the original plan was to assume a 2006 New England load of 25,800 MW based on NEPOOL's Forecast Report of Capacity, Energy, Load and Transmission 2001-2010 (April 2001) ("CELT").[23] However, some "extreme cases" also were to be modeled since the actual 2001 summer peak was 6.3 percent above the 2001 CELT forecast.

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[23] *Scope of Work, Southwestern Connecticut Reliability Study, Draft (Revision 5)*, page 4, a copy of which was provided in CL&P's response to Interrogatory AG047.

Unfortunately, the Southwestern Connecticut Reliability Study Group apparently did not use the base case forecast at all in its transmission loop studies and instead relied solely on the "extreme" forecasts.

Q. Are the peak loads used in the NU and ISO New England studies consistent with information that ISO New England has recently provided to the Connecticut Legislature?

A. No. The peak loads for the year 2006 used in the NU and ISO New England studies for the Norwalk-Stamford area and the entire State of Connecticut are dramatically higher than information that ISO New England recently has provided to the Connecticut Legislature and contained in a presentation at a recent FERC Northeast Energy Infrastructure Conference by Stephen G. Whitley, ISO New England's Sr. Vice President and Chief Operating Officer.[24]

For example, ISO New England told the Connecticut Legislature in February 2002 that the peak demand in the Norwalk-Stamford area would be 1,150 MW in the summer of 2006. This was nearly 150 MW below the 1,298 MW peak demand used in the NU and ISO-NE transmission studies.[25]

Q. Do NU and ISO New England apply a realistic and consistent set of assumptions in each of their 345-kV, 230-kV, and 115-kV loop studies concerning the power that would be produced at the time of system peak demands by the generating units in the Norwalk-Stamford and Southwest Connecticut areas?

A. No. NU and ISO New England examined the 345-kV and 230-kV loops under four different dispatch scenarios in which between 702 MW and 2791 MW of

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[24] *Electricity Infrastructure in Connecticut, Information for the Connecticut General Assembly*, February 2002*, provided by ISO New England* and *Electricity Infrastructure in New England*, *Presentation to FERC's Northeast Energy Infrastructure Conference by Stephen G. Whitley,* January 2002. These documents were provided in ISO New England's Response to Interrogatory Towns 01-11.

[25] *Electricity Infrastructure in Connecticut, Information for the Connecticut General Assembly*, February 2002*, provided by ISO New England*, at page 7. This document was provided in ISO New England's Response to Interrogatory Towns 01-11.

generation would produce power within Southwest Connecticut at the time the peak demand is experienced.[26] However, the 115-kV loop was only examined in the one scenario is which only 869 MW would be dispatched from plants within Norwalk-Stamford and Southwest Connecticut at the time of system peak.[27]

In fact, this dispatch scenario makes the unreasonable assumptions not only that the new Bridgeport Energy plant would not be dispatched at the time of system peak but that there would be no generation at the new Wallingford generating facility and only 280 MW of generation at the new Milford Units in Southwest Connecticut.[28] This dispatch scenario also assumes that there would be no generation at Norwalk Harbor Units 1 or 2 even though all of these other plants in Southwest Connecticut also were not operating. This dispatch scenario clearly starves the electric grid in Southwest Connecticut of generation and, consequently, places unreasonable stresses on the transmission lines.

Q. Do NU and ISO New England apply a realistic and consistent set of assumptions in each of their 345-kV, 230-kV, and 115-kV loop studies concerning the power that could be imported into Norwalk from Long Island at the time of system peak demands?

A. No. NU and ISO New England examined the 345-kV and 230-kV loops under scenarios in which the underwater transmission line from Norwalk to Long Island either exported 200 MW of power to Long Island or imported 200 MW of power into Connecticut from Long Island. However, the 115-kV loop was examined in two scenarios in which the line from Norwalk to Long Island either exported 200 MW of power from Connecticut to Long Island or did not carry any power to or from Long Island.[29] Thus the 115-kV was not examined in a scenario in which 200 MW of power was imported into Connecticut from Long Island over the existing Norwalk to Long Island cable. This further starved the electric grid of

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[26] *Southwestern Connecticut Reliability Study, Interim Report, January 2002, Volume I,* at page 20.
[27] *Southwestern Connecticut Reliability Study, Interim Report, January 2002, Volume I,* at page 37.
[28] *Southwestern Connecticut Reliability Study, Interim Report, January 2002, Volume I,* at page 20.

[29] *Southwestern Connecticut Reliability Study, Interim Report, January 2002, Volume I,* at page 37.

power and placed the 115-kV at an additional disadvantage compared to NU's proposed 345-kV loop.

Q. Please summarize your conclusions concerning the loop studies which NU and ISO New England seek to use to justify construction of the proposed Plumtree to Norwalk 345-kV transmission line.

A. The transmission loop studies prepared by NU and ISO-NE are significantly flawed and biased in favor of NU's preferred 345-kV loop.

Q. Have you performed any analyses to evaluate the effects that the addition of two underground 115-kV lines would have on the transmission system in Southwest Connecticut?

A. Yes. We have reviewed and tested the transmission load flow studies provided by CL&P and ISO New England that examined various base case and 345-kV and 115-kV transmission system enhancement scenarios.[30] In particular, we studied the effects of installing two new underground 115-kV transmission lines from Plumtree to Norwalk on the existing system and on the 115-kV loop studies provided by NU and ISO New England. We used the Power Technologies Inc. ("PTI") PSS/E-28 transmission load flow computer model to perform these reviews and analyses.

We examined the capacity of the transmission system to deliver needed power and to support system voltage levels under normal conditions and under key contingency conditions, checking for overloads on transmission lines in SW CT. We also investigated the system losses experienced under the 345-kV and 115-kV alternatives.

We compared the base case scenario prepared by NU and ISO New England, which had no improvements in the Southwest Connecticut transmission system, with the alternatives of 1) the 345-kV Plumtree-to-Norwalk line proposed by

CL&P or 2) the Towns' two proposed 115-kV lines. We checked for transmission line overloads with all lines in service and with certain transmission lines deemed to be out of service due to contingencies. We applied the six contingencies listed in Table 1 on page 38 of CL&P's Application to each of these load flow scenarios. We also applied a seventh contingency to the 345-kV case that reflected a transmission tower outage that takes out both the proposed 345-kV line and the 115-kV line that is to share its towers. All of the cases that we examined assumed that there would be no generation at the existing Norwalk Harbor units and that there would be varying amounts of power exported over the Norwalk to Long Island underwater cable.

Q. What were the results of your reviews and load flow analyses?

A. Our reviews and load flow analyses led to the following conclusions:

1. There is a need for reinforcement of the transmission system in Southwest Connecticut, especially if it is assumed i) that there will be no available generation at Norwalk Harbor, and ii) that the transmission system should have the capacity, even with outages of critical facilities at the time of the annual peak demand, to supply several hundred megawatts of power to New York, via the underwater cable system out of Norwalk. If this is not the case, then there is less of a need for system reinforcement.

2. The 345-kV line proposed by CL&P would address many of the transmission line overloads that could occur if the system is not reinforced. However, a number of lines would continue to be overloaded even if CL&P's proposed 345-kV line were constructed. In addition, the installation of the proposed 345-kV line would lead to other line overloads, especially on transmission lines leading out of Norwalk.

3. The two 115-kV lines proposed by the Towns would provide substantial reinforcement to the transmission system in Southwest Connecticut and

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[30] The load flow studies we reviewed and tested were provided by CL&P in its responses to Interrogatories AG-009 and AG-009SP01 and by ISO New England in its response to

relieve many of the projected overloads on the existing transmission system in scenarios with all lines in service and with selected contingencies. Under normal conditions and under most of the selected contingencies we examined, the 115-kV alternative performed as least as effectively as the 345-kV proposal in relieving transmission line overloads.

4. The two 115-kV lines proposed by the Towns have reliability advantages over the 345-kV line proposed by CL&P. These advantages are reflected in several ways.

First, the proposed 345-kV line will be on the same transmission towers as the existing 115-kV line from Plumtree to Peaceable to Norwalk. A single contingency event could force both of these overhead circuits out of service at the same time. The Town's two proposed 115-kV underground lines would be much less susceptible to being forced out of service as a result of a single contingency event. These lines also would provide an alternate path to carry power in case the existing Plumtree to Norwalk line was forced out of service.

Second, a 345-kV line typically carries so much more power than a 115-kV line that the reliability impact of an outage of a 345-kV line is much larger than the reliability impact of a 115-kV line outage. When a 345-kV line goes out, especially one such as proposed by CL&P with approximately 2000 MVA of capacity, it is very difficult, if not impossible, for the 115-kV system to pick up that amount of load without significant overloading.

5. Both the 345-kV line proposed by CL&P and the Towns' proposed alternative of two 115-kV lines reduce system losses in the CL&P and UI zones. CL&P's 345-kV alternative reduces loses by about 33 MW, while the Towns' 115-kV alternative reduces system losses by 21 to 22 MW.

Interrogatory Towns 01-15.

Q. Have you seen any evidence that suggests that your load flow analyses actually may understate the benefits that would be obtained by installing the two underground 115-kV lines from Plumtree to Norwalk substations?

A. Yes. We based our load flow analyses on the studies performed by NU and ISO New England. As we discussed earlier, the NU and ISO New England 115-kV loop studies assumed overly high peak demands and reflected unrealistically low levels of generation at power plants within Southwest Connecticut and the Norwalk-Stamford area. It is reasonable to expect that the installation of the Towns' proposed two 115-kV lines would produce even greater improvements in system reliability if these load flow studies had reflected more reasonable peak demands and levels of generation at power plants in Southwest Connecticut and the Norwalk-Stamford area.

Q. Does this complete your testimony at this time?

A. Yes.

EXHIBIT SPL-1

David A. Schlissel

Senior Consultant
Synapse Energy Economics
22 Crescent Street, Cambridge, MA 02138
(617) 661-3248 • fax: 661-0599

SUMMARY

I have worked for twenty-seven years as a consultant and attorney on complex management, engineering, and economic issues, primarily in the field of energy. This work has involved conducting technical investigations, preparing economic analyses, presenting expert testimony, providing support during all phases of regulatory proceedings and litigation, and advising clients during settlement negotiations. I received undergraduate and advanced engineering degrees from the Massachusetts Institute of Technology and Stanford University and a law degree from Stanford Law School

PROFESSIONAL EXPERIENCE

Electric Industry Restructuring and Deregulation - Investigated whether generators have been intentionally withholding capacity in order to manipulate prices in the new spot wholesale market in New England. Evaluated the reasonableness of nuclear and fossil plant sales and auctions of power purchase agreements. Analyzed stranded utility costs in Massachusetts and Connecticut. Examined the reasonableness of utility standard offer rates and transition charges.

System Operations and Reliability Analysis - Investigated the causes of distribution system outages and inadequate service reliability. Evaluated the impact of a proposed merger on the reliability of the electric service provided to the ratepayers of the merging companies. Assessed whether new transmission and generation additions were needed to ensure adequate levels of system reliability. Scrutinized utility system reliability expenditures. Reviewed natural gas and telephone utility repair and replacement programs and policies.

Power Plant Operations and Economics - Investigated the causes of more than one hundred power plant and system outages, equipment failures, and component degradation, determined whether these problems could have been anticipated and avoided, and assessed liability for repair and replacement costs. Reviewed power plant operating, maintenance, and capital costs. Evaluated utility plans for and management of the replacement of major power plant components. Assessed the adequacy of power plant quality assurance and maintenance programs. Examined the selection and supervision of contractors and subcontractors. Evaluated the reasonableness of contract provisions and terms in proposed power supply agreements.

Nuclear Power - Examined the impact of industry restructuring and nuclear power plant life extensions on decommissioning costs and collections policies. Evaluated utility decommissioning cost estimates. Assessed the potential impact of electric industry deregulation on nuclear power plant safety. Reviewed nuclear waste storage and disposal costs. Investigated the potential safety consequences of nuclear power plant structure, system, and component failures.

Economic Analysis - Analyzed the costs and benefits of energy supply options. Examined the economic and system reliability consequences of the early retirement of major electric generating facilities. Quantified replacement power costs and the increased capital and operating costs due to identified instances of mismanagement.

Expert Testimony - Presented the results of management, technical and economic analyses as testimony in more than seventy proceedings before regulatory boards and commissions in twenty one states, before two federal regulatory agencies, and in state and federal court proceedings.

Litigation and Regulatory Support - Participated in all aspects of the development and preparation of case presentations on complex management, technical, and economic issues. Assisted in the preparation and conduct of pre-trial discovery and depositions. Helped identify and prepare expert witnesses. Aided the preparation of pre-hearing petitions and motions and post-hearing briefs and appeals. Assisted counsel in preparing for hearings and oral arguments. Advised counsel during settlement negotiations.

TESTIMONY

Connecticut Siting Council (Docket No. 217) – March 2002
Whether the proposed 345-kV transmission line between Plumtree and Norwalk substations in Southwestern Connecticut is needed and will produce public benefits.

Vermont Public Service Board (Case No. 6545) – January 2002
Whether the proposed sale of the Vermont Yankee to Entergy is in the public interest of the State of Vermont and Vermont ratepayers.

Connecticut Department of Public Utility Control (Docket 99-09-12RE02) – December 2001
Whether Northeast Utilities should be allowed to pass along to ratepayers significant capital costs incurred at the Millstone Station prior to the sale of that facility.

Connecticut Siting Council (Docket No. 208) – October 2001
Whether the proposed cross-sound cable between Connecticut and Long Island is needed and will produce public benefits for Connecticut consumers.

New Jersey Board of Public Utilities (Docket No. EM01050308) - September 2001
The market power implications of the proposed merger between Conectiv and Pepco.

Illinois Commerce Commission Docket No. 01-0423 – August, September, and October 2001
Commonwealth Edison Company's management of its distribution and transmission systems.

New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1627) - August and September 2001
The environmental benefits from the proposed 500 MW NYPA Astoria generating facility.

New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1191) - June 2001
The environmental benefits from the proposed 1,000 MW Astoria Energy generating facility.

New Jersey Board of Public Utilities (Docket No. EM00110870) - May 2001
The market power implications of the proposed merger between FirstEnergy and GPU Energy.

Connecticut Department of Public Utility Control (Docket 99-09-12RE01) - November 2000
The proposed sale of Millstone Nuclear Station to Dominion Nuclear, Inc.

Illinois Commerce Commission (Docket 00-0361) - August 2000
The impact of nuclear power plant life extensions on Commonwealth Edison Company's decommissioning costs and collections from ratepayers.

Vermont Public Service Board (Docket 6300) - April 2000
Whether the proposed sale of the Vermont Yankee nuclear plant to AmerGen Vermont is in the public interest.

Massachusetts Department of Telecommunications and Energy (Docket 99-107, Phase II) - April and June 2000
The causes of the May 18, 1999, main transformer fire at the Pilgrim generating station.

Connecticut Department of Public Utility Control (Docket 00-01-11) - March and April 2000
The impact of the proposed merger between Northeast Utilities and Con Edison, Inc. on the reliability of the electric service being provided to Connecticut ratepayers.

Connecticut Department of Public Utility Control (Docket 99-09-12) - January 2000
The reasonableness of Northeast Utilities plan for auctioning the Millstone Nuclear Station.

Connecticut Department of Public Utility Control (Docket 99-08-01) - November 1999
Generation, Transmission, and Distribution system reliability.

Illinois Commerce Commission (Docket 99-0115) - September 1999
Commonwealth Edison Company's decommissioning cost estimate for the Zion Nuclear Station.

Connecticut Department of Public Utility Control (Docket 99-03-36) - July 1999
Standard offer rates for Connecticut Light & Power Company.

Connecticut Department of Public Utility Control (Docket 99-03-35) - July 1999
Standard offer rates for United Illuminating Company.

Connecticut Department of Public Utility Control (Docket 99-02-05) - April 1999
Connecticut Light & Power Company stranded costs.

Connecticut Department of Public Utility Control (Docket 99-03-04) - April 1999
United Illuminating Company stranded costs.

Maryland Public Service Commission (Docket 8795) - December 1998
Future operating performance of Delmarva Power Company's nuclear units.

Maryland Public Service Commission (Dockets 8794/8804) - December 1998
Baltimore Gas and Electric Company's proposed replacement of the steam generators at the Calvert Cliffs Nuclear Power Plant. Future performance of nuclear units.

Indiana Utility Regulatory Commission (Docket 38702-FAC-40-S1) - November 1998
Whether the ongoing outages of the two units at the D.C. Cook Nuclear Plant were caused or extended by mismanagement.

Arkansas Public Service Commission (Docket 98-065-U) - October 1998
Entergy's proposed replacement of the steam generators at the ANO Unit 2 Steam Generating Station.

Massachusetts Department of Telecommunications and Energy (Docket 97-120) - October 1998
Western Massachusetts Electric Company's Transition Charge. Whether the extended 1996-1998 outages of the three units at the Millstone Nuclear Station were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 98-01-02) - September 1998
Nuclear plant operations, operating and capital costs, and system reliability improvement costs.

Illinois Commerce Commission (Docket 97-0015) - May 1998
Whether any of the outages of Commonwealth Edison Company's twelve nuclear units during 1996 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses, and program deficiencies could have been avoided or addressed prior to plant outages. Outage-related fuel and replacement power costs.

Public Service Commission of West Virginia (Case 97-1329-E-CN) - March 1998
The need for a proposed 765 kV transmission line from Wyoming, West Virginia, to Cloverdate, Virginia.

Illinois Commerce Commission (Docket 97-0018) - March 1998
Whether any of the outages of the Clinton Power Station during 1996 were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 97-05-12) - October 1997
The increased costs resulting from the ongoing outages of the three units at the Millstone Nuclear Station.

New Jersey Board of Public Utilities (Docket ER96030257) - August 1996
Replacement power costs during plant outages.

Illinois Commerce Commission (Docket 95-0119) - February 1996
Whether any of the outages of Commonwealth Edison Company's twelve nuclear units during 1994 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses, and program deficiencies could have been avoided or addressed prior to plant outages. Outage-related fuel and replacement power costs.

Public Utility Commission of Texas (Docket 13170) - December 1994
Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1991, through December 31, 1993, were caused or extended by mismanagement.

Public Utility Commission of Texas (Docket 12820) - October 1994
Operations and maintenance expenses during outages of the South Texas Nuclear Generating Station.

Wisconsin Public Service Commission (Cases 6630-CE-197 and 6630-CE-209) - September and October 1994
The reasonableness of the projected cost and schedule for the replacement of the steam generators at the Point Beach Nuclear Power Plant. The potential impact of plant aging on future operating costs and performance.

Public Utility Commission of Texas (Docket 12700) - June 1994
Whether El Paso Electric Company's share of Palo Verde Unit 3 was needed to ensure adequate levels of system reliability. Whether the Company's investment in Unit 3 could be expected to generate cost savings for ratepayers within a reasonable number of years.

Arizona Corporation Commission (Docket U-1551-93-272) - May and June 1994
Southwest Gas Corporation's plastic and steel pipe repair and replacement programs.

Connecticut Department of Public Utility Control (Docket 92-04-15) - March 1994
Northeast Utilities management of the 1992/1993 replacement of the steam generators at Millstone Unit 2.

Connecticut Department of Public Utility Control (Docket 92-10-03) - August 1993
Whether the 1991 outage of Millstone Unit 3 as a result of the corrosion of safety-related plant piping systems was due to mismanagement.

Public Utility Commission of Texas (Docket 11735) - April and July 1993
Whether any of the outages of the Comanche Peak Unit 1 Nuclear Station during the period August 13, 1990, through June 30, 1992, were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 91-12-07) - January 1993 and August 1995
Whether the November 6, 1991, pipe rupture at Millstone Unit 2 and the related outages of the Connecticut Yankee and Millstone units were caused or extended by mismanagement. The impact of environmental requirements on power plant design and operation.

Connecticut Department of Public Utility Control (Docket 92-06-05) - September 1992
United Illuminating Company off-system capacity sales.

Public Utility Commission of Texas (Docket 10894) - August 1992
Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1988, through September 30, 1991, were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 92-01-05) - August 1992
Whether the July 1991 outage of Millstone Unit 3 due tot he fouling of important plant systems by blue mussels was the result of mismanagement.

California Public Utilities Commission (Docket 90-12-018) - November 1991, March 1992, June and July 1993
Whether any of the outages of the three units at the Palo Verde Nuclear Generating Station during 1989 and 1990 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses and program deficiencies could have been avoided or addressed prior to outages. Whether specific plant operating cost and capital expenditures were necessary and prudent.

Public Utility Commission of Texas (Docket 9945) - July 1991
Whether El Paso Electric Company's share of Palo Verde Unit 3 was needed to ensure adequate levels of system reliability. Whether the Company's investment in the unit could be expected to generate cost savings for ratepayers within a reasonable number of years. El Paso Electric Company's management of the planning and licensing of the Arizona Interconnection Project transmission line.

Arizona Corporation Commission (Docket U-1345-90-007) - December 1990 and April 1991
Arizona Public Service Company's management of the planning, construction and operation of the Palo Verde Nuclear Generating Station. The costs resulting from identified instances of mismanagement.

New Jersey Board of Public Utilities (Docket ER89110912J) - July and October 1990
The economic costs and benefits of the early retirement of the Oyster Creek Nuclear Plant. The potential impact of the unit's early retirement on system reliability. The cost and schedule for siting and constructing a replacement natural gas-fired generating plant.

Public Utility Commission of Texas (Docket 9300) - June and July 1990
Texas Utilities management of the design and construction of the Comanche Peak Nuclear Plant. Whether the Company was prudent in repurchasing minority owners' shares of Comanche Peak without examining the costs and benefits of the repurchase for its ratepayers.

Federal Energy Regulatory Commission (Docket EL-88-5-000) - November 1989
Boston Edison's corporate management of the Pilgrim Nuclear Station.

Connecticut Department of Public Utility Control (Docket 89-08-11) - November 1989
United Illuminating Company's off-system capacity sales.

Kansas State Corporation Commission (Case 164,211-U) - April 1989
Whether any of the 127 days of outages of the Wolf Creek generating plant during 1987 and 1988 were the result of mismanagement.

Public Utility Commission of Texas (Docket 8425) - March 1989
Whether Houston Lighting & Power Company's new Limestone Unit 2 generating facility was needed to provide adequate levels of system reliability. Whether the Company's investment in Limestone Unit 2 would provide a net economic benefit for ratepayers.

Illinois Commerce Commission (Dockets 83-0537 and 84-0555) - July 1985 and January 1989
Commonwealth Edison Company's management of quality assurance and quality control activities and the actions of project contractors during construction of the Byron Nuclear Station.

New Mexico Public Service Commission (Case 2146, Part II) - October 1988
The rate consequences of Public Service Company of New Mexico's ownership of Palo Verde Units 1 and 2.

United States District Court for the Eastern District of New York (Case 87-646-JBW) - October 1988
Whether the Long Island Lighting Company withheld important information from the New York State Public Service Commission, the New York State Board on Electric Generating Siting and the Environment, and the U.S. Nuclear Regulatory Commission.

Public Utility Commission of Texas (Docket 6668) - August 1988 and June 1989
Houston Light & Power Company's management of the design and construction of the South Texas Nuclear Project. The impact of safety-related and environmental requirements on plant construction costs and schedule.

Federal Energy Regulatory Commission (Docket ER88-202-000) - June 1988
Whether the turbine generator vibration problems that extended the 1987 outage of the Maine Yankee nuclear plant were caused by mismanagement.

Illinois Commerce Commission (Docket 87-0695) - April 1988
Illinois Power Company's planning for the Clinton Nuclear Station.

North Carolina Utilities Commission (Docket E-2, Sub 537) - February 1988
Carolina Power & Light Company's management of the design and construction of the Harris Nuclear Project. The Company's management of quality assurance and quality control activities. The impact of safety-related and environmental requirements on construction costs and schedule. The cost and schedule consequences of identified instances of mismanagement.

Ohio Public Utilities Commission (Case 87-689-EL-AIR) - October 1987
Whether any of Ohio Edison's share of the Perry Unit 2 generating facility was needed to ensure adequate levels of system reliability. Whether the Company's investment in Perry Unit 1 would produce a net economic benefit for ratepayers.

North Carolina Utilities Commission (Docket E-2, Sub 526) - June 1987
Fuel factor calculations.

New York State Public Service Commission (Case 29484) - May 1987
The planned startup and power ascension testing program for the Nine Mile Point Unit 2 generating facility.

Illinois Commerce Commission (Dockets 86-0043 and 86-0096) - April 1987
The reasonableness of certain terms in a proposed Power Supply Agreement.

Illinois Commerce Commission (Docket 86-0405) - March 1987
The in-service criteria to be used to determine when a new generating facility was capable of providing safe, adequate, reliable and efficient service.

Indiana Public Service Commission (Case 38045) - December 1986
Northern Indiana Public Service Company's planning for the Schaefer Unit 18 generating facility. Whether the capacity from Unit 18 was needed to ensure adequate system reliability. The rate consequences of excess capacity on the Company's system.

Superior Court in Rockingham County, New Hampshire (Case 86E328) - July 1986
The radiation effects of low power testing on the structures, equipment and components in a new nuclear power plant.

New York State Public Service Commission (Case 28124) - April 1986 and May 1987
The terms and provisions in a utility's contract with an equipment supplier. The prudence of the utility's planning for a new generating facility. Expenditures on a canceled generating facility.

Arizona Corporation Commission (Docket U-1345-85) - February 1986
The construction schedule for Palo Verde Unit No. 1. Regulatory and technical factors that would likely affect future plant operating costs.

New York State Public Service Commission (Case 29124) - January 1986
Niagara Mohawk Power Corporation's management of construction of the Nine Mile Point Unit No. 2 nuclear power plant.

New York State Public Service Commission (Case 28252) - October 1985
A performance standard for the Shoreham nuclear power plant.

New York State Public Service Commission (Case 29069) - August 1985
A performance standard for the Nine Mile Point Unit No. 2 nuclear power plant.

Missouri Public Service Commission (Cases ER-85-128 and EO-85-185) - July 1985
The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Wolf Creek Nuclear Plant.

Massachusetts Department of Public Utilities (Case 84-152) - January 1985
The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.

Maine Public Utilities Commission (Docket 84-113) - September 1984
The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.

South Carolina Public Service Commission (Case 84-122-E) - August 1984
The repair and replacement strategy adopted by Carolina Power & Light Company in response to pipe cracking at the Brunswick Nuclear Station. Quantification of replacement power costs attributable to identified instances of mismanagement.

Vermont Public Service Board (Case 4865) - May 1984
The repair and replacement strategy adopted by management in response to pipe cracking at the Vermont Yankee nuclear plant.

New York State Public Service Commission (Case 28347) -January 1984
The information that was available to Niagara Mohawk Power Corporation prior to 1982 concerning the potential for cracking in safety-related piping systems at the Nine Mile Point Unit No. 1 nuclear plant.

New York State Public Service Commission (Case 28166) - February 1983 and February 1984
Whether the January 25, 1982, steam generator tube rupture at the Ginna Nuclear Plant was caused by mismanagement.

U.S. Nuclear Regulatory Commission (Case 50-247SP) - May 1983
The economic costs and benefits of the early retirement of the Indian Point nuclear plants.

REPORTS, ARTICLES, AND PRESENTATIONS

Preliminary Assessment of the Need for the Proposed Plumtree-Norwalk 345-kV Transmission Line. A Synapse Report for the Towns of Bethel, Redding, Weston, and Wilton Connecticut. October 15, 2001.

ISO New England's Generating Unit Availability Study: Where's the Beef? A Presentation at the June 29, 2001 Restructuring Roundtable.

Clean Air and Reliable Power: Connecticut Legislative House Bill HB6365 will not Jeopardize Electric System Reliability. A Synapse Report for the Clean Air Task Force. May 2001.

Room to Breathe: Why the Massachusetts Department of Environmental Protection's Proposed Air Regulations are Compatible with Reliability. A Synapse Report for MASSPIRG and the Clean Water Fund. March 2001.

Generator Outage Increases: A Preliminary Analysis of Outage Trends in the New England Electricity Market, a Synapse Report for the Union of Concerned Scientists, January 7, 2001.

Cost, Grid Reliability Concerns on the Rise Amid Restructuring, with Charlie Harak, Boston Business Journal, August 18-24, 2000.

Report on Indian Point 2 Steam Generator Issues, Schlissel Technical Consulting, Inc., March 10, 2000.

Preliminary Expert Report in Case 96-016613, Cities of Wharton, Pasadena, et al v. Houston Lighting & Power Company, October 28, 1999.

Comments of Schlissel Technical Consulting, Inc. on the Nuclear Regulatory Commission's Draft Policy Statement on Electric Industry Economic Deregulation, February 1997.

Report to the Municipal Electric Utility Association of New York State on the Cost of Decommissioning the Fitzpatrick Nuclear Plant, August 1996.

Report to the Staff of the Arizona Corporation Commission on U.S. West Corporation's telephone cable repair and replacement programs, May, 1996.

Nuclear Power in the Competitive Environment, NRRI Quarterly Bulletin, Vol. 16, No. 3, Fall 1995.

Nuclear Power in the Competitive Environment, presentation at the 18th National Conference of Regulatory Attorneys, Scottsdale, Arizona, May 17, 1995.

The Potential Safety Consequences of Steam Generator Tube Cracking at the Byron and Braidwood Nuclear Stations, a report for the Environmental Law and Policy Center of the Midwest, 1995.

Report to the Public Policy Group Concerning Future Trojan Nuclear Plant Operating Performance and Costs, July 15, 1992.

Report to the New York State Consumer Protection Board on the Costs of the 1991 Refueling Outage of Indian Point 2, December 1991.

Preliminary Report on Excess Capacity Issues to the Public Utility Regulation Board of the City of El Paso, Texas, April 1991.

Nuclear Power Plant Construction Costs, presentation at the November, 1987, Conference of the National Association of State Utility Consumer Advocates.

Comments on the Final Report of the National Electric Reliability Study, a report for the New York State Consumer Protection Board, February 27, 1981.

OTHER SIGNIFICANT INVESTIGATIONS AND LITIGATION SUPPORT WORK

Assisted the Connecticut Office of Consumer Counsel in reviewing the auction of Connecticut Light & Power Company's power purchase agreements. August and September, 2000.

Assisted the New Jersey Division of the Ratepayer Advocate in evaluating the reasonableness of Atlantic City Electric Company's proposed sale of its fossil generating facilities. June and July, 2000.

Investigated whether the 1996-1998 outages of the three Millstone Nuclear Units were caused or extended by mismanagement. 1997 and 1998. Clients were the Connecticut Office of Consumer Counsel and the Office of the Attorney General of the Commonwealth of Massachusetts.

Investigated whether the 1995-1997 outages of the two units at the Salem Nuclear Station were caused or extended by mismanagement. 1996-1997. Client was the New Jersey Division of the Ratepayer Advocate.

Assisted the Associated Industries of Massachusetts in quantifying the stranded costs associated with utility generating plants in the New England states. May through July, 1996

Investigated whether the December 25, 1993, turbine generator failure and fire at the Fermi 2 generating plant was caused by Detroit Edison Company's mismanagement of fabrication, operation or maintenance. 1995. Client was the Attorney General of the State of Michigan.

Investigated whether the outages of the two units at the South Texas Nuclear Generating Station during the years 1990 through 1994 were caused or extended by mismanagement. Client was the Texas Office of Public Utility Counsel.

Assisted the City Public Service Board of San Antonio, Texas in litigation over Houston Lighting & Power Company's management of operations of the South Texas Nuclear Generating Station.

Investigated whether outages of the Millstone nuclear units during the years 1991 through 1994 were caused or extended by mismanagement. Client was the Office of the Attorney General of the Commonwealth of Massachusetts.

Evaluated the 1994 Decommissioning Cost Estimate for the Maine Yankee Nuclear Plant. Client was the Public Advocate of the State of Maine.

Evaluated the 1994 Decommissioning Cost Estimate for the Seabrook Nuclear Plant. Clients were investment firms that were evaluating whether to purchase the Great Bay Power Company, one of Seabrook's minority owners.

Investigated whether a proposed natural-gas fired generating facility was need to ensure adequate levels of system reliability. Examined the potential impacts of environmental regulations on the unit's expected construction cost and schedule. 1992. Client was the New Jersey Rate Counsel.

Investigated whether Public Service Company of New Mexico management had adequately disclosed to potential investors the risk that it would be unable to market its excess generating capacity. Clients were individual shareholders of Public Service Company of New Mexico.

Investigated whether the Seabrook Nuclear Plant was prudently designed and constructed. 1989. Clients were the Connecticut Office of Consumer Counsel and the Attorney General of the State of Connecticut.

Investigated whether Carolina Power & Light Company had prudently managed the design and construction of the Harris nuclear plant. 1988-1989. Clients were the North Carolina Electric Municipal Power Agency and the City of Fayetteville, North Carolina.

Investigated whether the Grand Gulf nuclear plant had been prudently designed and constructed. 1988. Client was the Arkansas Public Service Commission.

Reviewed the financial incentive program proposed by the New York State Public Service Commission to improve nuclear power plant safety. 1987. Client was the New York State Consumer Protection Board.

Reviewed the construction cost and schedule of the Hope Creek Nuclear Generating Station. 1986-1987. Client was the New Jersey Rate Counsel.

Reviewed the operating performance of the Fort St. Vrain Nuclear Plant. 1985. Client was the Colorado Office of Consumer Counsel.

WORK HISTORY

2000 - Present: Senior Consultant, Synapse Energy Economics, Inc.

1994 - 2000: President, Schlissel Technical Consulting, Inc.

1983 - 1994: Director, Schlissel Engineering Associates

1979 - 1983: Private Legal and Consulting Practice

1975 - 1979: Attorney, New York State Consumer Protection Board

1973 - 1975: Staff Attorney, Georgia Power Project

EDUCATION

1983-1985: Massachusetts Institute of Technology
Special Graduate Student in Nuclear Engineering and Project Management,

1973: Stanford Law School,
Juris Doctor

1969: Stanford University
Master of Science in Astronautical Engineering,

1968: Massachusetts Institute of Technology
Bachelor of Science in Astronautical Engineering,

PROFESSIONAL MEMBERSHIPS

- New York State Bar since 1981
- American Nuclear Society
- National Association of Corrosion Engineers
- National Academy of Forensic Engineers (Correspondent Affiliate)

EXHIBIT SPL-2

Paul R. Peterson

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EMPLOYMENT

Synapse Energy Economics Inc., Cambridge, MA. Senior Associate, March 2001 - present.
Provide consulting services on a variety of energy and electricity related studies.

ISO New England Inc., Holyoke, MA.

Coordinator of Regulatory Affairs, 2000 – 2001.
Coordinate regulatory activities with individual state public utility commissions, the New England Conference of Public Utilities Commissioners (NECPUC), and the Federal Energy Regulatory Commission (FERC). Assist the General Counsel on a variety of specific tasks and documents; draft letters and reports for the Chief Executive Officer.

Public Information and Government Affairs, 1998 – 1999.
Worked with all ISO-NE constituencies including NEPOOL Participants, regulatory agencies, and stakeholder groups in large-group and small-group formats. Developed and presented materials that described ISO-NE's functions, special projects (including Year 2000 rollover issues), and future evolution.

Vermont Public Service Board, Montpelier, VT. Senior Associate, March 2001 - present.

Policy Analyst, 1997 - 1998.
Monitored House and Senate legislation on electric restructuring; helped coordinate the passage of Senate Bill S.62 in 1997. Coordinated the New England Conference of Public Utilities Commissioners (NECPUC) activities regarding NEPOOL restructuring; assisted in drafting documents to create an Independent System Operator (ISO) for New England. Worked on New England task forces to develop a model rule for electric disclosure projects for consumer information and regulatory compliance.

Utilities Analyst, 1990 - 1997.
Reviewed regulated utility filings for changes in rates; judicial Hearing Officer for contested cases on a wide range of topics; wrote all decisions regarding annual utility applications for Weatherization Tax Credits. Focused on integrated resource planning and electric industry restructuring; initial Hearing Officer for the Energy Efficiency Utility docket. Chaired the Staff Energy Committee of NECPUC.

Energy Analysis, Burlington, VT. Consultant, 1990.
Energy-efficiency program design and evaluation.

UVM Extension Service, Burlington, VT.

Area Energy Agent, 1985 - 1990.
Performed tasks pursuant to an annual contract with Vermont Department of Public Service to conduct energy research, design energy efficiency programs and provide public education (see attached list of publications).

Home Energy Audit Team (H.E.A.T.), 1978 - 1985.
Home energy audits; energy surveys for commercial, municipal, and non-profit buildings; energy education and information.

The Close-Up Foundation, Washington, D.C. Program Administrator, 1975 - 1978.
Directed weekly government studies program for 200 high school students and teachers; supervised a staff of fifteen; coordinated curriculum and logistical aspects of program.

EDUCATION

Admitted to Vermont Bar, February 1992

Western New England College School Of Law, Springfield, MA.
Juris Doctor degree, cum laude, May 1990
American Jurisprudence Award: Remedies, 1989
Merit Scholarship recipient
Student Bar Association Representative

Williams College, Williamstown, MA
Bachelor of Arts degree, cum laude, June 1974
Political Science and Environmental Studies
Tyng Scholarship recipient

National Judicial College, Reno, NV
Administrative Hearings, Sept., 1994
Civil Mediation, March, 1996
Civil Mediation, July, 1997 (faculty assistant)

American Inns of Court, Northern Vermont Chapter
1995-1996, member
1996-1997, member

Continuing Legal Education, Vermont Bar Association
Americans with Disabilities Act, April 1992
Ethical Issues/Governmental Agencies, October 1992
Advance Medical Directives, May 1993
Family Law Workshop, September 1993
Negotiating Settlements, May 1994
Physician Assisted Suicide Symposium, October 1996
Electric Industry Restructuring, March 1999
Advance Medical Directives, May 1999
Tax Law for Non-Tax Law Attorneys, May 2000
International Law Update, June 2000

UVM Continuing Education, Brattleboro, VT
Small Computer Course, Spring 1983
Communications Workshops, Spring 1983 & Spring 1984

PUBLICATIONS & PROJECTS

Residential Construction Survey, Survey of Vermont new home construction for construction techniques, energy-efficient design, appliance loads, etc. 1986, 1989.

Vermont Vacation Home Energy Study, Survey of vacation home energy consumption and impact on Vermont statewide electrical demand. 1989.

Dairy Farm Energy Use, A detailed examination of electrical energy consumption on forty Vermont dairy farms to identify opportunities for improving energy-efficiency. 1987.

Mobile Home Booklet, A fresh look at energy saving opportunities for mobile homeowners. Specific problems of cold climates are addressed. 1987.

Dairy Farm Energy Project, Implemented $400,000 grant from Vermont Department of Agriculture for installation of milk-cooling equipment that also produced hot water. 1989.

Vocational Building Trades Instructors, Annual workshops on energy-efficient construction practices for the teachers of Vermont building trades students. Classroom presentations on selected topics. 1986 - 1989.

Brattleboro Community Energy Education Project, Coordinated a Central Vermont Public Service Company funded project to promote energy-efficiency awareness through community programs. 1985.

PROFESSIONAL CONFERENCES

Federal Energy Regulatory Commission Conference, Philadelphia, PA. March 2001.
National Association Of Regulatory Utility Commissioners, Washington, DC. 1998 - 2000
Advanced Integrated Resource Planning Seminar, Berkeley, CA 1995
ACEEE Summer Study, Pacific Grove, CA 1992 & 1994
1991 DOE Low-Level Radioactive Waste Conference, Atlanta, GA

Resume dated March 2001.

EXHIBIT SPL-3

LANZALOTTA & ASSOCIATES LLC

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PETER J. LANZALOTTA

Peter J. Lanzalotta is a Principal of Lanzalotta & Associates LLC. He is a Professional Engineer licensed in the states of Maryland and Connecticut. Mr. Lanzalotta holds a Bachelor of Science in Electric Power Engineering from Rensselaer Polytechnic Institute and a Master of Business Administration with a concentration in Finance from Loyola College of Baltimore. He is a member of the Institute of Electrical & Electronics Engineers, the National Society of Professional Engineers, the National Fire Protection Association, and the Financial Management Association.

Mr. Lanzalotta has more than twenty-five years experience in electric utility system planning, power pooling operations, distribution operations, electric service reliability, load and price forecasting, and market analysis and development. Mr. Lanzalotta has appeared as an expert witness on utility planning and operation matters in more than 40 proceedings in 13 states, the District of Columbia, and the Provinces of Alberta and Ontario.

Mr. Lanzalotta has worked for many years on behalf of the City of Chicago on electric reliability-related matters. Mr. Lanzalotta is currently engaged by various government offices and agencies in the states of Delaware, Maryland, and Pennsylvania on an ongoing basis to help develop procedures for the reporting of and the evaluation of electric distribution system reliability performance and

remedial actions, as well to investigate specific electric service reliability concerns. Mr. Lanzalotta has participated in developing electric service reliability standards with attendant incentives and penalties for use with performance-based rates in several states.

Mr. Lanzalotta has participated in negotiations between utilities and customers, advocates, or regulators in more than ten states regarding transmission access, the need for facilities, electric rates, electric service reliability, and system operator structure under wholesale competition. He has worked with numerous large energy users to negotiate improved supply terms and conditions, to evaluate energy supply alternatives, and to implement projects to reduce energy costs and/or to improve electric supply reliability. Among the clients he has assisted are an international tire company with more than ten facilities in North America, a large privately-owned aluminum smelter in Ohio, the States of South Dakota, Maryland and Pennsylvania, the cities of Chicago IL and New York NY, and numerous other municipal utilities and energy consumers.

Prior to forming the firm at the end of 2000, Mr. Lanzalotta was a Partner of Whitfield Russell Associates for 15 years and a Senior Associate of the same firm for 4 years before that. Prior to that, he served as System Engineer of the Connecticut Municipal Electric Energy Cooperative (CMEEC). He provided operational and financial suport, and rate analyses for CMEEC's budgeting, ratemaking and project evaluations. He managed CMEEC's participation in the New England Power Pool (NEPOOL) operations, and in the Hydro-Quebec/NEPOOL interconnection project. Also he participated in the development of a data base to support CMEEC's operational and financial data needs.

Formerly, he was Chief Engineer for the South Norwalk (Connecticut) Electric Works. He was responsible for system operation, data processing, engineering, rates and tariffs, generation operation and sales, project management and contractor liaison. He designed and implemented cogeneration and small power production programs, improvements in wholesale purchases and generation resources, and was responsible for retail rate design and service policy design. He also was responsible for distribution design, construction, maintenance, and operations.

Mr. Lanzalotta served as a Utility Engineer for the firm of Van Scoyoc & Wiskup. He was responsible for power pooling analyses and proposals, computer modeling, rate analysis and design, and the preparation of expert testimony on these topics.

Previously, he was a Rates/Service Tariffs Analyst with the Baltimore Gas & Electric Company where he developed cost and revenue studies for a wide range of proposals. Prior to this, Mr. Lanzalotta was an Associate Engineer with the System Operations Department of Baltimore Gas & Electric Company for about 3 years.

Peter Lanzalotta's Testimony Filed

1. In re: Public Service Company of New Mexico, Docket Nos. ER78-337 and ER78-338 before the Federal Energy Regulatory Commission, concerning the need for access to calculation methodology underlying filing.

2. In re: Baltimore Gas and Electric Company, Case No. 7238-V before the Maryland Public Service Commission, concerning outage replacement power costs.

3. In re: Houston Lighting & Power Company, Texas Public Utilities Commission Docket No. 4712, concerning modeling methods to determine rates to be paid to cogenerators and small power producers.

4. In re: Nevada Power Company, Nevada Public Service Commission, Docket No. 83-707 concerning rate case fuel inventories, rate base items, and O&M expense.

5. In re: Virginia Electric & Power Company, Virginia State Corporation Commission, concerning the operating and reliability-based need for additional transmission facilities.

6. In re: Public Service Electric & Gas Company, New Jersey Board of Public Utilities, Docket No. 831-25, concerning outage replacement power costs.

7. In re: Philadelphia Electric Company, Pennsylvania Public Utilities Commission, Docket No. P-830453, concerning outage replacement power costs.

8. In re: Cincinnati Gas & Electric Company, Public Utilities Commission of Ohio, Case No. 83-33-EL-EFC, concerning the results of an operations/fuel-use audit conducted by Mr. Lanzalotta.

9. In re: Kansas City Power and Light Company, before the State Corporation Commission of the state of Kansas, Docket Nos. 142,099-U and 120,924-U, concerning the determination of the capacity, from a new base-load generating facility, needed for reliable system operation, and the capacity available from existing generating units.

10. In re: Philadelphia Electric Company, Pennsylvania Public Utilities Commission, Docket No. R-850152, concerning the determination of the capacity, from a new base-load generating facility, needed for reliable system operation, and the capacity available from existing generating units.

11. In re: ABC Method Proposed for Application to Public Service Company of Colorado, before the Public Utilities Commission of the State of Colorado, on behalf of the Federal Executive Agencies ("FEA"), concerning a production cost allocation methodology proposed for use in Colorado.

12. In re: Duquesne Light Company, Docket No. R-870651, before the Pennsylvania Public Utilities Commission, on behalf of the Office of Consumer Advocate, concerning the system reserve margin needed for reliable service.

13. In re: Pennsylvania Power Company, Docket No. I-7970318 before the Pennsylvania Public Utilities Commission, on behalf of the Office of Consumer Advocate, concerning outage replacement power costs.

14. In re: Commonwealth Edison Company, Docket No. 87-0427 before the Illinois Commerce Commission, on behalf of the Citizen's Utility Board of Illinois, concerning the determination of the capacity, from new base-load generating facilities, needed for reliable system operation.

15. In re: Central Illinois Public Service Company, Docket No. 88-0031 before the Illinois Commerce Commission, on behalf of the Citizen's Utility Board

of Illinois, concerning the degree to which existing generating capacity is needed for reliable and/or economic system operation.

16. In re: Illinois Power Company, Docket No. 87-0695 before the State of Illinois Commerce Commission, on behalf of Citizens Utility Board of Illinois, Governors Office of Consumer Services, Office of Public Counsel and Small Business Utility Advocate, concerning the determination of the capacity, from a new base-load generating facility, needed for reliable system operation, and the capacity available from existing generating units.

17. In re: Florida Power Corporation, Docket No. 860001-EI-G (Phase II), before the Florida Public Service Commission, on behalf of the Federal Executive Agencies of the United States, concerning an investigation into fuel supply relationships of Florida Power Corporation.

18. In re: Potomac Electric Power Company, before the Public Service Commission of the District of Columbia, Docket No. 877, on behalf of the Public Service Commission Staff, concerning the need for and availability of new generating facilities.

19. In re: South Carolina Electric & Gas Company, before the South Carolina Public Service Commission, Docket No. 88-681-E, On Behalf of the State of Carolina Department of Consumer Affairs, concerning the capacity needed for reliable system operation, the capacity available from existing generating units, relative jurisdictional rate of return, reconnection charges, and the provision of supplementary, backup, and maintenance services for QFs.

20. In re: Commonwealth Edison Company, Illinois Commerce Commission, Docket Nos. 87-0169, 87-0427, 88-0189, 88-0219, and 88-0253, on behalf of the Citizen's Utility Board of Illinois, concerning the determination of the

capacity, from a new base-load generating facility, needed for reliable system operation.

21. In re: Illinois Power Company, Illinois Commerce Commission, Docket No. 89-0276, on behalf of the Citizen's Utility Board of Illinois, concerning the determination of capacity available from existing generating units.

22. In re: Jersey Central Power & Light Company, New Jersey Board of Public Utilities, Docket No. EE88-121293, on behalf of the State of New Jersey Department of the Public Advocate, concerning evaluation of transmission planning.

23. In re: Canal Electric Company, before the Federal Energy Regulatory Commission, Docket No. ER90-245-000, on behalf of the Municipal Light Department of the Town of Belmont, Massachusetts, concerning the reasonableness of Seabrook Unit No. 1 Operating and Maintenance expense.

24. In re: New Hampshire Electric Cooperative Rate Plan Proposal, before the New Hampshire Public Utilities Commission, Docket No. DR90-078, on behalf of the New Hampshire Electric Cooperative, concerning contract valuation.

25. In re: Connecticut Light & Power Company, before the Connecticut Department of Public Utility Control, Docket No. 90-04-14, on behalf of a group of Qualifying Facilities concerning O&M expenses payable by the QFs.

26. In re: Duke Power Company, before the South Carolina Public Service Commission, Docket No. 91-216-E, on behalf of the State of South Carolina Department of Consumer Advocate, concerning System Planning, Rate Design and Nuclear Decommissioning Fund issues.

27. In re: Jersey Central Power & Light Company, before the Federal Energy Regulatory Commission, Docket No. ER91-480-000, on behalf of the Boroughs of Butler, Madison, Lavallette, Pemberton and Seaside Heights, concerning the appropriateness of a separate rate class for a large wholesale customer.

28. In re: Potomac Electric Power Company, before the Public Service Commission of the District of Columbia, Formal Case No. 912, on behalf of the Staff of the Public Service Commission of the District of Columbia, concerning the Application of PEPCO for an increase in retail rates for the sale of electric energy.

29. Commonwealth of Pennsylvania, House of Representatives, General Assembly House Bill No. 2273. Oral testimony before the Committee on Conservation, concerning proposed Electromagnetic Field Exposure Avoidance Act.

30. In re: Hearings on the 1990 Ontario Hydro Demand\Supply Plan, before the Ontario Environmental Assessment Board, concerning Ontario Hydro's System Reliability Planning and Transmission Planning.

31. In re: Maui Electric Company, Docket No. 7000, before the Public Utilities Commission of the State of Hawaii, on behalf of the Division of Consumer Advocacy, concerning MECO's generation system, fuel and purchased power expense, depreciation, plant additions and retirements, contributions and advances.

32. In re: Hawaiian Electric Company, Inc., Docket No. 7256, before the Public Utilities Commission of the State of Hawaii, on behalf of the Division of Consumer Advocacy, concerning need for, design of, and routing of proposed transmission facilities.

33. In re: Commonwealth Edison Company, Docket No. 94-0065, before the Illinois Commerce Commission, on behalf of the City of Chicago, concerning proposed general increase in rates.

34. In re: Commonwealth Edison Company, Docket No. 92-0221, before the Illinois Commerce Commission, on behalf of the Friends of Illinois Prairie Path, concerning application for a Certificate of Public Convenience and Necessity ("CPCN") for a new transmission line and substation.

35. In re: Commonwealth Edison Company, Docket No. 92-0216, before the Illinois Commerce Commission, on behalf of Citizens for Responsible Electric Power, concerning application for a Certificate of Public Convenience and Necessity ("CPCN") for a new transmission line and substation.

36. In re: Commonwealth Edison Company, Docket No. 94-0179, before the Illinois Commerce Commission, on behalf of the Friends of Sugar Ridge, concerning the need for proposed 138 kV transmission and substation facilities.

37. In re: Public Service Company of Colorado, Docket Nos. 95A-531EG and 95I-464E, before the Colorado Public Utilities Commission, on behalf of the Office of Consumer Counsel, concerning a proposed merger with Southwestern Public Service Company and a proposed performance-based rate-making plan.

38. In re: South Carolina Electric & Gas Company, Duke Power Company, and Carolina Power & Light Company, Docket No. 95-1192-E, before the South Carolina Public Service Commission, on behalf of the South Carolina Department of Consumer Advocate, concerning avoided cost rates payable to qualifying facilities.

39. In re: Lawrence A. Baker v. Truckee Donner Public Utility District, Case No. 55899, before the Superior Court of the State of California, on behalf of Truckee Donner Public Utility District, concerning the reasonableness of electric rates.

40. In re: Black Hills Power & Light Company, Docket No. OA96-75-000, before the Federal Energy Regulatory Commission on behalf of the City of Gillette, Wyoming, concerning the Black Hills' proposed open access transmission tariff.

41. In re: Metropolitan Edison Company and Pennsylvania Electric Company for Approvals of the Restructuring Plan Under Section 2806, Docket Nos. R-00974008 and R-00974009 before the Pennsylvania PUC on behalf of Operating NUG Group, concerning miscellaneous restructuring issues.

42. In re: New Jersey State Restructuring Proceeding for consideration of proposals for retail competition under BPU Docket Nos. EX94120585U; E097070457; E097070460; E097070463; E097070466 before the New Jersey BPU on behalf of the New Jersey Division of Ratepayer Advocate, concerning load balancing, third party settlements, and market power.

43. In re: Arbitration Proceeding In City of Chicago v. Commonwealth Edison for consideration of claims that franchise agreement has been breached, Proceeding No. 51Y-114-350-96 before arbitration panel board on behalf of the City of Chicago concerning electric system reliability.

44. In re: Transalta Utilities Corporation, Application No. RE 95081 on behalf of the ACD companies, before the Alberta Energy And Utilities Board in reference to the use and value of interruptible capacity.

45. In re: Consolidated Edison Company, Docket No. EL99-58-000 on behalf of The Village of Freeport, New York, before FERC in reference to remedies for the breach of contract to provide firm service on a non-discriminatory basis and failure to operate and maintain facilities in a prudent fashion.

46. In re: ESBI Alberta Ltd., Application No. 990005 on behalf of The Firm Customer Group, before the Alberta Energy And Utilities Board in reference to the reasonable cost of service plus management fee to be charged by the Transmission Administrator for the province.

47. In re: South Carolina Electric & Gas Company, Docket No. 2000-0170-E on behalf of the South Carolina Department of Consumer Affairs before the Public Service Commission of South Carolina concerning an application for a Certificate of Environmental Compatibility and Public Convenience and Necessity for new and repowered generating units at the Urquhart generating station.

48. In re: Baltimore Gas & Electric Company, Case No. 8837 on behalf of the Maryland Office of People's Counsel before the Maryland Public Service Commission concerning the electric line extension costs payable by commercial and industrial customers.

49. In re: PEPCO, Case No. 8844 on behalf of the Maryland Office of People's Counsel before the Maryland Public Service Commission concerning proposed electric line extension charges.

EXHIBIT SPL-4

THE CONNECTICUT SITING COUNCIL
DOCKET NO. 217

Application of the Connecticut Light and Power Company
for a Certificate of Environmental Compatibility
and Public Need for an Electric Transmission Line Facility
between Plumtree Substation, Bethel
and Norwalk Substation, Norwalk

Supplemental Testimony of
David A. Schlissel
Peter J. Lanzalotta
Paul R. Peterson

On behalf of
The Towns of Bethel, Redding, Weston and Wilton, Connecticut

November 22, 2002

Q. Mr. Schlissel, please state your name, position and business address.

A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Mr. Peterson, please state your name, position and business address.

A. My name is Paul R. Peterson. I am a Senior Associate at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Mr. Lanzalotta, please state your name, position and business address.

A. My name is Peter J. Lanzalotta. I am Principal with Lanzalotta & Associates LLC, ("Lanzalotta") 9762 Polished Stone, Columbia, Maryland 21046.

Q. Have you previously submitted testimony in this proceeding?

A. Yes. We submitted testimony on March 12, 2002 on behalf of the Towns of Bethel, Redding, Weston and Wilton, Connecticut ("Towns").

Q. What is the purpose of this supplemental testimony?

A. The purpose of this supplemental testimony is to update the testimony that we filed on March 12, 2002 and to discuss the conclusions of ISO-NE's recently issued RTEP02 Report concerning system reliability and congestion costs in Southwestern Connecticut.

Q. Have you revised any of the conclusions in your March 12, 2002 testimony?

A. No.

Q. What is the current transmission import capability limit for Southwestern Connecticut?

A. The Southwestern Connecticut import limit is currently 1,850 MW as a result of the recent additions of breakers at the Long Mountain substation and capacitors at the Rocky River and Stony Hill substations.[1]

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[1] RTEP02 Report, approved by the ISO-NE Board of Directors, November 7, 2002, at page 88.

Q. Will the transmission import capability limit for Southwestern Connecticut be increased in the near future whether or not a new transmission line is built from the Plumtree to the Norwalk substations?

A. Yes. The transmission import capability into Southwestern Connecticut is expected to be increased to 2,150 MW in May 2004 as a result of the addition of the Static Compensator at the Glenbrook substation.[2]

Q. What is NEPOOL's target resource planning reliability criterion?

A. NEPOOL's target resource planning reliability criterion is a Loss of Load Expectation ("LOLE") of not more than 1 day in 10 years or .1 days per year.[3]

Q. What is the conclusion of the RTEP02 Report concerning what the reliability of the NEPOOL system will be after the Southwestern Connecticut import capability is increased to 2,150 MW?

A. The RTEP02 Report finds that increasing the Southwestern Connecticut import limit to 2,150 MW improves NEPOOL system reliability. In fact, NEPOOL's LOLE drops to zero from 2004 to 2006 for the case with the Southwestern Connecticut import limit increased to 2,150 MW.[4] This means that NEPOOL's resource planning reliability criterion will be satisfied when the import limit is increased to 2,150 MW, as expected, in May 2004

Q. Did the RTEP02 Report also examine the impact on NEPOOL system reliability of adding CL&P's proposed Plumtree to Norwalk 345-kV line?

A. Yes. RTEP02 found that because the LOLE of the NEPOOL system is already at zero from 2004 to 2006 with a 2,150 MW Southwestern Connecticut import limit, further increasing the import limit to 2,450 MW (which would be the result of

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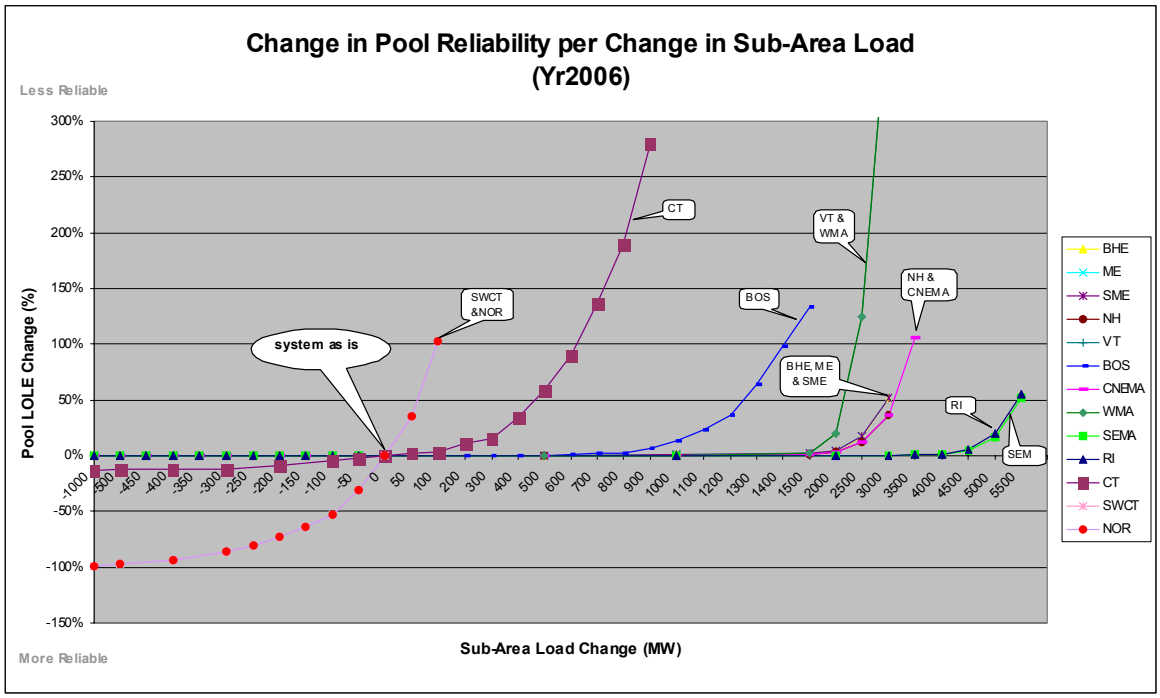
2 Ibid, at page 88.
3 Ibid, at page 109.
4 Ibid, at page 97.

adding CL&P's proposed Plumtree to Norwalk 345-kV line) would not result in any significant improvement in LOLE.[5]

Q. Did RTEP also investigate the impact of reducing loads within Southwestern Connecticut on improving NEPOOL system reliability?

A. Yes. RTEP02 concluded that relatively small load reductions can play an important role in meeting reliability goals. For example, Figure 3.2 in RTEP02 shows that NEPOOL system reliability would be improved by 30 percent by a 50 MW reduction in load in the combined Southwestern Connecticut and Norwalk-Stamford sub areas.



Q. What are the possible sources for such a load reduction?

A. Such load reductions could come about as a result of demand side management programs, the implementation of demand response programs or the addition of new distributed resources or central station facilities.

[5] Ibid, at page98.

Q. Are you aware of any party that has expressed an intention to install new generating capacity with Southwestern Connecticut?

A. Yes. CMEEC and the South Norwalk Electric Works are current seeking to repower a deactivated generating facility with 50 to 100 MW of new fast start generation. The RTEP02 Report shows that the addition of this capacity would significantly improve NEPOOL system reliability and reduce transmission congestion costs.

Q. Did the RTEP02 Report examine electric system reliability assuming that any of the Devon Units are deactivated?

A. Yes. The RTEP02 Report found that if the Southwestern Connecticut import limit is 2,150 MW and at least one of the Milford Units is available, deactivating Devon Units 7, 8 and 10 would not result in NEPOOL violating its Resource Planning Reliability Criterion of .1 days per year LOLE.[6]

The RTEP02 Report also found that if Devon 7, 8 and 10 are deactivated and Norwalk Harbor Units 1 and 2 and the Cos Cob Units are retired, NEPOOL would only be in compliance with the Resource Planning Reliability Criterion if the Southwestern Connecticut import limit were increased above 2,150 MW.[7]

Q. Would the addition of the two underground 115-kV transmission lines from Plumtree to Norwalk substations that you have proposed increase the Southwestern Connecticut import limit above 2,150 MW?

A. Yes.

Q. Did the RTEP02 assessment of system reliability without Devon Units 7, 8 and 10, Norwalk Harbor 1 and 2, and the Cos Cob Units reflect the potential improvements in reliability from even a modest reduction in load?

A. No. The RTEP02 Report did not reflect the potential benefits of reducing load within the combined Norwalk-Stamford and Southwestern Connecticut load

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[6] Ibid, at page 109.
[7] Ibid, at page 109

pocket on NEPOOL system reliability without Devon Units 7, 8 and 10, Norwalk Harbor Units 1 and 2, and Cos Cob.

Q. Did RTEP02 examine what transmission congestion costs in Southwestern Connecticut and Norwalk-Stamford would be if the proposed Plumtree – Norwalk 345 kV transmission line is not built?

A. Yes. RTEP02 estimated that transmission congestion costs in Southwestern Connecticut would be $67.2 million during the years 2002 to 2007 if the import limit into Southwestern Connecticut remains at 2,150 MW.[8] However, $56.3 million of this $67.2 million would be incurred during the years 2002 and 2003 or before the transmission import limit will be increased to 2,150 MW as a result of the addition of the Glenbrook Static Compensator in 2004. This $56.3 million also would be incurred prior to the projected installation of CL&P's proposed Plumtree-Norwalk 345-kV transmission line.

Consequently, under base case assumptions, congestion costs in Southwestern Connecticut during the four year period 2004 to 2007 would be only about $9 million.

Similarly, $28.8 million of the estimated $38.9 million in total congestion costs that would be incurred in the Norwalk-Stamford sub area during the six year period 2002-2007 also would be incurred in the years 2002 and 2003 or before the transmission import limit will be increased to 2,150 MW as a result of the addition of the Glenbrook Static Compensator in 2004.[9] Consequently, congestion costs in the Norwalk-Stamford sub area would be only $10.1 million during the four year period 2004 to 2007.

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[8] Ibid, Table Appendix 13.7-3a, at Appendix 13, page 80.
[9] Ibid, Table Appendix 13.7-3a, at Appendix 13, page 80.

Q. Is it possible to estimate the amount by which the addition of CL&P's proposed 345-kV transmission line from Plumtree to Norwalk would reduce congestion costs in the Southwestern Connecticut and Norwalk-Stamford load pockets?

A. Yes. Tables Appendix 13.7-3a and 13.7-4a in Appendix 13 of the RTEP02 Report provide the following estimates for the annual congestion costs in Norwalk-Stamford and Southwestern Connecticut during the years 2005 to 2007. These are the first three years in which CL&P's proposed 345-kV transmission line is scheduled to be in operation. As we noted earlier, the RTEP02 Report projects that the Southwestern Connecticut import limit will be 2,150 MW without the proposed CL&P transmission line and 2,450 MW will be proposed Phase I line.

Table SLP-S1
Southwestern Connecticut Congestion Costs

	2005	2006	2007
Southwestern Connecticut Import Limit of 2,150 MW	$2.3 million	$3.2 million	$3.8 million
Southwestern Connecticut Import Limit of 2,450 MW	$2.4 million	$3.4 million	$4.2 million

Table SLP-S2
Norwalk-Stamford Congestion Costs

	2005	2006	2007
Southwestern Connecticut Import Limit of 2,150 MW	$1.8 million	$2.3 million	$4.7 million
Southwestern Connecticut Import Limit of 2,450 MW	$1.3 million	$1.7 million	$2.1 million

Consequently, increasing the Southwestern Connecticut import limit by 300 MW by adding CL&P's Phase I 345-kV transmission line would reduce congestion costs in Norwalk-Stamford during these three years, under base case assumptions,

by $3.7 million and in the remainder of Southwestern Connecticut by only $700,000.

Q. Would congestion costs be higher if it were assumed that some of the existing generating units within Southwestern Connecticut were deactivated or retired?

A. Yes. Depending on which units were assumed to be deactivated or retired, congestion cost projections would be higher.

Q. Would the addition of the two underground 115-kV lines from Plumtree to Norwalk that the Towns have proposed reduce congestion costs?

A. Yes. The addition of the two underground 115-kV transmission lines that the Towns have proposed would reduce congestion costs by increasing the transmission import capabilities into the Southwestern Connecticut and the Norwalk-Stamford load pockets.

Q. Does the RTEP02 report discuss whether load reductions in the Norwalk-Stamford and/or Southwestern Connecticut sub-areas also would reduce congestion costs?

A. Yes. The RTEP02 Report reported that its analyses have shown that even relatively small load reductions, i.e., 50 MW to 100 MW, "can reduce congestion costs significantly." For example, Figure 3.1 in the RTEP02 Report shows that 50 MW of Price Responsive DSM could reduce congestion costs in Norwalk-Stamford and Southwestern Connecticut by $80 million to $100 million just in the years 2002 to 2007.[10] The addition of distributed generation capacity or new central station facilities in Norwalk-Stamford and/or Southwestern Connecticut, such as that proposed by CMEEC, could be expected to reduce congestion costs by at least this much.

[10] Ibid, at page 23.

Q. Did the RTEP02 Report specify the major differences between the assumptions used in the RTEP01 analyses and those used in the RTEP02 analyses?

A. Yes. The RTEP02 Report noted that:

- The RTEP02 load forecast for the Southwestern Connecticut and Norwalk-Stamford sub-areas are lower than the RTEP01 forecast.
- The RTEP02 (updated) generator unit availabilities, reflecting the past 5 years of historical generating unit performance, are higher than those used in RTEP01, which results in better generator unit performance.
- The RTEP02 analyses reflected improvements in the Southwestern Connecticut import capability due to recently completed transmission upgrades and additional upgrades to be completed in 2004 that were not modeled in the RTEP01 analyses.[11]

For example the RTEP02 Report notes that its analyses used a 2,223 MW summer peak for Southwestern Connecticut which was almost 300 MW lower than the 2,512 MW figure that was used in the RTEP01 analyses.

Q. Does this complete your supplemental testimony?

A. Yes. This completes our supplemental testimony at this time. However, we want to reserve the right to supplement this testimony after we have had a reasonable opportunity to review the responses to our data requests that ISO-NE has recently provided and the responses that CL&P has indicated will be provided on November 22, 2002. We also reserve the right to supplement this testimony after we have received ISO-NE's evaluation of the two underground 115-kV lines that we proposed in our March 12, 2002 testimony.

[11] Ibid, at page 95.

THE CONNECTICUT SITING COUNCIL
DOCKET NO. 217

Application of the Connecticut Light and Power Company
for a Certificate of Environmental Compatibility
and Public Need for an Electric Transmission Line Facility
between Plumtree Substation, Bethel
and Norwalk Substation, Norwalk

Second Supplemental Testimony of

David A. Schlissel

Peter J. Lanzalotta

Paul R. Peterson

On behalf of

The Towns of Bethel, Redding, Weston and Wilton, Connecticut

January 13, 2003

Q. Mr. Schlissel, please state your name, position and business address.

A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Mr. Peterson, please state your name, position and business address.

A. My name is Paul R. Peterson. I am a Senior Associate at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Mr. Lanzalotta, please state your name, position and business address.

A. My name is Peter J. Lanzalotta. I am Principal with Lanzalotta & Associates LLC, ("Lanzalotta") 9762 Polished Stone, Columbia, Maryland 21046.

Q. Have you previously submitted testimony in this proceeding?

A. Yes. We submitted direct testimony on March 12, 2002 on behalf of the Towns of Bethel, Redding, Weston and Wilton, Connecticut ("Towns"). We also submitted Supplemental Testimony on November 22, 2002

Q. What is the purpose of this Second Supplemental Testimony?

A. The purpose of this Second Supplemental Testimony is to address the "Comparative Analysis of A 345kV Plumtree-Norwalk Overhead Line Versus 2-115kV Cables from Plumtree-Norwalk" recently issued by ISO-NE. ("ISO-NE Comparative Analysis")

Q. What are the most significant findings of the ISO-NE Comparative Analysis?

A. We believe that the most significant findings of the ISO-NE Comparative Analysis were as follows:

- The addition of the two 115-kV transmission lines proposed by the Towns would increase the Operating Thermal Transfer Limit into Norwalk-Stamford by 150 MW to 200 MW. This would be only 50 MW to 100

MW less than CL&P's proposed Phase I 345-kV line from Plumtree to Norwalk.[1]

- The addition of the two 115-kV lines proposed by the Towns would increase the Operating Thermal Transfer Limit into Southwestern Connecticut by 100 MW.[2]
- The 115-kV Phase I Plan had slightly higher line losses (about 3.0 MW) which translated to an annual cost difference of only about $1,000,000.[3]
- The 345-kV Phase II Plan proposed by CL&P and an alternative Plan that included the two 115-kV lines proposed by the Towns were very comparable at the 27,700 MW New England load level. The Phase II 115-kV/345-kV Plan studied by ISO-NE had two contingency overloads while CL&P's proposed Phase II 345-kV loop had none.[4]
- Voltage violations were not an issue between the two Phase II Plans.[5]
- There were only minor differences in the peak demand MW losses between the two Phase II Plans.[6] The Phase II line losses between the two Phase II Plans would only be an annual loss difference of about $150,000.[7]
- Short circuit problems also are a "moot issue" for both Phase II Plans.[8]
- There would be no post-contingency voltage violations for either Phase II Plan at the 27,700 MW or the 30,000 MW load levels.[9]
- The Phase II 115-kV/345-kV Plan studied by ISO-NE would increase the Southwestern Connecticut operating thermal import capability by 1,150 MW or about 250 MW to 350 MW less than the 345-kV loop.[10]

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1 *ISO-NE Comparative Analysis*, Table 9 on page 10.
2 *ISO-NE Comparative Analysis*, Table 8 on page 10.
3 *ISO-NE Comparative Analysis,* at page 11.
4 *ISO-NE Comparative Analysis,* Table 7, at page 9.
5 *ISO-NE Comparative Analysis,* at page 2.
6 *ISO-NE Comparative Analysis,* at pages 3 and 11.
7 *ISO-NE Comparative Analysis,* at page 11.
8 *ISO-NE Comparative Analysis,* at page 12.

- The Phase II 115-kV/345-kV Plan studied by ISO-NE would increase the Southwestern Connecticut planning thermal import capability by 1,350 MW or about 50 MW to 250 MW less than the 345-kV loop.[11]

Q. Do you agree with ISO-NE's conclusion that while the Phase I Plans are "helpful," neither Plan is in itself a total solution and "is only the first step to a broader solution to the reliability issues in Southwestern Connecticut?"[12]

A. Yes. As we have explained in our March 12, 2002 Direct Testimony and November 22, 2002 Supplemental Testimony, we believe that the addition of two underground 115-kV transmission lines from Plumtree to Norwalk will bring additional power into the Norwalk-Stamford sub-area and will address many of the reliability problems in Southwestern Connecticut while producing economic benefits for electric customers in Southwestern Connecticut and Norwalk-Stamford. However, we also recognize that additional system enhancements and reinforcements would have to be made in Southwestern Connecticut even if the Towns' proposed two underground 115-kV line alternative were adopted.

Q. Have you proposed such additional system enhancements and reinforcements in your testimony in this proceeding?

A. No. The Siting Council has specifically limited the scope of this proceeding to an evaluation of CL&P's proposed Phase I 345-kV line from Plumtree to Norwalk, not the entire 345-kV loop. Therefore, a discussion of the other system enhancements that would be required in Southwestern Connecticut in addition to CL&P's proposed Phase I line, or the Towns 115-kV alternative, is beyond the scope of this proceeding.

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9 *ISO-NE Comparative Analysis,* Table 3, on page 6.
10 *ISO-NE Comparative Analysis,* at page 7.
11 *ISO-NE Comparative Analysis,* at page 8.
12 *ISO-NE Comparative Analysis,* at page 4.

Q. ISO-NE compared a Phase II 345-kV Plan to a hybrid Phase II Plan that included the Towns two 115-kV lines from Plumtree to Norwalk with a 345-kV Phase II line. Has ISO-NE compared the full Phase II 345-kV loop to a complete 115-kV loop alternative as part of the Southwestern Connecticut Electric Reliability Study?

A. ISO-NE has claimed that it examined a 115-kV alternative as part of its Southwestern Connecticut Electric Reliability Study. However, as we discussed in some detail in our March 12, 2002 Testimony, the ISO-NE analyses of the 115-kV alternatives were seriously flawed in a number of ways which made them extremely biased in favor of CL&P's preferred 345-kV alternative:

- The power carrying capabilities of the 115-kV alternatives studied by ISO-NE and CL&P were unfairly and significantly hampered by the failure to include any new transmission lines from Plumtree to the Norwalk substation. The absence of any such lines resulted in additional stresses on the transmission system in Southwestern Connecticut and Norwalk-Stamford.[13]

- ISO-NE only examined the 115-kV alternative in a generation dispatch scenario that assumed that only 869 MW of the expected 2,600 MW of generating capacity would be operating in Southwestern Connecticut and Norwalk-Stamford at the time of the system peak.[14]

- ISO-NE only examined the 115-kV in scenarios in which the Norwalk-Long Island underwater cable would either export 200 MW from Connecticut to Long Island (thereby creating additional demand on the transmission system in Southwestern Connecticut) or did not carry any power at all. Unlike its 345-kV loop analyses, ISO-NE did not examine

[13] Schlissel, Peterson and Lanzalotta March 12, 2002 Testimony, at page 29.
[14] Schlissel, Peterson and Lanzalotta March 12, 2002 Testimony, at page 30.

any scenario for the 115-kV loop in which the Norwalk-Long Island line would import additional power into Connecticut.[15]

Consequently, ISO-NE has not completed any comparisons between the Phase II 345-kV Plan and a Phase II 115-kV loop that includes the Towns' two underground 115-kV lines from Plumtree to Norwalk.

Q. ISO-NE has concluded that the addition of two underground 115kV transmission lines by itself would increase the transmission import capability into the Norwalk-Stamford area by about 150 MW to 200 MW. Have you reanalyzed whether these increases would bring enough additional power to reliably serve future customer loads?

A. Yes. Based on the ISO-NE analysis we have determined that the construction of two new underground 115-kV transmission lines from Plumtree to Norwalk substations would bring enough additional power into the Norwalk-Stamford area to reliably serve projected customer loads through at least the year 2016 even if extremely hot summer weather conditions are assumed. These lines also would bring economic benefits to customers in the region.

Q. Please describe the analyses which form the basis for this conclusion.

A. Figures SPL-S1, SPL-S2, and SPL-S3 below show that under CL&P's base case 2002 forecast, the addition of two underground 115-kV transmission lines from Plumtree to Norwalk will ensure that there will be adequate transmission and generation capacity in the Norwalk-Stamford area past the year 2020 to ensure adequate system reliability even if the two largest generating units (i.e., Norwalk Harbor Units 1 and 2) or the two largest transmission lines or one of the Norwalk units and one of the largest transmission lines are out of service at the same time. These figures reflect the double contingency planning criteria that CL&P has discussed in its Application to the Siting Council.

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[15] Schlissel, Peterson and Lanzalotta March 12, 2002 Testimony, at page 31.

Figure SPL-S1
Norwalk-Stamford Peak Demand
Norwalk Units 1 and 2 Out of Service
2002 CL&P Base Case Forecast

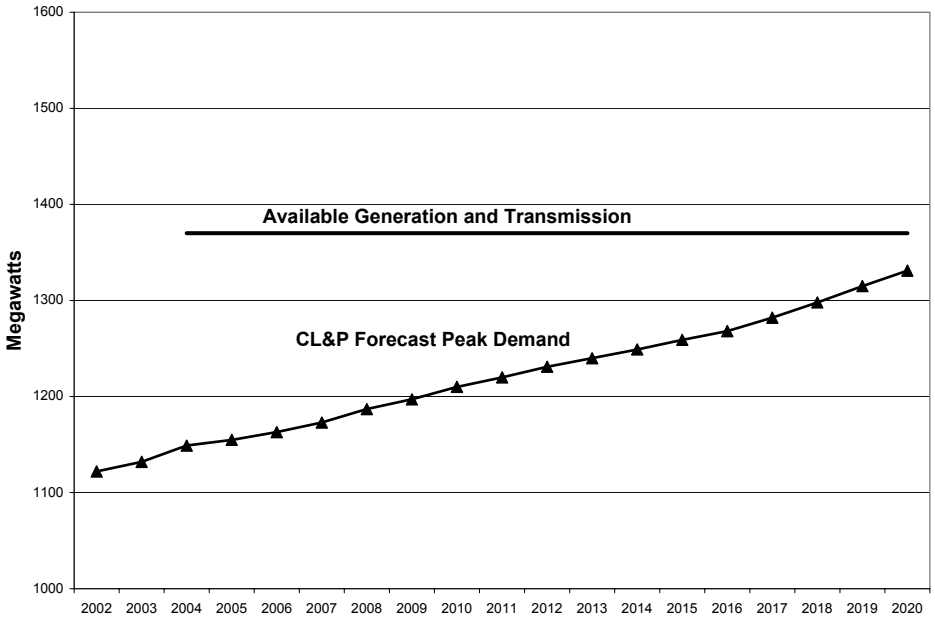


Figure SPL-S2
Norwalk-Stamford Peak Demand
Two Largest Transmission Lines Out of Service
2002 CL&P Base Case Forecast

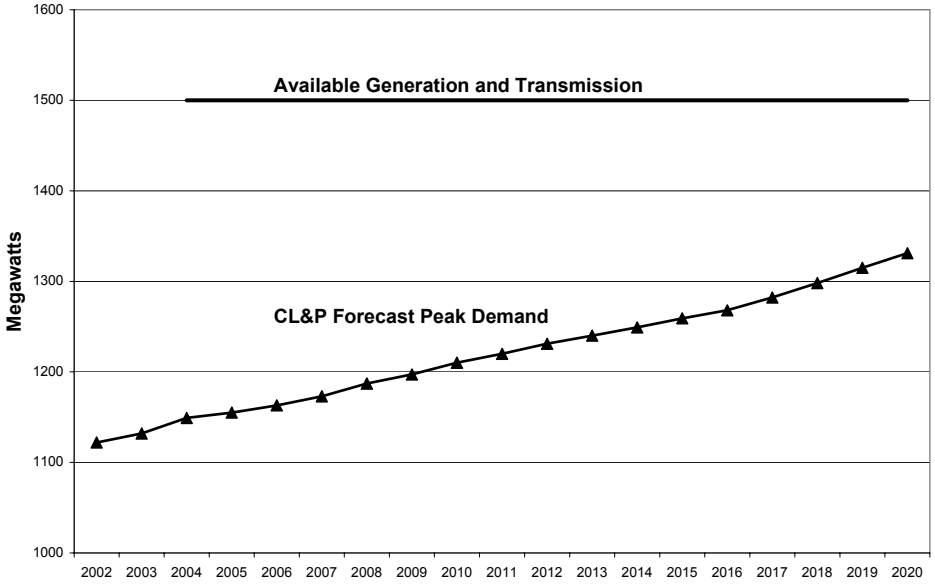
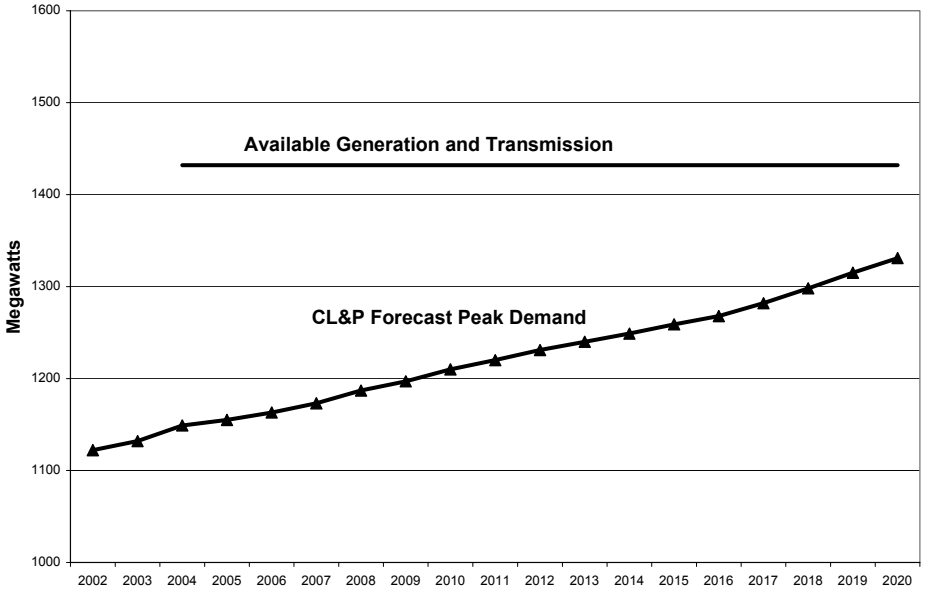


Figure SPL-S3
Norwalk-Stamford Peak Demand
One Norwalk Unit and Largest Transmission Line Out of Service
2002 CL&P Base Case Forecast



Q. Please explain how you determine the amount of generation and transmission capacity that would be available in the Norwalk-Stamford area.

A. The Available Generation and Transmission lines shown on Figures SPL-S1 through SPL-S6 all reflect the approximately 450 MW of existing generating capacity within the Norwalk-Stamford area and approximately 1,250 MW of transmission import capability that would be available into Norwalk-Stamford if the two underground 115-kV transmission lines from Plumtree to Norwalk are added.[16]

Q. What is the basis for the CL&P Forecast Peak Demands shown on Figures SPL-S1 to SPL-S3?

A. The CL&P Peak Demand Forecasts shown on Figures SPL-S1 to SPL-S3 represent CL&P's 2002 Base Case projections and have been taken directly from

[16] This 1,250MW of transmission system capability is conservative because it does not reflect the power that could be imported into Norwalk through the existing or rebuilt underwater transmission cable from Long Island.

Attachment C to CL&P's response to Interrogatory OCC-001. These projected peak demands reflect historic peak producing weather during the years 1970 to 2000. Such weather-normalized peak demands have traditionally been used in evaluating the need for new electric generation and transmission facilities. CL&P has said that these base case forecasts assume "that the average peak-producing weather will be the most likely occurrence."[17]

Q. Would there still be adequate transmission and generation capacity to serve loads in the Norwalk-Stamford area with your proposed two underground 115-kV transmission lines if future peaks demands are higher than CL&P forecast in its Base Case 2002 Forecast?

A. Yes. CL&P developed a more extreme set of peak demands for the years 2002-2020 to reflect the "extremely hot weather" that produced the actual peak load experienced in August 2001.[18] Figures SPL-S4 through SPL-S6 show that there would still be adequate levels of available generation and transmission in the Norwalk-Stamford area with our proposed two underground 115-kV transmission lines even assuming these more extreme CL&P peak demands.

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[17] CL&P's 2002 Forecast of Loads and Resources for 2002-2011, dated March 1, 2002, at page I-2.

[18] CL&P's 2002 Forecast of Loads and Resources for 2002-2011, dated March 1, 2002, at page I-2.

Figure SPL-S4
Norwalk-Stamford Peak Demand
Norwalk Units 1 and 2 Out of Service
CL&P Extreme Forecast Based on Actual 2001 Peak Demand

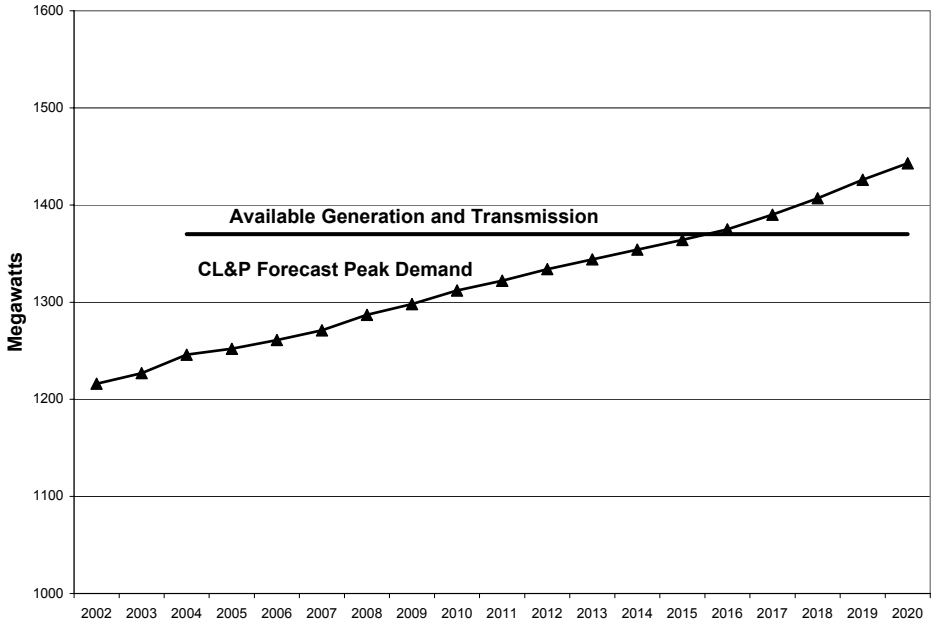


Figure SPL-S5
Norwalk-Stamford Peak Demand
Two Largest Transmission Lines Out of Service
CL&P Extreme Forecast Based on Actual 2001 Peak Demand

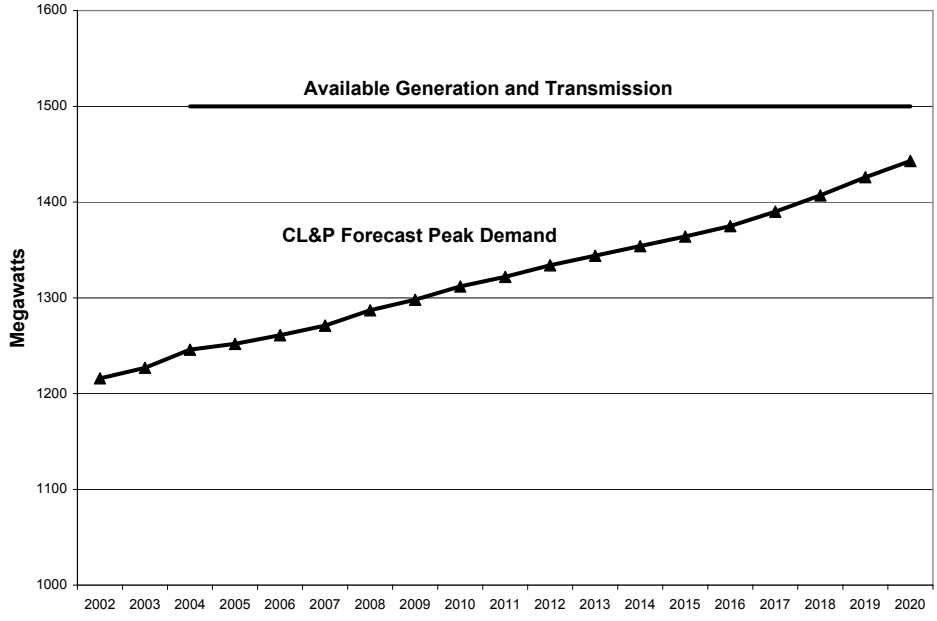
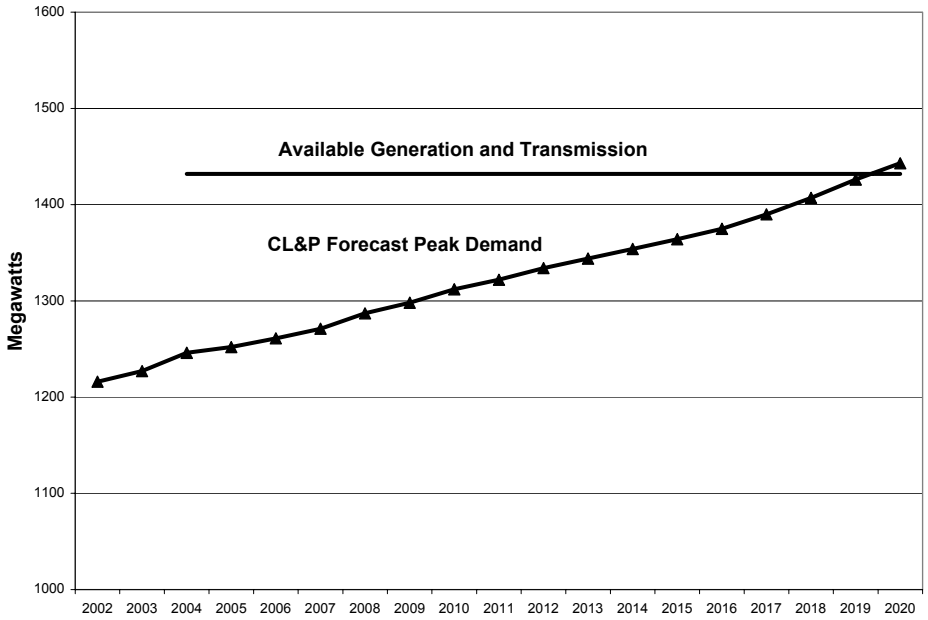


Figure SPL-S6
Norwalk-Stamford Peak Demand
One Norwalk Unit and Largest Transmission Line Out of Service
CL&P Extreme Forecast Based on Actual 2001 Peak Demand



Q. Do Figures SPL-S4 to SPL-S6 reflect the same levels of available generation and transmission capacity as Figures SPL-S1 to SPL-S3?

A. Yes.

Q. What is the basis for the CL&P Forecast Peak Demands shown on Figures SPL-S4 to SPL-S6?

A. These more extreme CL&P Forecast Peak Demands were taken from Attachment C to CL&P's response to Interrogatory OCC-001. They reflect CL&P's "2002 Forecast of Loads and Resources for 2002-2011."

Q. Are the analyses presented in Figures SPL-S1 through SPL-S6 conservative?

A. Yes. As we discussed in detail in our March 12, 2002 Testimony, to be conservative, we have not reflected in Figures SPL-S1 through SPL-S6 any of the reductions in peak loads in the Norwalk-Stamford sub-area that could result from customers' participation in load response programs, the use of distributed

generation facilities or more aggressive demand side management efforts.[19] ISO-NE's RTEP02 analyses demonstrated the significant positive impacts that even relatively small load reductions could have on electric system reliability.[20]

In addition, Figures SPL-S1 through SPL-S6 do not reflect the construction of any new baseload, intermediate or peaking facilities in the Norwalk-Stamford sub-area or the potential repowering of the Norwalk Harbor Station. The presence of any such new or repowered facilities would enhance the reliability of the transmission system in the Southwestern Connecticut and the Norwalk-Stamford sub-areas.

Finally, Figures SPL-S1 through SPL-S6 do not reflect the power that could be imported from Long Island over the existing or a rebuilt Norwalk-Long Island underwater cable.

Q. Have you identified any flawed assumptions that bias the results of ISO-NE's Comparative Analysis?

A. Yes. Even though the ISO-NE Comparative Analysis showed that the Towns' proposed two underground 115-kV alternative was comparable to CL&P's proposed 345kV line from Plumtree to Norwalk, we believe that a number of the assumptions used by ISO-NE caused its analyses to significantly understate the reliability of the electric system in Southwestern Connecticut and Norwalk-Stamford without 345-kV lines. As a result, the analyses were seriously biased in favor of NU's preferred 345-kV line and against the 115-kV alternative.

These biased assumptions included:

- The use of only extreme weather conditions as the base case scenarios.
- The use of loads for Southwestern Connecticut that are unreasonably high.
- The use of several generation dispatch scenarios that starve Southwestern Connecticut by assuming that many generating units in the sub-area would

[19] Schlissel, Peterson and Lanzalotta March 12, 2002 Testimony, at pages 18 through 22.

be out of service at the same time during peak weather and load conditions.

- The failure to include a number of new generating units both inside and outside Connecticut that are under construction or that have been approved by the Connecticut Siting Council.

Q. Do you agree that it was reasonable for ISO-NE to compare the 115-kV and 345-kV alternatives under extreme weather conditions?

A. Yes. It certainly was reasonable to compare the alternatives under extreme weather conditions and loads. However, ISO-NE also should have looked at scenarios examining the alternatives under its base case load forecasts.

Q. What is ISO-NE's base case summer peak forecast for 2006?

A. ISO-NE projects a 25,817 MW reference or base case summer peak load in 2006 and a 27,700 MW high or extreme weather forecast.

Q. Did ISO-NE initially plan to look at extreme weather forecasts while ignoring its base case or reference forecasts?

A. No. The initial plan for the Southwestern Connecticut Electric Reliability Study was to look at a 25,800 MW 2006 Base Case Forecast, a 27,700 MW 2006 Extreme/2012 Base Case Forecast, and a 30,000 MW 2012 Extreme Forecast. An Intermediate and a Light Forecast also were to be examined.[21] For some reason, ISO-NE failed to follow through on this plan and, instead, focused only on the extreme forecasts in its Comparative Analysis. This focus on extreme weather conditions and use of extreme peak loads places significant additional stresses on the electric system in Southwestern Connecticut and Norwalk-Stamford.

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[20] Schlissel, Peterson and Lanzalotta November 22, 2002 Supplemental Testimony, at page 3 and 4.

[21] *ISO-NE Scope of Work, Southwest Connecticut Reliability Study, Draft (Revision 5)*, provided in ISO-NE's Answer to Set Two of Pre-Hearing Questions from the Towns, Question No. 27.

Q. Did ISO-NE's recent RTEP02 analyses examine both base case and extreme or high peak load forecasts?

A. Yes. Unlike the Southwestern Connecticut Electric Reliability Study and ISO-NE's Comparative Analysis, ISO-NE's recent RTEP02 transmission analyses examined both a base case 2006 and a high 2006 peak load forecast.

Q. Please explain the basis for your conclusion that ISO-NE specifically used peak loads for Southwestern Connecticut in its Comparative Analysis that are unreasonably high?

A. ISO-NE assumed that the Southwestern Connecticut share of its 27,700 MW New England extreme peak demand would be 3,720 MW.[22] ISO-NE further assumed that the Norwalk-Stamford share of this extreme peak demand would be 1,310 MW.[23]

As we explained in detail in our March 12, 2002 Testimony, these peak demands are significantly higher than CL&P and the Siting Council have projected.[24] The 2006 peak demand for Southwestern Connecticut and Norwalk-Stamford also is about 200 MW higher than the forecast used by the Connecticut Department of Public Utility Control for its base case in Docket No. 02-04-12, its investigation into possible shortages of electricity in Southwest Connecticut during summer periods of peak demand.

Q. Why has ISO-NE used such high peak demands in their comparisons of the 115-kV and 345-kV alternatives?

A. The methodology used by ISO-NE in the Southwestern Connecticut Electric Reliability Study and the Comparative Analysis to allocate the total 27,700 MW and 30,000 MW New England peak loads among transmission sub-regions assigned too large a percentage of the overall assumed load to Southwestern

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22 *Southwestern Connecticut Electric Reliability Study, Volume I, Final Power-Flow, Voltage and Short-Circuit Report*, December 2002, at page 7.

23 Ibid.

24 March 12, 2002 Testimony of David Schlissel, Paul Peterson, and Peter Lanzalotta, at page 9, lines 11-29, and at page 32, lines 3 through 26.

Connecticut and to the State of Connecticut. ISO-NE used the same methodology in these analyses to allocate the total New England loads that it used earlier in the RTEP01 analyses.

Q. Has ISO-NE acknowledged that this methodology resulted in incorrect peak loads for the Norwalk-Stamford and Southwestern Connecticut sub-areas?

A. Yes. In its recent RTEP02 Report, approved by the ISO-NE Board of Directors on November 7, 2002, ISO-NE noted that it has changed the percentages it uses to allocate the total New England loads to individual sub-areas.[25] As a result, ISO-NE reduced its 2002 coincident summer peak demand for Southwestern Connecticut by 289 MW, from 2,512 MW to 2,233 MW and increased its 2002 coincident summer peak demand for Norwalk-Stamford by approximately 70 MW. As a result, the combined Southwestern Connecticut and Norwalk-Stamford peak demands used in the RTEP02 analyses were several hundred MWs lower than the demands that had been used in RTEP01. Unfortunately, ISO-NE did not make the same corrections in its comparisons of the 115-kV and 345-kV alternatives.

The use of these higher peak loads put unrealistic pressure on the transmission system in Southwestern Connecticut and Norwalk-Stamford and cause ISO-NE's analyses to overstate the unreliability of the system.

Q. Please explain the basis for your conclusion that the ISO-NE analyses are unreasonable because they assume too little generation from power plants in Southwestern Connecticut and Norwalk-Stamford.

A. The generation dispatch scenarios used by ISO-NE are unreasonable for a number of reasons:

1. All of the generation dispatch scenarios examined by ISO-NE assume that a number of the existing power plants in Southwestern Connecticut and

[25] *RTEP02, at page 67 through 75.*

Norwalk-Stamford would not generate any power even during extreme weather and peak load conditions.

2. Two of the four scenarios examined by ISO-NE further starve the electric system by assuming multiple simultaneous outages of other existing power plants in Southwestern Connecticut and Norwalk-Stamford.

3. ISO-NE ignores the potential for new generating capacity within the Norwalk-Stamford and Southwestern Connecticut sub-areas.

Q. Which generating units does ISO-NE assume will provide no generation in all of its generation dispatch scenarios?

A. ISO-NE has said that all of its Southwestern Connecticut Reliability Study generation scenarios assumed that the following units would provide no output, even during peak load periods: Cos Cob 10, 11, 12; Norwalk Harbor Jet; Bridgeport Harbor 2 & 4, Devon 11-14, and South Meadow Jets.[26]

Q. Is this a reasonable assumption?

A. No. On the one hand, ISO-NE assumes that there are such extreme summer weather conditions that peak loads reach 27,700 MW in 2006 and 30,000 in 2012. However, it then assumes that all of these smaller units would not be operated to provide power to meet these extreme customer loads. This is unrealistic and places unreasonable stresses on the electric system in Southwestern Connecticut and Norwalk-Stamford.

Q. Do some of the generation dispatch scenarios assumed by ISO-NE further assume that other generating units in Southwestern Connecticut and Norwalk-Stamford also are not available during peak load conditions?

A. Yes. Two of the Generation Dispatch Scenarios used by ISO-NE in its Southwestern Connecticut Reliability Study and Comparative Analysis studies, i.e., Nos. 2 and 5, further assume that a significant number of other generating

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[26] ISO-NE's February 22, 2002 Response to Question No. 11.c. of Set Two of Pre-Hearing Questions from the Towns.

units in the Southwestern Connecticut and Norwalk-Stamford sub-areas also would not be available during the extreme weather peak load periods.

Generation Dispatch Scenario-2 assumes that both Norwalk Harbor Units, the Bridgeport Energy Plant, all five of the units at the Wallingford Plant, and one of the two units at the Milford Plant are all simultaneously out of service during peak load periods. This represents far more than a double contingency because it assumes that all nine of these units will be out of service at the same time.

Generation Dispatch Scenario-5 assumes that all of the units at the Devon Plant, the Bridgeport Energy Plant, the five units at the Wallingford Plant, and both units at the Milford Plant are all simultaneously out of service during peak load periods. Again, this represents far more than a double contingency because it assumes that all thirteen of these units will be out of service at the same time.

Without the Towantic Plant, there will be approximately 2,660 MW of generating capacity within Southwestern Connecticut and Norwalk-Stamford once the Milford Units are available for service. However, in its Generation Dispatch-2 scenario, ISO-NE assumes that only 867 MW of this capacity would be available during peak periods to meet the extreme weather driven customer loads.[27] In its Generation Dispatch-5 scenario, ISO-NE assumes that only 704 MW of this capacity would be available. These are clearly very unreasonable assumptions that significantly bias ISO-NE's comparisons.

Q. Does ISO-NE's decision to starve Southwestern Connecticut and Norwalk-Stamford of generating capacity during peak periods have a significant impact on its evaluation of the 115-kV alternative?

A. Yes. Table 1 in the ISO-NE Comparative Analysis shows that both of the line overloads in the Phase II 115-kV/345-kV Plan at the 27,700 load level occur in Generation Dispatch Scenario 2.[28] Table 2 shows that 9 of the 13 line overloads

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[27] ISO-NE further stresses the transmission system in Southwestern Connecticut and Norwalk-Stamford by assuming in Generation Dispatch Scenario 2 that 200 MW of power would be exported to Long Island even though all of these generating units were out of service.

[28] *ISO-NE Comparative Analysis,* at page 5.

in the Phase II 115-kV/345-kV Plan at the 30,000 load level occur in Generation Dispatch Scenario 2.[29] Table 3 shows that all four of the post-contingency voltage violations in the Phase 1 115-kV Plan occur in Generation Dispatch Scenarios 2 and 5.[30] Clearly then, the unrealistic assumption that many units in Southwestern Connecticut and Norwalk-Stamford would be out of service at the same time during peak periods has a significant impact on the results of ISO-NE's Comparative Analysis.

Q. Is it reasonable to expect that the Milford Units will be completed and available for service by 2006?

A. Yes. It is reasonable to expect that either the current owner or a new owner will finish the two Milford Units and make them available for service at some time between now and 2006. After all, PSEG Fossil, LLC, recently purchased Wisvest Connecticut which owns the Bridgeport Harbor and New Haven Harbor plants. The new combined cycle equipment at the Milford Units represents a better investment that the older units at the Bridgeport and New Haven facilities.

Q. What is the basis for your conclusion that ISO-NE ignores the potential for generating capacity within the Southwestern Connecticut and the Norwalk-Stamford sub-areas?

A. The ISO-NE Comparative Analysis does not reflect the possibility that the 69 MW of temporary capacity that was installed adjacent to CL&P's Waterside Substation might be available in future years. Nor does it reflect CMEEC's announced intention to add 50 MW to 100 MW of capacity in Norwalk.

In fact, ISO-NE assumes that there would be no new central station or distributed generation facilities added in the Southwestern Connecticut or the Norwalk-Stamford sub-areas by the year 2012 even though higher summer peak demands are being experienced due to load growth and extreme weather conditions. This is

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[29] *ISO-NE Comparative Analysis,* at page 6.
[30] *ISO-NE Comparative Analysis,* at page 6.

an unrealistic assumption that significantly biases its comparative analyses in favor of the 345-kV alternative.

Q. Would the addition of any new distributed or central station generating capacity improve the reliability of the electric system in the Southwestern Connecticut and the Norwalk-Stamford sub-areas?

A. Yes. ISO-NE's recently issued RTEP02 analyses showed that the addition of even relatively small amounts of new generating capacity would significantly improve the reliability of the electric system in the Southwestern Connecticut and the Norwalk-Stamford sub-areas.[31]

Q. Does ISO-NE assume that any new generating capacity is added to the New England system after 2003/2004?

A. No. ISO-NE assumes that peak loads will grow to 27,700 MW by 2006 or 2012 or to 30,000 MW by 2012 or later. But it does not assume that any new generating units will be added to the system after the year 2004. This is an unrealistic assumption that starves Connecticut and the rest of New England of generating capacity.

Q. Are there any other inconsistencies between ISO-NE Comparative Analysis and its recent RTEP02 studies?

A. Yes. ISO-NE assumes in its Comparative Analysis that the Southwestern Connecticut import capability is 2,000 MW without either the 115-kV or the 345-kV Phase I or Phase II projects. However, in its November 2002 RTEP02 report, ISO-NE concludes that the Southwestern Connecticut import capability will increase to 2,150 MW by 2004 whether or not any new transmission line(s) are built between Plumtree and Norwalk substations.

Q. Does this complete your Second Supplemental Testimony?

A. Yes.

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[31] Schlissel, Peterson and Lanzalotta November 22, 2002 Supplemental Testimony, at page 3.