Northeast
Utilities System

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June 20, 2005

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

Re: Docket No. F-05 - Connecticut Siting Council Review of 2005 Forecasts of Electric Loads and Resources

Dear Mr. Phelps:

This letter provides the response to requests for the information listed below.

With this filing, the Company has completed responding to all of the interrogatories requested during this proceeding.

Response to CCAT-01 Interrogatories dated 06/07/2005
CCAT - 001 , 002 , 003 , 004 , 005 , 006 , 007 , 008 , 009 , 010 , 011

Response to CEAB-01 Interrogatories dated 05/25/2005
CEAB - 001 , 002 , 003 , 004 , 005 , 006 , 007 , 008 , 009 , 010 , 011 , 012 , 013 , 014 , 015 , 016 , 017

Very truly yours,

Paula M. Taupier
Manager
Transmission - Regulatory Planning
NUSCO
As Agent for CL&P

PMT/yv
cc: Service List

SERVICE LIST
Docket: F-05

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Mr. John Hutts
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Witness: Robert E. Carberry
Request from: Connecticut Center for Advanced Technology

Question:
Have the utilities established any uniform overhead and underground transmission siting guidelines that establish when, where, and how underground or overhead configurations would be developed?

Response:
CL&P objects to this question because it relates predominantly to the siting of facilities and is therefore beyond the scope of this docket. Without waiving such objection, CL&P notes that there are no such uniform guidelines. CL&P makes case-by-case transmission line siting recommendations based upon:

- Connecticut Siting Council Certificate considerations required to be balanced under CGS section 16-50p
- the latest findings of the Siting Council's periodic proceedings to investigate and determine life-cycle costs for both overhead and underground transmission line alternatives
- the Siting Council's Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines (Note: these practices may be revised by the Council during 2005)
- Public Act 04-246 established a rebuttable presumption that new 345-kV electric transmission lines are to be placed underground in lieu of siting any overhead portions of such a line adjacent to residential areas, private or public schools, licensed child day care facilities, licensed youth camps or public playgrounds. The presumption can only be rebutted by a demonstration to the CT Siting Council of technological infeasibility.
- availability of right-of-way

Following some recent Siting Council docket decisions on major projects which include both underground and overhead transmission lines, CL&P has observed significantly increased costs of underground cable systems installed in state roads, and CL&P is expecting that some costs associated with these projects will not be approved for socialized cost recovery across New England. These developments will form additional input for subsequent line sitings.

Witness: Robert E. Carberry
Request from: Connecticut Center for Advanced Technology

Question:
Have the utilities established any preference standards for underground transmission lines for certain system transmission levels or components, or will underground configurations be considered on a case-by-case basis for new proposals?

Response:
CL&P objects to this question because it relates predominantly to the siting of facilities and is therefore beyond the scope of this docket. Without waiving such objection, CL&P notes as system upgrade needs are established, underground, overhead and hybrid transmission line configurations will be considered case-by-case.

Witness: Robert E. Carberry
Request from: Connecticut Center for Advanced Technology

Question:
Could the standardization of an underground program for lower transmission voltages (115 KV and below) on a dual-voltage system, that includes higher voltage overhead 345 KV lines configured primarily to support large generation interconnection and regional transfers, be of value to increase impedance and improve system integration?

Response:
CL&P objects to this question because it relates predominantly to the siting of facilities and is therefore beyond the scope of this docket. Without waiving such objection, CL&P notes that underground cables for new or upgrade replacements of 115-kV transmission lines will decrease, not increase, the 115-kV system impedance. The impedances of underground cables are typically much lower than the impedances of overhead lines. Effects of reductions in 115-kV system impedances include increased short-circuit current levels over 115-kV system equipment and changes in load-flow distribution patterns on the system. Converting some generator interconnections from the 115-kV transmission system to the 345-kV system could offset the increase in 115-kV system short-circuit currents, but only with further impact on load-flow distribution patterns and possible impacts on 115-kV system voltages. Transmission systems at either voltage work best with generation interconnected at diverse locations, and with this generation sized appropriately for the transmission-system voltage level.

Witness: **Richard A. Soderman**
Request from: **Connecticut Center for Advanced Technology**

Question:
Have the utilities established any guidelines for the use of standardized transmission buffers that could be managed and enforced by local authorities during land use and zoning proceedings?

Response:
CL&P objects to this question because it relates predominantly to the siting of facilities and is therefore beyond the scope of this docket. Without waiving such objection, CL&P notes that pursuant to applicable state law, the Siting Council has exclusive jurisdiction over the siting of transmission facilities and is expressly charged with determining appropriate buffer zones for such facilities. Issues relating to buffer zones were recently considered by the Siting Council in its April 7, 2005 decision in Docket No. 272, and there are currently appeals pending from that decision.

Public Act 04-246 required that any overhead portions of new transmission lines be within a buffer zone that protects the public health and safety, as determined by the Siting Council. This Act further provides that at a minimum, the existing right-of-way must serve as the buffer zone. CL&P has an existing guideline for determining suitable right-of-way widths for transmission lines, which guideline relies upon National Electrical Safety Code criteria and other criteria, in protection of the public health and safety. A copy of this guideline is attached. Local land-use authorities should generally recognize the boundaries of CL&P right-of-ways when acting on land-use proposals and understand that the property owner's development rights within the right-of-way are limited by legal easements.

INTRODUCTION – Standardization of transmission line designs enables concomitant standardization of line separations for the optimum use of right–of–way space. Given the large number of possible combinations of structure types, conductor sizes, and span lengths that can exist in lines that are side–by–side on a right–of–way, a standardized building block approach is desirable. Such an approach is summarized in this standard for use by right–of–way planners, engineers and designers of lines intended to operate at 69 kV and above. Line–to–line and line to right–of–way edge spacings can be separately determined and summed to find an overall standard width requirement, provided all lines are of standard design.

DESIGN OBJECTIVE – Standard spacings between transmission lines of various standard designs are presented in illustrative form. Approximate dimensional parameters for each standard design are a basic input to spacing determinations and are as provided on page **TRM 22.015**. Pages **TRM 22.016** and **TRM 22.017** then give dimensions for determining step–by–step the overall width of a right–of–way required to accommodate any number and combination of these standard transmission lines. The design objectives are to plan around and use these spacings wherever possible in order to minimize any need for modified or nonstandard designs and to maintain reasonable flexibility in the use of standard designs. Achievement of these objectives is cost effective. The maintenance of design flexibility also contributes to NU's ability to achieve a separate corporate objective, i.e., economically accommodating and/or encouraging compatible joint uses of R/W land.

BACKGROUND – Standard spacings between transmission lines on separate supporting structures and from such lines to right–of–way edges can only be derived if basic design parameters are first known. Such parameters are fixed with certainty only for standard line designs. The important parameters are structure type, average height of conductors above ground, conductor dimensions and tensions, phase configurations, and span lengths. Span lengths can be particularly important; for example, a forced reduction of the maximum span capability of a standard design reduces the flexibility of that design and increases its construction costs. Likewise, a spacing to a right–of–way edge that is only marginally less than desired can require the use of larger conductors, a conductor tension in excess of the standard tension for that conductor (ref. **TRM 18**), or a change in basic line configuration, each with a potentially significant cost penalty.

Right–of–way spacings for standard transmission line designs require attention to three primary considerations.

1. Code Electrical Clearances – All horizontal as well as vertical clearances of new lines must meet the provisions of the latest edition of the National Electrical Safety Code in Connecticut and the Department of Public Utilities Code in Massachusetts. Standard NU practice in meeting these provisions is to design to the stated clearances with conductor spans and flexible supporting structures deflecting sideways under the force of a 60 mph transverse wind. In determining the clearance to a right–of–way edge, a present or future man–made or natural object is assumed to exist at the most disadvantageous location in the maximum span and just off the right–of–way. A 115–kV conductor can get no closer than 10.67 feet and a 345–kV conductor can get no closer than 15.33 feet to this right–of–way edge when blown out by a 60 mph transverse wind. Likewise for separations between lines, a 115–kV conductor can get no closer than 5.67 feet and a 345–kV conductor can get no closer than 10.67 feet to any part of an adjacent line structure when blown out by a 60 mph transverse wind. For these determinations, the smallest conductor size of the design range is assumed because, at standard tensions, it blows out furthest.

2. Radio Interference (RI) Due To Conductor Corona – No consideration for radio interference due to conductor corona is necessary for standard transmission line designs at voltages under 200 kV. For standard 345–kV line designs, there are minimum spacings to the right–of–way edges as developed in Standard **TRM 13.3**, "AM Radio Noise Considerations – 345–kV Conductor Corona". In accordance with that standard, those spacing requirements can only be altered if other information as dictated in that standard permits Transmission Line Engineering to judge a specific change acceptable. RI spacings

generally exceed the electrical clearance requirement with 2–954 kcmil ACSR conductors, but the reverse is generally true for 2–1272 kcmil ACSR or larger conductors.

3. Electric Fields – Minimum spacings to the right–of–way edges shall be sufficient to limit the maximum value of 60 Hz electric field on the right–of–way edges to 1.6 kV per meter. For this determination, the maximum operating voltage, an approximate average conductor height, and flat, open terrain shall be assumed. As a practical matter, this electric field criterion could not be limiting with standard line designs for voltages below 345 kV.

APPLICATION DETAIL – The use of the spacings as referenced in the Design Objective paragraph is straightforward. Those spacings shall be generally applied by Transmission Line Engineering to all future115–kV and 345–kV transmission line construction employing the conductor sizes, maximum span lengths and tangent structure configurations illustrated on page **TRM 22.015**.

This standard is not retroactive. The engineering basis of these clearances is essentially unchanged from the past. However, some differences do exist.

Each structure type illustrated on page **TRM 22.015**, together with its dimensional assumptions, represents a standard transmission line design. Any other existing line designs are nonstandard. Spacings herein are provided only for standard transmission line designs and are intended to be generic to entire lines. Limited local variations are permissible only with the approval of Transmission Line Engineering.

Some spacings illustrated on page **TRM 22.016** are associated with one of the following markings: E, RI, or EF. These indicate that the critical factor in determining the spacing to a right–of–way edge is electrical clearance, radio interference, or electric fields respectively. No such markings are associated with standard 115–kV line designs because electrical clearance requirements always dictate the spacing.

Where E is limiting, no reduction can be made to the generic spacings associated with that standard line design except as might be allowed by use of larger than the minimum conductor sizes in the range for that standard design. A local reduction may be possible if local design dimensions allow and if the other criteria would still be satisfied. Where RI is limiting, reductions to generic spacings can be made only after a review in accordance with Design & Application Standard **TRM 13.3**. A generic or local spacing reduction may be possible, but only if the other criteria would still be satisfied. Where EF is limiting, no reduction can be made to the generic spacings. A local reduction can be considered, but only if the other criteria would still be satisfied.

Some spacings illustrated on page **TRM 22.017** are associated with superscripted notes. **NOTE 1** pertains to parallel line separations where the two lines involved have similar designs and span capabilities. The spacings between such lines are determined assuming a center span restriction, i.e., structures in the new line cannot be placed near the center of any span of an existing line. With designs of similar capability this restriction minimizes the space requirement and should not work an undue hardship on line design. Structures of such parallel lines can normally be located adjacent or nearly adjacent to one another. With other combinations of dissimilar parallel lines the spacing must be made sufficient to accommodate structures in each line adjacent to a center span in the other line.

NOTE 2 pertains to some combinations of parallel lines involving 345–kV structures for which the Department of Public Utilities Code in Massachusetts requires a greater line separation then is required between identical parallel lines in Connecticut.

All spacings illustrated on page **TRM 22.017** are based solely on the electrical clearance requirements detailed in the safety codes, and they are determined assuming the minimum conductor size of the range for each line design at its standard tension. Some savings might be possible by use of larger conductor sizes in the range (at standard tensions), but generic considerations for construction and maintenance access, for electric fields, for radio interference, and for guying at angle structures of some designs all combine to impose lower limits to these spacings. The standstill spacings between nearest phases of adjacent lines on page **TRM 22.017** are never less than 25 feet, 30 feet if a 345–kV line is involved.

DEVIATIONS – Where unusual siting constraints warrant consideration for slight deviations from standard spacings or slightly modified line designs, Transmission Line Engineering is responsible to evaluate design options on a case–by–case basis. In such cases the requirements of all applicable codes shall still be met.

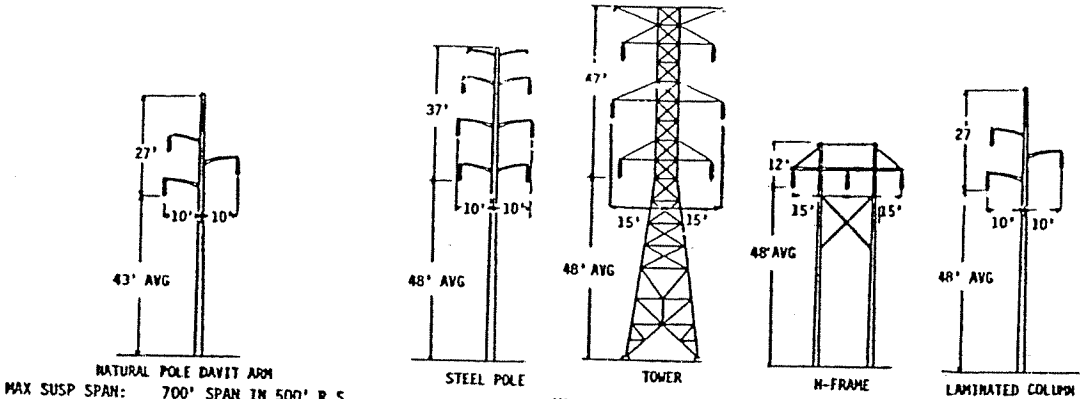
Such cases may involve only a local application problem, e.g., need for an unusually long span which normally requires an increase in spacings. Or the problem can be generic to an entire line, e.g., where some overriding advantage would be gained through a slight reduction in a standard spacing. Where feasible and justified, nonstandard adjustments to certain standard design parameters can be taken to permit reasonable deviations to standard spacings. Such adjustments include:

- reduced span lengths
- restrained suspension insulation
- larger conductors within the design range of a standard configuration.
- higher conductor tensions
- modified conductor configurations
- self–supporting angle structures in lieu of guyed angles
- center span restrictions (if not already included)
- reducing the transverse wind assumption where allowed by safety codes
- increased radio noise allowance in accordance with standard **TRM 13.3**

As a general rule, no deviations from standard spacings can be made without at the same time altering the limits of the parameters assumed in each standard line design. Consequently, the cost and any other impacts of design adjustments must be weighed against the benefits obtained by any slight reduction in the spacing requirement. All of the aforementioned adjustments can impose a cost penalty on line construction. And sometimes an adjustment made to solve a spacing problem introduces another design problem; i.e., there is a loss of design flexibility. When a spacing conflict is more than just local, these consequences become more serious. Transmission Line Engineering is responsible to carefully and cautiously consider these consequences in evaluating the feasibility or justification of any design adjustments made to allow a proposed deviation from a standard spacing.

Parameters For Standard Transmission Line Designs

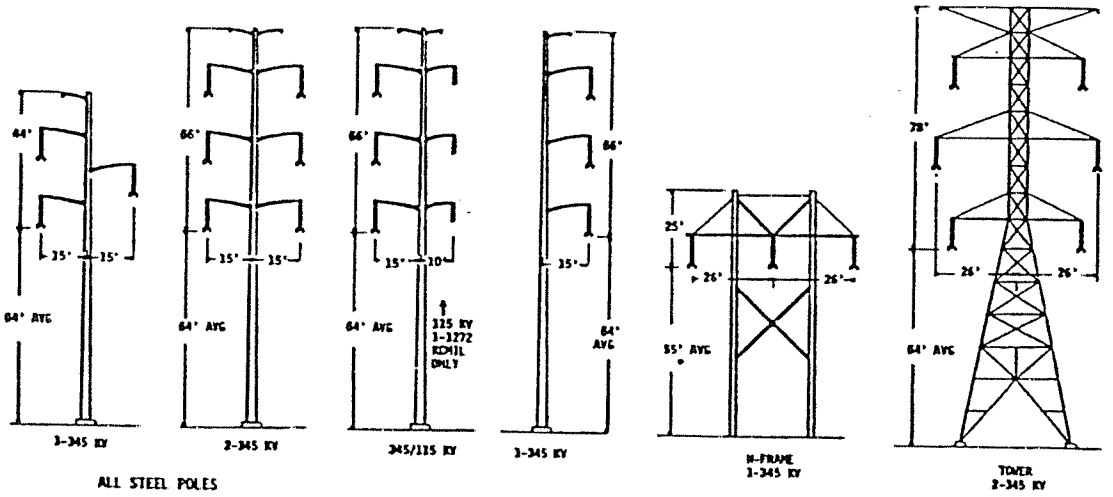
115–kV Line Designs



MAX SUSP SPAN: 700' SPAN IN 500' R.S.
CONDUCTOR RANGE: 556 THRU 795 KCMIL ACSR

MAX SUSP SPAN: 800' SPAN IN 600' R.S.
CONDUCTOR RANGE: 556 THRU 1272 KCMIL ACSR

345–kV Line Designs

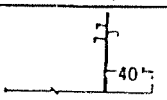
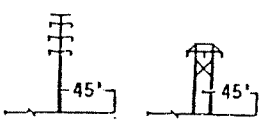
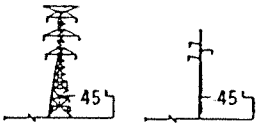
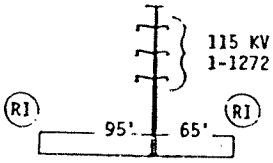
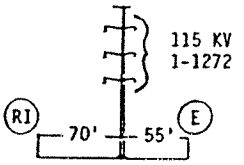
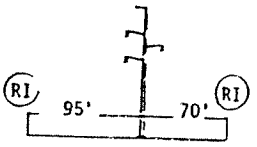
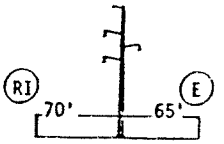
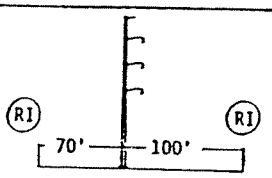
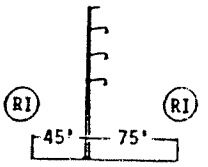
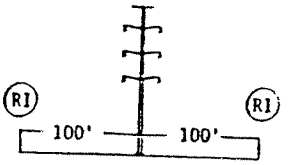
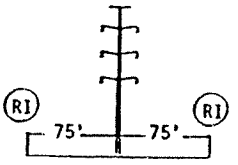
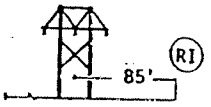
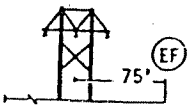
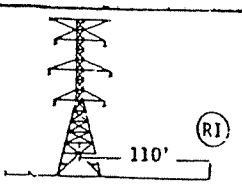
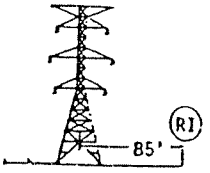


MAX SUSP SPAN: 1000' SPAN IN 800' R.S.
CONDUCTOR RANGE: 2-954 THRU 2-1272 KCMIL ACSR

*While the 345–kV H–Frame design is capable of matching span lengths with the other 345–kV designs, economics and other factors force the average span (and hence, average conductor height) to be less.

NOTE
1. All conductors at standard tensions per **TRM 18.**

Standard Spacings To Edge Of Right–Of–Way

115–kV Natural Pole, Davit Arm	Any Size Conductor Up To 1272 kcmil ACSR  NOTE: DESIGN LIMITED TO 795 KCMIL ACSR MAXIMUM	
115–kV Steel Pole, H–Frame, Tower, & Laminated Column	 	
345/115–kV (Composite Steel Pole	2 – 954 kcmil ACSR 	2 – 1272 kcmil ACSR 
345–kV Steel Pole Delta		
345–kV Steel Pole (One Circuit Only)		
345–kV Steel Pole (Two Circuits)		
345–kV Wood Pole H–Frame		
345–kV Tower (Two Circuits)		

RI = Radio Interfenence EF = Electric Field E = Electrical

ORIGINAL 5/10/82 APPROVED 1/2/94	**SPACING OF TRANSMISSION LINES ON RIGHTS–OF–WAY**			
	NORTHEAST UTILITIES	DESIGN & APPLICATION STANDARD	**TRM 22.016**	**1**

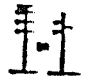
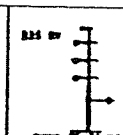
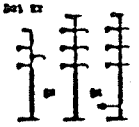
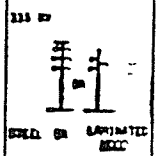
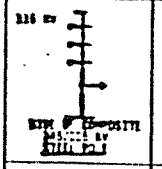
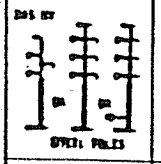
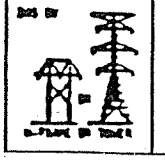
Standard Spacings Between Structure Centerlines Of Parallel Lines NOTES (3) And (4)

FROM \ TO	115 KV NATURAL WOOD	115 KV STEEL OR LAMINATED WOOD	115 KV TOWER OR H-FRAME	115 KV SIDE OF COMPOSITE 345/115 KV STEEL POLE	345 KV STEEL POLES	345 KV H-FRAME OR TOWER
115 KV NATURAL WOOD	45′	50′	50′	60′	75′	80′
115 KV STEEL OR LAMINATED WOOD	50′	50′	55′	(1) 55′	(1) 70′	(1) 70′ / (2) 75′
115 KV TOWER OR H-FRAME	50′	55′	55′	(1) 60′	(1) 75′	(1) 75′ / (2) 80′
115 KV SIDE OF COMPOSITE 345/115 KV STEEL POLE	60′	(1) 55′	(1) 60′	(1) 55′	(1) 70′	(1) 70′ / (2) 75′
345 KV STEEL POLES	75′	(1) 70′	(1) 75′	(1) 70′	(1) 75′	(1) 85′
345 KV H-FRAME OR TOWER	80′	(1) 70′ / (2) 75′	(1) 75′ / (2) 80′	(1) 70′ / (2) 75′	(1) 85′	(1) 85′ / (2) 95′

NOTES
(1) Design must conform to center span limitation.
(2) Required for lines in Massachusetts.
(3) All spacings assume minimum conductor sizes in the standard range and standard conductor tensions.
(4) Spacings to nearest portion of subtransmission lines shall be 5′ less than the electrical requirement to a R/W edge.

ORIGINAL	SPACING OF TRANSMISSION LINES ON RIGHTS–OF–WAY			
5/10/82				
APPROVED				
1/2/94				
	NORTHEAST UTILITIES	DESIGN & APPLICATION STANDARD	TRM 22.017	1

Minimum Spacings Between Structure Centerlines of Parallel Lines NOTES (1) and (4)

FROM \ TO						
	45'	45'	50'	45'	60'	70'
	45'	45'	50'	45'	60'	70'
	50'	50'	55'	50'	65'	75'
	45'	45'	50'	45'	60'	70'
	60'	60'	65'	60'	65'	75'
	70'	70'	75'	70'	75'	85'

NOTES

(1) For spacings reduced from TRM 22.017, structures must be placed side-by-side in the right-of-way.
(2) Spacings between 115-kV circuits are based on NU Accident Prevention Manual Table 2 (13 feet plus aerial bucket corridor of 12 feet = 25 feet).
(3) Spacings between 115-kV and 345-kV circuits, or between two 345-kV circuits are based on NU Accident Prevention Manual Table 2 (20 feet, plus aerial bucket corridor of 15 feet = 35 feet).
(4) Spacings to nearest portion of subtransmission lines shall be 5' less than the electrical requirement to a ROW edge.

Original	MINIMUM SPACING OF TRANSMISSION LINES ON RIGHTS-OF-WAY			
2/13/02				
Approved				
Dw Forest				
2/20/02	NORTHEAST UTILITIES	DESIGN & APPLICATION STANDARD	TRM 22.018	1

Witness: **Robert E. Carberry; Richard A. Soderman**
Request from: **Connecticut Center for Advanced Technology**

Question:
With numerous transmission and substation upgrades planned and under consideration, have the utilities come to any agreement to engage local government, regulators, community groups, and other local organizations to assist in proactive, comprehensive planning to identify and evaluate potential opportunities for energy facility development as part of the municipalities' plans of conservation and development?

Response:
CL&P has no "agreements" established to engage with local government, regulators, and other local organizations in the planning of energy facilities to serve electric load. Via the annual Forecast of Loads and Resources proceeding, CL&P provides the state government and all interested parties with information and data on future electrical energy demand, C&LM plans and forecasts, existing and planned supply resources, and existing and planned transmission facilities including listings of specific transmission and substation projects that may be needed during the forecast period. CL&P also initiates dialogue with municipal officials during the development of project applications, and including the statutorily specified municipal consultation that must precede the filing of an application for a new line or substation with the CT Siting Council. Some recent examples of this advance consultation are: 1) working with officials of the Town of Wilton on the assembly of a land parcel for a new Wilton Substation; 2) working with officials of the Town of Oxford to acquire a land parcel for a future Oxford Substation in anticipation of significant new load developments in that town, and 3) meeting with Town of Guilford officials regarding a need for a new substation.

Witness: **Lauren E. Gaunt**
Request from: **Connecticut Center for Advanced Technology**

Question:
Have individual circuits, distribution feeders, and substations been assessed for capacity, load, and unused capacity potentially available for application of distributed resources?

Response:
CL&P objects to this question because it relates predominantly to the siting of distribution system facilities and is therefore beyond the scope of this docket. Without waiving this objection, CL&P offers the following response:

Individual circuits, distribution feeders, and substations have not been assessed for capacity, load, and unused capacity potentially available for application of distributed resources other than when necessary to comply with the small generator interconnection process approved by the Connecticut Department of Public Utility Control in Docket No. 03-01-15, *DPUC Investigation into the Need For Interconnection Standards for Distributed Generation*.

Witness: Richard A. Soderman; Allen W. Scarfone
Request from: Connecticut Center for Advanced Technology

Question:
What are the typical costs associated with an interconnection study necessary for development of a generation unit: (1) above 5 MW and (2) between 10 KW and 5 MW?

Response:
CL&P objects to this question because it relates predominantly to generation interconnections and is therefore beyond the scope of this docket. Without waiving such objection, CL&P provides the following statement:

Under current ISO-NE rules (ISO-NE Planning Procedure 5-1 and Section I.3.9 of the ISO-NE tariff), generators in excess of 5 MW require extensive thermal, short circuit and stability analyses to determine their impact on the New England transmission system. Depending on the generator's size, its location and the voltage level at the system interconnection, the estimated costs associated with performing system impact studies could range from thousands of dollars to hundred of thousands of dollars. The costs are strictly dependent on the characteristics of the generator interconnection. The cost estimate for studies exclude the costs associated with the detailed design and engineering of interconnection facilities and the construction costs of such facilities. The costs for these facilities are dependent upon the results of the system impact study and are site specific.

Generators between 10 kW and 5 MW most likely will be interconnected to the distribution system. The costs for system impact studies for these units will be dependent on the actual size and location. These generators may not need to go through the ISO-NE process but still may be have significant impact on the distribution systems and study costs could be in the tens of thousands of dollars. The cost estimate for studies exclude the costs associated with the detailed design and engineering of interconnection facilities and the construction costs of such facilities. The costs for these facilities are dependent upon the results of the system impact study and are site specific.

Witness: **Richard A. Soderman; Allen W. Scarfone**
Request from: **Connecticut Center for Advanced Technology**

Question:
What would these interconnection study costs be if a full integration system study were undertaken?

Response:
Please see response to Data Request CCAT-01 Q-CCAT-007.

Witness: Richard A. Soderman; Allen W. Scarfone
Request from: Connecticut Center for Advanced Technology

Question:
Please outline the advantages and disadvantages of requiring a full integration interconnection study versus a minimum reliability interconnection study?

Response:
CL&P objects to this question because it relates predominantly to generation interconnections and is therefore beyond the scope of this docket. Without waiving such objection, CL&P provides the following statement:

This response assumes that a "full integration interconnection study" refers to the ISO-NE study practices as they existed prior to the FERC-mandated change to the new minimum interconnection standard in 1999. Under full integration study practices, generating plants are analyzed and facilities are then proposed to allow generator access to the grid with minimal restrictions for all local units, allowing all units to run simultaneously. However, under the new minimum interconnection standard in place today in New England, local generators are dispatched against other local units for access to the transmission grid. Under this procedure, facilities are not proposed so as to allow all local generators to be dispatched simultaneously. Generation in an area where there is limited transmission capability then compete for access to the grid, with the generator with the lowest bid price being permitted to operate. The advantage of the full integration method is that there is greater access to the transmission system with new facilities planned to support multiple generating stations. The disadvantages may include higher costs of interconnection and restricted output for existing generators during times of construction. Correspondingly, the disadvantage of minimum interconnection standards is the possible restriction on generator dispatch based on limited transmission capability. However, the advantages of this procedure may be lower facility costs for interconnection and more rapid completion of system impact studies when there are a number of generators concentrated in a small area.

Witness: Richard A. Soderman
Request from: Connecticut Center for Advanced Technology

Question:
Have the generators and/or utilities come to any agreement over the identification of the most appropriate technical mix of resources for conservation, demand response, generation, distributed generation, and transmission, or is there support for this mix to be driven entirely by the market?

Response:
CL&P is unaware as to whether generators have come to an agreement over the identification of the most appropriate technical mix of the resources cited in this question. In addition, CL&P has not come to an agreement with other utilities nor generators with respect to the identification of the most appropriate technical mix of the resources cited, other than as permitted by statute through its membership in the Energy Conservation Management Board (ECMB) or as is offered through its participation in ISO-NE's Regional System Planning (RSP) process. The ECMB provides guidance to the Department of Public Utility Control as to the nature and funding of conservation and load management programs in the state. These programs include demand resource programs. ISO-NE's RSP process identifies areas of reliability concern and the required resource needs that result and are intended to be considered by ISO-NE member state's in developing their energy plans.

Witness: Richard A. Soderman
Request from: Connecticut Center for Advanced Technology

Question:
Have the generation and/or the utilities come to any agreement over the identification of the most appropriate public and/or ratepayer funding levels for conservation, demand response, and renewable/clean generation?

Response:
CL&P is unaware as to whether generators have come to an agreement over the identification of the most appropriate public and/or ratepayer funding levels for conservation, demand response, and renewable/clean generation. With respect to whether CL&P has come to an agreement with other utilities or generators over the identification of the most appropriate public and/or ratepayer funding levels for conservation, demand response, and renewable/clean generation, CL&P is permitted by statute to be a member of the Energy Conservation Management Board (ECMB). The ECMB provides guidance to the Department of Public Utility Control as to the nature and funding of conservation and load management programs in the state. These programs include demand resource programs. The Connecticut Legislature establishes funding levels for conservation and renewable generation, including the amount of renewable generation that electric utilities are required to procure. It should be noted that CL&P has led efforts to prevent the Connecticut Legislature from redirecting conservation funds for other state purposes.

Witness: NO WITNESS
Request from: Connecticut Energy Advisory Board

Question:

(a) Please provide any forecast of peak loads and energy developed by CL&P's distribution planning department (i.e., as may be developed "by substation" using the forecast presented to the Siting Council and input from distribution planning regarding foreseeable load requirements). Please provide any other information the Company possesses or has access to regarding a forecast of peak loads that may facilitate an understanding of resource needs at specific locations on the Company's power delivery system.

(b) Please describe how CL&P's distribution planning department developed the forecasts of peak loads and energy requirements provided in response to Part (a), above.

(c) Please describe the relationship between the forecast submitted to the Siting Council in this docket and the forecast developed by the Company's distribution planning department.

(d) Please provide the historical peak loads and energy (across the last 5 years) at a level that corresponds to the forecast information provided in response to Part (a), above (i.e., by town or by substation, depending).

Response:

A response to this data request would require substantial data aggregation and since the information is related to the distribution system, which is not the subject of this proceeding, and it is not relevant to the company's forecast of loads and resources, CL&P respectfully declines to provide it.

Witness: Allen W. Scarfone; Charles R. Goodwin
Request from: Connecticut Energy Advisory Board

Question:

(a) Please provide the historical peak loads and monthly electric energy (on a "net electrical energy output" basis) for the past five years for (i) the 54 towns comprising the southwest Connecticut zone and (ii) the sixteen towns comprising the Norwalk-Stamford sub area.

(b) Please provide CL&P load data and, to the extent available, historical load data for other utilities that serve the two load zones identified in Part (a), above. If historical load data from other utilities is not available, (i) please provide CL&P's load data for these zones, (ii) indicate the portions of these zones where load data is not available to CL&P, and (iii) provide CL&P's best estimate of the historical loads for each zone. In responding to this information request, please provide the historical load data based on both actual metered loads and on a weather-normalized basis.

(c) Please provide a description of CL&P's weather-normalization methodology, as used in determining the load data provided in response to Part (b), above.

Response:

(a) The historical peak demand over the past five years for the Southwest Connecticut area and the Norwalk-Stamford sub-area are as follows:

Year	Southwest Connecticut MW	Norwalk-Stamford MW
2000	3001	1012
2001	3459	1188
2002	3458	1195
2003	3347	1151
2004	3208	1111

The CL&P loads reflected in these demand figures above are based on actual metered data. Other electric utility loads within these areas may be actual or estimated values.

CL&P does not routinely calculate the monthly electric energy for the 54-towns in the Southwest Connecticut area and the 14-towns in the Norwalk-Stamford sub-area.

(b) Page 2 of 3 provides data on total retail sales for the CL&P portions of the southwest Connecticut (SWCT) and Norwalk-Stamford sub-areas for the years 1995-2001. When the Company compiled these data, SWCT was defined differently so this exhibit includes only the CL&P portion of the original 52 towns defined as SWCT. See page 3 of 3 for a list of the CL&P towns in these sub-areas. The Company does not routinely collect sales (kWh) data or develop sales (kWh) forecasts for these sub-areas. Analyses were performed for Docket CSC 217, but once the need for the transmission projects was established, they were not updated. Weather normalized data for these sub-areas are not available. The Company believes that data for the other electric companies should be provided by those companies.

(c) As no weather normalization was done on these sub-areas, the request for a weather normalization methodology is not applicable.

	CL&P Portion of Norwalk-Stamford GWH	CL&P Portion of SWCT GWH
1995	3401	7740
1996	3502	7919
1997	3500	7932
1998	3553	8013
1999	3733	8362
2000	3734	8482
2001	3888	8665

CL&P Towns included in the Norwalk-Stamford Area

Darien
Greenwich
New Canaan
Norwalk
Redding
Ridgefield
Stamford
Weston
Westport
Wilton

CL&P Towns included in the SWCT Area

Beacon Falls
Bethany
Bethel
[illegible]ranford
[illegible]gewater
[illegible]ookfield
Cheshire
Danbury
Meriden
Middlebury
Monroe
Naugatuck
New Fairfield
New Milford
Newtown
Oxford
Prospect
Roxbury
Seymour
Sherman
Southbury
Waterbury
Watertown
Woodbury

Darien
Greenwich
New Canaan
Norwalk
Redding
Ridgefield
Stamford
Weston
Westport
Wilton

Witness: **Allen W. Scarfone**
Request from: **Connecticut Energy Advisory Board**

Question:
Please provide a copy of the 2002 study of loads in the Norwalk-Stamford and Southwest Connecticut areas that was developed to support the transmission facility application to the Siting Council in Docket No. 272. Please also provide an explanation of any information the Company possesses or has access to that could influence the study if it were performed today.

Response:
The table below contains the ISO-NE projected coincident summer peak loads for the CL&P substations within the Norwalk-Stamford and Southwest Connecticut areas that are representative of a forecasted New England load of 27,700 MW and is used to support the transmission application to the Connecticut Siting Council in Docket No. 272. To acquire the total load in the Norwalk-Stamford and Southwest Connecticut areas, load from The United Illuminating Company, the Connecticut Municipal Electric Energy Cooperative, and the Town of Wallingford Electric Division must be included.

Bus Name	MW
BALDWINA13.8	30.2
BALDWINB13.8	30.3
BATES RK13.8	62.8
BEACON F13.8	59.9
BRANF RR 115	4.9
BRANFORD27.6	82.4
BULLS BR27.6	17.9
BUNKER H13.8	66.1
CANAL50 23.0	27.7
CARMHILL23.0	14.6
CDR HGTS13.2	72.6
COMPO 13.8	39.0
COS COB 115	13.7
COS COB 27.6	130.7
DARIEN 13.8	50.5
DEVON 115	18.2
FLAX HIL13.8	48.6
FREIGHT 13.8	33.9
GLNBROOK13.2	91.5
HAN 13 A13.8	31.1
HAN 28 A27.6	22.4
MIDDLRIV13.8	78.8
NEWTOWN 13.8	39.7
NOERA 13.8	53.6
NOERA 4.80	8.1
NORWALK 13.8	79.4
NORWALK 27.6	116.0
NORWALK 4.80	7.4
PEACEABL13.8	34.4
RDGEFLD 13.8	54.5
ROCK RIV13.8	56.8
SASCO CR 115	12.9
SHAWSHIL13.8	33.6
SHEPAUG 69.0	0.2
SNDYHOOK23.0	10.6
SO.END13.2	104.7
SO.NAUG 13.8	38.5
SOUTHGTN13.8	44.3
SOUTHGTN27.6	36.0
STEVENSN27.6	27.5
STONY HL13.8	41.4
TODD 13.8	34.1
TOMAC 27.6	35.4
TRIANGLA13.8	74.5
TRIANGLB13.8	63.0
W.BRKFLD13.8	42.2
WATERSDE13.2	70.9
WESTON A27.6	25.9
WESTON B27.6	33.0
CL&P TOTALS	**2206.4**

Shading indicates load that is also in the Norwalk-Stamford area

The ISO-NE 2005-2014 Forecast Report of Capacity, Energy, Loads and Transmission contains a table under Section I.8 that identifies the seasonal peak load forecast distributions for New England. The distributions in expected seasonal peak load levels are over a range of variable weather conditions. At the time the transmission planning studies were performed in support of the Docket No. 272 application they utilized a New England regional peak demand of 27,700 MW that was reflective of a 90/10 scenario. The ISO-NE updates to the regional load forecast directly impact transmission planning studies and the timing of new transmission reinforcements. Higher forecasted load demand by ISO-NE can advance new facility needs and in-service dates.

Witness: Allen W. Scarfone
Request from: Connecticut Energy Advisory Board

Question:
With respect to the projects listed in Table V-5 of the Company's filing to the Siting Council in the forecast proceeding: (a) For each transmission project listed, please indicate whether the project is a subcomponent of a larger transmission project that (i) has been, or (ii) will be filed with the Siting Council. In each instance, identify the larger transmission project. (b) For each transmission project listed, please provide a "best estimate" of the likely in-service date for the project, (c) For each estimated in-service date for each transmission project (i.e., as provided in response to Part (b), above), please identify the source of that estimate and provide an assessment of the degree to which the in-service date identified is relatively certain or uncertain. (d) For each transmission project listed, provide the most recent planning study that has been conducted by or for CL&P or ISO New England which establishes CL&P's current assessment of the need for each project. (e) If the load forecast information used in any of the studies provided in response to Part (d), above, is different from the load forecast filed by CL&P in this proceeding, please describe the load forecasting basis for the study.

Response:
a, b, c, and d) Please see the attachment.

e) Please see the CL&P 2005 Forecast of Loads and Resources for 2005 - 2014 report dated March 1, 2005, Chapter V, Section F, sub-category titled "Demand Forecasts".

TABLE V-5: Other Proposed Transmission Circuits in Connecticut
(as of January 1, 2005)

Transmission Project	Area	Voltage (kV)	Length (mi)	In-Service Date	a: Subcomponent of larger transmission project	a(i) and a(ii): Filed with CSC	b: "Best estimate" of in-service date	c: Assessment of in-service date	d: Planning study reference
Tunnel S/S, Preston – Ledyard Jct., Ledyard (upgrade to 115-kV)	Eastern	69	8.5	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Ledyard Jct., Ledyard – Gales Ferry S/S, Ledyard (upgrade to 115-kV)	Eastern	69	1.6	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Gales Ferry S/S, Ledyard – Montville Station, Montville (upgrade to 115-kV)	Eastern	69	2.4	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Ledyard Jct., Ledyard – Buddington S/S, Groton (CMEEC), (upgrade to 115-kV)	Eastern	69	4.7	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Card S/S, Lebanon – Wawecus Jct., Bozrah (rebuild)	Eastern	115	12.7	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Card S/S, Lebanon – Lake Road Station, Killingly (new)	Eastern	345	29.2	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Lake Road Station, Killingly – West Farnum Road S/S, R.I. (National Grid) (new)	Eastern	345	7.6	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Norwalk Harbor Station, Norwalk - Glenbrook S/S , Stamford (new)	Norwalk-Stamford	115	9.2	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
South End S/S, Stamford – Tomac S/S, Greenwich (reconductor)	Norwalk-Stamford	115	0.4	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Manchester S/S, Manchester – Hopewell S/S, Glastonbury (reconductor)	Middletown	115	7	2006	Yes*	2005	2006	Planned construction	ISO-NE RTEP04 Section 15.4
East Meriden S/S, Meriden – North Wallingford S/S, Wallingford (reconductor)	Middletown	115	0.5	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Schwab Jct., Wallingford – Colony S/S, Wallingford (CMEEC) (rebuild)	Middletown	115	1.5	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Manchester S/S, Manchester – Barbour Hill S/S, South Windsor (rebuild)	Manchester-Barbour Hill	115	7.5	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Southington S/S, Southington – Schwab Jct., Wallingford (rebuild)	Southwestern	115	6.3	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Oxbow Jct., Haddam – Beseck Jct., Wallingford (rebuild)	Southwestern	115	14.7	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Colony S/S, Wallingford (CMEEC) - North Wallingford S/S, Wallingford (CMEEC) (rebuild)	Southwestern	115	2.4	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Frost Bridge S/S, Watertown - Bunker Hill S/S, Waterbury (reterminate)	Southwestern	115	3.9	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Frost Bridge S/S, Watertown – Walnut Jct., Thomaston (new)	Northwestern	115	6.4	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4
Frost Bridge S/S, Watertown - Campville S/S, Harwinton (rebuild)	Northwestern	115	10.3	TBD	No	No	2010-2020	Reviewed annually	ISO-NE RTEP04 Section 15.4

* This project is part of the Middletown Area Reliability Project.

Witness: NO WITNESS
Request from: Connecticut Energy Advisory Board

Question:

(a) Please provide the most recently completed distribution work plan (i.e., a plan that describes the Company's current plans for distribution system improvements).

(b) Please provide a current list of the capital projects for distribution facilities (e.g., a "five year plan") that the Company plans to undertake.

(c) Please provide a copy of all of the Company's compliance filings submitted to the DPUC relative to capital projects (for distribution facilities) pursuant to orders in Docket No. 03-07-02.

(d) Please provide a map that identifies the location (i.e., by town) of each distribution substation.

Response:

A response to this data request would require substantial data aggregation and since the information is related to the distribution system, which is not the subject of this proceeding, and it is not relevant to the company's forecast of loads and resources, CL&P respectfully declines to provide it.

Witness: **John H. Mutchler**
Request from: **Connecticut Energy Advisory Board**

Question:
Please confirm that the contributions from conservation and load management programs that the Company identifies in its F-2005 filing are the same as those that are anticipated to result (i.e., in terms of capacity and energy contributions) from the programs and budget approved by the DPUC in the Final Decision in Docket No. 04-11-01 dated March 30, 2005. If they are not identical, please identify and explain all differences.

Response:
Table III-1 and III-2 in the F-2005 filing generally include the contributions from conservation and load management programs approved by the DPUC in the Final Decision in Docket No. 04-11-01 dated March 30, 2005. However, in that Decision the Department of Public Utility Control ("Department") also approved the allocation of an additional $5.7 million made available as a result of a prior adjustment to the legislatively mandated conservation fund mil rate due to securitization. As the allocation of these funds had not been approved by the Department at the time of the F-2005 filing, they were not included in any of the conservation program planning models used for input to the forecast. Also not known at the time, and therefore not included in the F-2005 forecast Tables III-1 and III-2, are the contributions resulting from the allocation of approximately $3 million recently made available to the programs following the Department's Decision in Docket 03-11-01RE01, "DPUC Review of CL&P and UI Conservation and Load Management Plan for Year 2004 - Interest Rate Modification Request" dated April 21, 2005. While the allocation of the additional $3 million has been reviewed and approved by the Energy Conservation Management Board, it has not yet been approved by the Department. Development of new energy savings goals resulting from the approximate $8.7 of additional program funding described above have not been completed.

Witness: Charles R. Goodwin
Request from: Connecticut Energy Advisory Board

Question:

(a) Please confirm that (i) existing cogeneration facilities that result in load and energy reductions are incorporated in the Company's load and energy forecasts, and (ii) load and energy offsets from potential new cogeneration facilities are not so incorporated.

(b) Please provide a tabulation of the load and energy forecast that includes the load information before and after the existing cogeneration facility load and energy reductions referred to in Part (a), above.

Response:

(a) Since the forecast is calibrated to actual sales for 2003, the loss of load due to existing cogeneration units is reflected, though not quantified, in the forecast period. The forecast assumes that there will be no new units brought online in the forecast period.

(b) The actual loads produced by existing cogeneration units are not quantified, thus a table showing load information before the associated reductions is not available.

Witness: **Allen W. Scarfone**
Request from: **Connecticut Energy Advisory Board**

Question:
Please confirm that, for planning purposes, transmission facilities are those that are 69 kV and above, and distribution facilities fall below that level.

Response:
CL&P's electric facilities rated 69 kV and above are classified as transmission and those facilities that are rated below 69 kV are classified as distribution.

Witness: NO WITNESS
Request from: Connecticut Energy Advisory Board

Question:
Please provide any studies the Company has performed or has access to that provide information or analysis on how distribution system planners may consider distributed generation ("DG") options together with traditional infrastructure solutions.

Response:
A response to this data request would require substantial data aggregation and since the information is related to the distribution system, which is not the subject of this proceeding, and it is not relevant to the company's forecast of loads and resources, CL&P respectfully declines to provide it.

Witness: **Charles R. Goodwin; John H. Mutchler**
Request from: **Connecticut Energy Advisory Board**

Question:

(a) Please confirm that the forecast peak loads identified in Table II-2 of the Company's filing to the Siting Council have been reduced to reflect savings contributions from previously installed conservation and load management measures (i.e., those installed through December, 2004), but not those measures that will be installed in the future (i.e., programs and program measures approved by the DPUC in its March 30, 2005 Decision in Docket No. 04-11-01).

(b) In relation to Part (a), above, please provide a table that depicts (i.e., in separate rows or columns):
(i) the peak load forecast,
(ii) the reductions associated with previously installed measures,
(iii) the reductions associated with measures assumed to be implemented in the future, and
(iv) the resulting peak load as reduced by all conservation and load management measures.

Response:

(a) Previously installed conservation measures through December 2003 are reflected in the forecast peak loads identified in the March 2005 Table II-2. The forecasted peak loads in Table II-2 are taken from last year's forecast that was filed on March 1, 2004 and do include projected reductions from conservation measures per the 2004 Conservation and Load Management Plan filed on November 3, 2003 in Docket 03-11-01. The forecast peak loads identified in the March 2005 Table II-2 do not include projected reductions from conservation measures per the 2005 Conservation and Load Management Plan filed on November 22, 2004 in Docket 04-11-01 and approved by the DPUC on March 30, 2005. Conservation measures included in the Company's forecast are exclusive of ISO load management programs and the Company's demand reduction programs.

(b) Since the peak load forecast shown in Table II-2 and the conservation data included in Chapter 3 are based on different vintages (e.g., Chapter 3 includes reductions resulting from conservation measures projected to be installed as part of the 2005 Plan), the requested table would be inappropriate. However, all of the requested data for last year's forecast can be found in Chapters 2 and 3 of the 2004 Forecast of Loads and Resources, which was filed on March 1, 2004.

Witness: **John H. Mutchler**
Request from: **Connecticut Energy Advisory Board**

Question:
Please refer to the DPUC's Final Decision in Docket No. 04-11-01 dated March 30, 2005: (a) Please provide any "forecasted peak demand and energy use for SWCT and the rest of Connecticut, and the impact on growth due to conservation programs" (see Decision at 18). (b) Please identify the anticipated response (i.e., in terms of demand and energy savings for SWCT and Connecticut) from the $1 million in 2004 funds added to the Company's proposed load response budget (see Decision at 20). (c) Please provide an estimate of the contributions from load response programs that are likely to reflect "significantly higher participation in the years ahead" after consideration of ISO-NE program support and performance (see March 30, 2005 Decision at 20).

Response:
(a) Please see Q-CEAB-017 for the last available forecast. See also Q-CEAB-002.

(b) It is anticipated that the $1 million in 2004 funds added to the Company's proposed load response budget in the Departments March 30, 2005 Decision in Docket 04-11-01 will result in 12.5MW of additional ISO load response demand savings.

(c) In its March 30, 2005 Decision in Docket 04-11-01, the Department stated "[t]he Companies and the ECMB shall consider the issue of ISO-NE program support and performance when 2006 budgets and programs are developed and set goals for significantly higher participation in the years ahead". The Department, in its Decision, has requested the Companies and the ECMB give consideration to the "issue of ISO-NE program support and performance" during the 2006 program development process. The companies have only just begun the 2006 budget and program development process referred to in the Decision. This process is a multi-month, reiterative process that is scheduled to be completed in the fourth quarter of 2005. As such, estimates of the contributions from load response programs in 2006 have not yet been developed.

Witness: Charles R. Goodwin
Request from: Connecticut Energy Advisory Board

Question:
Please provide a copy of CL&P's 2005 Economic and Load Forecast (as noted on page II-1 of CL&P's March 1, 2005 filing to the Siting Council) and all updates to the forecast that become available.

Response:
As the Company indicated in its March 1, 2005 filing, the sales forecast contained in this filing is substantially identical to the forecast filed on March 1, 2004, and that a new forecast would be developed later this year. Our current schedule calls for senior management review later this year. However, please note that transmission planning is based on the ISO load forecast, not CL&P's. To the extent the CSC needs the CL&P load forecast for its final report in this docket, the Company is willing to provide it after senior management completes its review.

Witness: **Allen W. Scarfone; Charles R. Goodwin**
Request from: **Connecticut Energy Advisory Board**

Question:
(a) Please provide a summary of the Company's 5-year history of winter peak loads.

(b) Please provide the most recent forecast of winter peak loads on CL&P's system.

(c) Please provide a copy of all analyses performed by the Company, or that the Company has access to, that discuss the reliability of Connecticut's electric system during the winter months as affected by generating units fired by natural gas.

Response:
(a) Please see page 2 of 2.

(b) Please see page 2 of 2.

(c) Reliability assessments performed by ISO-NE of the Connecticut electric system during winter months that could be affected by the availability of natural gas can be obtained from the ISO-NE web site at the following address:
http://www.iso-ne.com/special_studies/January_14_-_16_2004_Cold_Snap_Reports.

	CL&P Winter Peak (MW)
History	
2000	4014
2001	3841
2002	4360
2003	4550
2004	4596
Forecast	
2005	4554
2006	4610
2007	4673
2008	4755
2009	4854
2010	4963
2011	5084
2012	5218
2013	5336
2014	5456

The Connecticut Light and Power Company
Docket No. F-05

Data Request CEAB-01
Dated: 05/25/2005
Q- CEAB-014

Witness: **Allen W. Scarfone**
Request from: **Connecticut Energy Advisory Board**

Question:
Please provide hourly loads by substation for the five years ended December 2004.

Response:
The attached compact disc contains CL&P's hourly loads by substation for the 5 years between January 2000 and December 2004.

The data may contain some gaps due to metering malfunctions or telecommunication problems.

Witness: **Charles R. Goodwin**
Request from: **Connecticut Energy Advisory Board**

Question:
Please provide peak day loads (both summer and winter) broken down by major electric end-use category.

Response:
Please see page 2 of 2 for forecasted summer and winter peaks by customer class and major end-use category.

Coincident Peak Load By [illegible]s and Major End Use
CL[illegible]
MW

Summer

	RESIDENTIAL					COMMERCIAL								
	Heating	Cooling	Lighting	Other	Total	Heating	Cooling	Lighting	Other	Total	Industrial	Street-lighting	Railroad	Total CL&P Peak
2005	0	1209	56	1082	2347	0	929	506	912	2347	575	2	17	5288
2006	0	1195	55	1136	2386	0	955	511	960	2426	576	2	17	5407
2007	0	1179	53	1194	2426	0	976	510	975	2461	575	2	17	5481
2008	0	1162	51	1258	2471	0	997	510	989	2496	576	2	17	5562
2009	0	1146	50	1331	2527	0	1019	513	1011	2543	578	2	17	5667
2010	0	1130	51	1408	2589	0	1044	521	1029	2594	585	2	17	5787
2011	0	1116	51	1496	2663	0	1072	527	1046	2645	592	2	17	5919
2012	0	1101	52	1590	2743	0	1096	539	1066	2701	601	2	17	6064
2013	0	1085	54	1694	2833	0	1121	546	1082	2749	608	2	17	6209
2014	0	1068	56	1780	2904	0	1145	553	1106	2804	617	2	17	6344

Winter

	RESIDENTIAL					COMMERCIAL								
	Heating	Cooling	Lighting	Other	Total	Heating	Cooling	Lighting	Other	Total	Industrial	Street-lighting	Railroad	Total CL&P Peak
2005	754	0	286	1390	2430	367	0	432	823	1622	444	24	34	4554
2006	747	0	276	1446	2469	372	0	430	836	1638	444	25	34	4610
2007	742	0	266	1505	2513	377	0	430	850	1657	444	25	34	4673
2008	735	0	262	1573	2570	382	0	432	866	1680	446	25	34	4755
2009	728	0	265	1643	2636	387	0	439	882	1708	451	25	34	4854
2010	723	0	268	1724	2715	394	0	443	896	1733	456	25	34	4963
2011	716	0	271	1810	2797	398	0	453	914	1765	463	25	34	5084
2012	711	0	284	1905	2900	404	0	458	928	1790	469	25	34	5218
2013	704	0	293	1985	2982	409	0	463	947	1819	475	26	34	5336
2014	697	0	304	2072	3073	411	0	469	961	1841	482	26	34	5456

CL&P Docket No. F-05
Data Request CEAB-01
Dated 05/25/2005
Q-CEAB-015
Page 2 of 2

Witness: **Charles R. Goodwin**
Request from: **Connecticut Energy Advisory Board**

Question:

(a) Please provide the electricity price inputs to the Company's load forecast filed on March 1, 2005, and for the Company's 2005 Economic and Load forecast.

(b) Please provide all studies of (i) electricity prices and (ii) electricity price elasticity considered by the Company in developing the electricity price inputs provided in response to Part (a), above.

(c) Please provide any assessments made by or for CL&P regarding the affect on CL&P's forecast of peak loads and energy that would result if the military installation closure recommendations for issued in early May 2005 were to be implemented. Please include both the direct effects of the base closures and the indirect effects on the Connecticut economy.

Response:

(a&b) The forecast that was filed on March 1, 2005 was developed in January 2004. At that time there was much uncertainty about future generation prices and charges such as FMCC and LICAP. Furthermore the Company's electric prices had been stable or decreasing in real terms for two decades, so there was additional uncertainty about how customers would react to higher prices. Therefore, in the electric demand forecast, the Company assumed that electricity prices would grow at the rate of inflation throughout the forecast period and electric price elasticities were irrelevant. The 2005 Forecast, including results, assumptions and other inputs to the models, is not yet available.

(c) Page 2 of 2 contains a table showing the potential CL&P sales and summer peak reductions resulting from the closure of the Groton sub base. The potential impacts of other, less significant closings have not been analyzed. The sub base is served by Groton Municipal Electric so there are no direct impacts on CL&P. However, CL&P would experience significant indirect impacts from the base closure, as would Groton Municipal Electric, Norwich Municipal Electric and Rhode Island, all of which are economically linked to the sub base. Therefore, there is considerable uncertainty about the size of the impacts, the timing of the impacts and where the impacts will geographically occur.

The annual losses do not reflect any potential gains from redevelopment of the Groton sub base, although these gains would be minimal in the near term because the base cannot be developed until it is vacated in 2011. Also, new facilities may be difficult to develop because significant environmental problems must be remediated at the site and ship yards have limited usages, unlike airfields or training facilities.

Please note that this analysis only estimates the impact of the potential base closure for CL&P's service area. The Company has not estimated the potential cumulative impact on the Connecticut economy.

Annual CL&P GWh Sales Losses From the Potential Closure of the Groton Sub Base

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Worst Case	0	-2	-4	-17	-19	-32	-73	-73	-73	-73
Best Case	0	0	-1	-3	-4	-6	-14	-56	-56	-56
Middle Case	0	-1	-2	-8	-9	-15	-34	-67	-67	-67

Annual CL&P MW Summer Peak Losses From the Potential Closure of the Groton Sub Base

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Worst Case	0	-0.4	-1	-3	-4	-7	-15	-15	-15	-15
Best Case	0	0	-0.2	-1	-1	-1	-3	-11	-11	-11
Middle Case	0	-0.2	-0.4	-2	-2	-3	-7	-14	-14	-14

Witness: **Charles R. Goodwin**
Request from: **Connecticut Energy Advisory Board**

Question:
Please provide disaggregations of (a) the load forecast included in the March 1, 2005 filing to the Siting Council and (b) the 2005 Economic and Load forecast by customer class (e.g., residential, commercial, industrial, other) and by end use. Provide these disaggregations for (i) CL&P and for southwest Connecticut and (ii) the Norwalk-Stamford zones.

Response:
Page 2 of 5 is a table which shows the load forecast by customer class and major end use, consistent with the forecast filed on March 1, 2005. The 2005 Forecast is not yet available. Also, CL&P does not routinely perform sub-area analyses on either a historic or forecast basis. However, as part of the Phase 1 Hearings in Docket No. 217, *Plumtree - Norwalk* 345-kV, a response to an interrogatory was filed that contained forecasted total retail sales (GWH) and peak (MW) for each of the sub-areas. Please see pages 3 - 5 for the response to OCC-01, Q-OCC-001. An update to this forecast is not available as these analyses were only performed for Docket 217. End-use data are not available for the sub-areas.

Loads By Class ar ajor End Use
CL
GWH

	RESIDENTIAL					COMMERCIAL					INDUSTRIAL								
	Heating	Cooling	Lighting	Other	Total	Heating	Cooling	Lighting	Other	Total	Cooling	Lighting	Other	Total	Street-lighting	Railroad	Total Retail Billed Sales	Losses and Unaccounted For	Output
2005	1363	643	668	7810	10485	679	809	2459	6104	10051	402	298	2912	3611	106	193	24446	1501	25947
2006	1355	636	649	8023	10663	692	834	2473	6193	10191	404	281	2911	3597	107	193	24750	1618	26368
2007	1346	627	627	8339	10940	702	851	2473	6335	10360	407	264	2936	3607	108	193	25208	1530	26738
2008	1338	618	604	8625	11186	712	868	2473	6444	10497	410	247	2952	3608	109	194	25593	1632	27226
2009	1330	610	595	8909	11444	721	887	2485	6545	10639	414	233	2972	3619	109	193	26003	1632	27636
2010	1322	602	602	9255	11781	731	910	2523	6668	10832	420	232	3012	3664	109	193	26579	1668	28247
2011	1314	594	609	9628	12145	740	933	2560	6790	11024	427	230	3057	3714	110	193	27186	1701	28887
2012	1306	586	616	10067	12575	749	955	2596	6942	11242	433	229	3111	3773	111	194	27894	1762	29657
2013	1298	578	646	10469	12990	758	977	2631	7036	11402	440	227	3144	3811	111	193	28507	1796	30303
2014	1288	569	667	10925	13449	766	998	2665	7160	11589	446	229	3188	3863	112	193	29207	1848	31054

CL&P Docket No F-05
Data Request CEAB-01
Dated 05/25/2005
Q-CEAB-017
Page 2 of 5

CL&P Forecast
Consistent with the 2002 Long-Run Forecast, Filed with the Connecticut Siting Council March 1, 2002

CLP Docket No. 217
Data Request OCC-01
Dated 02/11/2002
Q-OCC-001
ATTACHMENT A

	Residential Sales (GWH)	Commercial Sales (GWH)	Industrial Sales (GWH)	Streetlighting Sales (GWH)	Railroad Sales (GWH)	Total Retail Sales (GWH)	Summer Peak Load (MW)
2002	9589	9667	3916	110	173	23455	4757
2003	9643	9769	3869	112	176	23568	4780
2004	9794	9944	3870	114	178	23899	4826
2005	9823	10074	3861	114	178	24050	4856
2006	9872	10217	3856	116	179	24240	4887
2007	9959	10419	3884	116	179	24557	4938
2008	10074	10710	3935	118	179	25017	5004
2009	10136	10934	3964	119	179	25332	5063
2010	10230	11178	4002	120	179	25709	5123
2011	10322	11397	4037	121	179	26057	5169
2012	10447	11629	4089	123	179	26468	5225
2013	10514	11795	4122	123	179	26733	5270
2014	10609	11991	4178	125	179	27081	5316
2015	10702	12181	4233	126	179	27420	5364
2016	10835	12413	4302	127	179	27856	5414
2017	10941	12610	4351	128	179	28209	5485
2018	11080	12931	4406	129	179	28724	5570
'9	11218	13238	4448	130	179	29214	5658
J	11406	13565	4503	132	179	29785	5745

CLP Docket No. 217
Data Request OCC-01
Dated 02/11/2002
Q-OCC-001
ATTACHMENT B

Western Connecticut Forecast
Consistent with the 2002 Long-Run Forecast, Filed with the Connecticut Siting Council March 1, 2002

	Retail Sales - Exluding Railroad (GWH)	Retail Sales - Including Railroad (GWH)	Peak Forecast (MW) Based on Actual 2001 Peak Day Weather	Peak Forecast (MW) Based on Average Historic Peak Producing Weather (1970 - 2000)
2002	15367	15540	3389	3127
2003	15466	15642	3414	3150
2004	15677	15855	3455	3187
2005	15767	15945	3473	3204
2006	15888	16068	3497	3227
2007	16161	16340	3527	3253
2008	16305	16484	3568	3292
2009	16461	16640	3598	3319
2010	16662	16841	3635	3353
2011	16847	17026	3665	3381
2012	17061	17241	3698	3412
2013	17219	17398	3728	3439
2014	17409	17588	3757	3466
2015	17597	17776	3789	3496
2016	17825	18005	3821	3525
2017	18021	18200	3863	3564
2018	18282	18461	3909	3606
2019	18535	18714	3958	3652
2020	18823	19002	4005	3694

lc. -Stamford Forecast
:onsistent with the 2002 Long-Run Forecast, Filed with the Connecticut Siting Council March 1, 2002

CLP Docket No. 217
Data Request OCC-01
Dated 02/11/2002
Q-OCC-001
ATTACHMENT C

	Retail Sales - Exluding Railroad (GWH)	Retail Sales - Including Railroad (GWH)	Peak Forecast (MW) Based on Actual 2001 Peak Day Weather	Peak Forecast (MW) Based on Average Historic Peak Producing Weather (1970 - 2000)
2002	5345	5436	1216	1122
2003	5386	5479	1227	1132
2004	5475	5569	1246	1149
2005	5508	5602	1252	1155
2006	5550	5646	1261	1163
2007	5636	5731	1271	1173
2008	5706	5801	1287	1187
2009	5766	5861	1298	1197
2010	5840	5935	1312	1210
2011	5909	6004	1322	1220
2012	5988	6084	1334	1231
2013	6042	6137	1344	1240
2014	6109	6204	1354	1249
2015	6174	6270	1364	1259
	6257	6352	1375	1268
2017	6325	6421	1390	1282
2018	6425	6520	1407	1298
2019	6521	6616	1426	1315
2020	6630	6726	1443	1331