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Utilities System

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Caruso*

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**ORIGINAL**

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June 26, 2008

Mr. Daniel Caruso  
Chairman  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

**RECEIVED**  
JUN 26 2008

CONNECTICUT  
SITING COUNCIL

Re: Docket No. F-08 - Connecticut Siting Council Review of 2008 Forecasts of Electric Loads and Resources

Dear Mr. Caruso:

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

Response to CSC-01 Interrogatories dated 06/12/2008  
CSC-001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012

Very truly yours,

Christopher R. Bernard  
Manager  
Regulatory Policy - Transmission  
NUSCO  
As Agent for CL&P

cc: Service List

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-001  
Page 1 of 1

**Witness:** Robin E. Lewis  
**Request from:** Connecticut Siting Council

**Question:**

On page 2 of the Connecticut Light and Power Company's (CL&P) 2008 Forecast of Electric Loads and Resources (CL&P Forecast), CL&P notes that its forecast "does not include reductions due to ISO-NE's load response program." Explain why.

**Response:**

The Company's previous peak forecasts did not include a reduction due to the ISO-NE's load response program mainly due to the model used at the time. The model used in prior peak forecasts was developed by taking forecasted annual sales by end use and spreading it to the 8,760 hours in a year using end-use load profiles. The monthly peaks were the maximum loads in each month from this hourly forecasted load file. The hourly load shape associated with the ISO-NE load response program was not available to subtract from the base hourly load forecast and the peak impacts were relatively small.

The Company has recently switched its peak model to a regression model, thus it would now be possible to adjust the model-produced peaks to account for additional programs not already included in the trend forecast. The Company will do so in future forecasts.

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-002  
Page 1 of 1

Witness: David A. Errichetti  
Request from: Connecticut Siting Council

Question:  
Explain the decline in reserves on page 10 of the CL&P Forecast.

Response:  
As noted on page 9 of CL&P's Forecast, the decline in reserves on page 10 of CL&P's Forecast reflect purchase power agreements ending. CL&P does not assume these purchase power agreements will be renewed automatically, and thus the resources underlying these purchase power agreements will be free to enter into new arrangements with other parties or directly participate in the New England wholesale electricity market.

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-003  
Page 1 of 1

Witness: Joseph R. Swift  
Request from: Connecticut Siting Council

**Question:**

On Table 3-1 (Summer Impact) on page 16, explain the annual increase in the "Impact of Current Forecast" and the annual decrease in the "Impact of Prior Activity."

**Response:**

The "Impact of Current Forecast" increases on an annual basis because these numbers represent the cumulative savings of installed measures. For example, if a light bulb with an annual savings of 100 kWh was installed in 2008, the impact in 2008 would be 100 kWh. If a second (identical) light bulb was installed in 2009, the cumulative savings (Impact of Current Forecast) in 2009 would be 200 kWh because the bulb that was installed in 2008 would still be generating savings in addition to the bulb that was installed in 2009.

Conversely, the "Impact of Prior Activity" decreases annually because savings for installed measures is counted over the useful life of the measures (and then drops to zero). For example, if a light bulb with a ten year measure life was installed in 1999, there would be annual savings associated with that measure only through 2008 (i.e. savings would be zero after ten years based on the measure life). Over a long enough time horizon, the historical savings would approach zero as all measures reached the end of their estimated life.

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-004  
Page 1 of 1

Witness: Joseph R. Swift  
Request from: Connecticut Siting Council

**Question:**

On page 18, explain what the 212 MW of load response is generally composed of; i.e., cycling of central air conditioning units, etc.

**Response:**

Load Response is comprised of CL&P customers who curtail electric load with and without the use of emergency generators when called upon by ISO-NE. These are CL&P customers who are enrolled in ISO-NE's 30 Minute Demand Response Program either with (Action 12) or without (Action 9) emergency generators. The customers without emergency generation reduce building load through a variety of methods such as shutting down or reducing lighting levels, shutting down or cycling air conditioning load, shutting down special equipment (e.g., motors, etc.) or by shutting down selected processes. The customers with emergency generators would run their emergency generators when they are called to respond to an ISO-NE OP4 event.

**Witness:** Robert J. Russo  
**Request from:** Connecticut Siting Council

**Question:**

Page 24 of the CL&P Forecast, CL&P notes that "Connecticut can only reliably import about 2,500 MW of power..." Which transmission ties with bordering states make up this total? (Include the voltage and transmission line numbers.) Roughly what percentage of the 2,500 MW would be carried by each tie?

**Response:**

The 2,500 MW import limit is a best case scenario. The Connecticut import interface is defined by the transmission circuits and equipment in the following table. The table also shows the percent of the import power flow on each transmission facility under one scenario of pre-contingency conditions, e.g. generation dispatch, load, regional power transfers and transmission system configuration. As pre-contingent conditions change, these percentages and the associated Connecticut import capability may also change. This is the nature of transfer limits and is the reason that the FERC 715 document presents all transfer limits in the ISO-NE Control Area as a range of values with an upper and lower limit, e.g. the April 1, 2008 FERC 715 filing states that the Connecticut Import Interface capability is a range between 1,500 MW and 2,500 MW. As noted in the table, most power flows occur on the 345-kV transmission lines.

<b>Interconnection</b>	<b>Line/Equipment ID</b>	<b>Voltage</b>	<b>From Bus</b>	<b>To Bus</b>	<b>% of Import</b>
Lines/Equipment that connect Connecticut to Rhode Island	330 Line	345-kV	Lake Road	Card Street	31%
	1870S Line	115-kV	Wood River	Shunock	1%
	Killingly 2X Autotransformer	345/115-kV	Killingly 345	Killingly 115	7%
Lines that connect Connecticut to Massachusetts	395 Line	345-kV	Ludlow	Barbour Hill	32%
	1768 Line	115-kV	Southwick	North Bloomfield	2%
	1821 Line	115-kV	South Agawam	North Bloomfield	4%
	1836 Line	115-kV	South Agawam	North Bloomfield	4%
Lines that connect Connecticut to New York	398 Line	345-kV	Pleasant Valley	Long Mountain	18%
	690 Line	69-kV	Smithfield	Salisbury	1%

**Witness:** Robin E. Lewis  
**Request from:** Connecticut Siting Council

**Question:**

On page 2 of the CL&P Forecast, CL&P notes, "It also includes projected reductions resulting from distributed generation (DG) projects in accordance with Public Act 05-01..." Provide any forecast assumptions that CL&P made involving DG associated with Public Act 05-01.

**Response:**

This forecast includes reductions to sales due to DG, primarily in the industrial class. At the time the forecast was developed, many customers had expressed an interest in the DG monetary grant program. Some of those customers will ultimately not install a DG unit for various reasons, so to calculate the expected sales losses, each of these customers was assigned a probability corresponding to the progress it had reached in the installation process. For each customer, the probability was multiplied by the project's potential volume. The sum of these probability-weighted sales was the sales loss used in the forecast. The table below shows the GWh reductions to sales used in the forecast.

Year	GWh
2008	188
2009	253
2010	266
2011	272
2012	273
2013	272
2014	272
2015	272
2016	273
2017	272

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-007  
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Witness: Robin E. Lewis  
Request from: Connecticut Siting Council

**Question:**

In Table 2-1 of the CL&P Forecast, approximately what is the probability of the summer extreme hot peak being exceeded in a given year?

**Response:**

The summer peaks in the Extreme Hot Scenario are based on the hottest peak day weather that has occurred since 1950, when the Company began collecting weather data. Since this weather occurred once in more than 50 years, or less than 2% of the time, it could be said that the probability of it being exceeded is about 2% in each year. However it should be noted that this is not a true statistical computation and does not account for any warming trend that may be occurring.

Witness: Joseph R. Swift  
Request from: Connecticut Siting Council

**Question:**

Describe any new and/or innovative Conservation and Load Management energy savings measures that CL&P has put into use or is considering.

**Response:**

The Connecticut Light and Power Company's (CL&P) Conservation and Load Management (C&LM) Department continues to focus its short- and long-term efforts and budgets, on programs that provide cost effective capacity and energy savings to Connecticut's energy consumers. C&LM department staff constantly evaluates conservation programs and, where appropriate, creates new and innovative programs for customers, updates program processes, and markets programs via new conduits to deliver more effective energy-saving programs and measures. Connecticut's utility-administered energy-efficiency programs are ranked among the best in the nation. The American Council for an Energy Efficiency Economy (ACEEE) 2006 State Energy Efficiency Scorecard released in 2007 ranked Connecticut, along with Vermont and California, as the top states in the national race to adopt energy efficiency policies, programs and technologies. The ACEEE Scorecard recognizes those U.S. states that have enacted a range of innovative standards, codes and policies geared to improving national energy security while sustaining economic prosperity and environmental quality.

Besides the No. 1 State ranking, the ACEEE honored CL&P and the Fund specifically with several awards for individual programs. The Energy Conscious Blueprint, Energy Opportunities, and Small Business Energy Advantage programs received "exemplary Program" Recognition awards. The purpose of the award is twofold: to recognize the individual achievement of the selected program and to showcase the program for emulation by other organizations pursuing similar goals. The Home Energy Solutions program received "Honorable Mention" award.

CL&P works on a continuous basis with the Energy Conservation Management Board (ECMB), which was established by legislation to advise and assist the utilities in the development and implementation of C&LM programs and initiatives. Members of the ECMB include representatives of the Office of Consumer Counsel, Attorney General, Connecticut Business and Industry Association, Department of Environmental Protection, CL&P, UI and other organizations. The ECMB retains energy-efficiency industry experts as consultants who work with the ECMB and the utilities in the development of new program initiatives. The ECMB also utilizes a process to ensure that ideas and proposals from members of the public can be brought forward and considered. C&LM Department staff maintains memberships in various regional and national industry organizations and regularly participate in energy-efficiency seminars and conferences where new and innovative programs are discussed.

CL&P's innovative and/or new energy-saving programs include:

### Energy Opportunities Program

The Energy Opportunities program is designed to improve the energy efficiency of commercial or industrial customers' existing facilities by capturing retrofit opportunities. Retrofit projects are defined as those where the customer voluntarily exchanges or modifies inefficient, functioning equipment with high-efficiency alternatives. The Company partners with the gas distribution companies in Connecticut to offer an integrated portfolio of products and services. Integrating gas measures into the existing Energy Opportunities program will offer customers a more comprehensive package to help achieve greater energy efficiencies within their facilities.

### Energy Conscious Blueprint Program

The Energy Conscious Blueprint program is designed to influence energy-efficient building practices in the field of new construction and to maximize energy savings for "lost opportunity" projects, at the time of initial construction/major renovation, or when equipment needs to be replaced or added. These opportunities are realized by: 1) introducing energy efficiency concepts to actual customers, architect/engineering firms, contractors, commercial realtors, trade allies, etc., 2) demonstrating the benefits of selecting efficient options during the design stage, and 3) convincing the design community that there is more to be gained for customers by designing for the whole building operation over all the expected operating conditions.

The Energy Conscious Blueprint program strives to maximize energy efficiency beyond the requirements of the State Building Code. As such, the program methodology is moving towards alignment with Leadership in Energy and Environmental Design ("LEED") standards or other advanced building guidelines standards. In addition, the program will continue to promote emerging technologies such as advanced lighting designs including day lighting, and building automations systems. Similar to the Energy Opportunities program, the Company partners with the gas distribution companies in Connecticut to offer an integrated portfolio of products and services. Integrating gas measures into the program will offer customers a more comprehensive package of energy efficiency measures within the project.

### Small Business Energy Advantage

The Small Business Energy Advantage (SBEA) program is designed to provide cost-effective, turnkey energy-saving services for small commercial and industrial customers who do not have the time, financial resources, or in-house expertise necessary to analyze and modify their energy usage. CL&P has implemented fixed pricing across its pool of vendors (currently 12 vendors) and introduced technologies of LED lighting, refrigeration controls, vending machine controls, day-light harvesting concepts (i.e., dimmable ballasts), and variable frequency drives for efficient AC electric motor control into a program that has traditionally been primarily a lighting retrofit program for small businesses. Qualified customer are eligible for zero percent financing for up to three years.

### Load Management

The Load Management program is primarily comprised of CL&P's Commercial and Industrial customers who are enrolled in ISO-NE's 30-Minute Demand Response program. These customers manually respond to an ISO-NE demand response events either through curtailing building load (reduce lighting, curtail or cycle air-conditioning, shut down processes, etc.) and/or running their emergency generators to remove electric load from the grid.

### Home Energy Solutions

Beginning in 2007, CL&P began Home Energy Solutions—a home performance program aimed at weatherizing homes, sealing HVAC duct systems, and installing energy-efficient lighting in thousands of Connecticut homes. By coordinating this program with the natural gas conservation programs, customers can receive “one stop shopping” and be given both electric and gas saving measures through a single home visit. Customers with electric heat or natural gas can participate in the program for free. Customers with oil or propane heat are charged a co-pay.

### Room Air-Conditioner Replacement Program

As a result of Public Act 07-242, *An Act Concerning Electricity and Energy Efficiency*, CL&P is offering the Room Air-Conditioner Replacement Program. The objective of the program is to remove old, inefficient window air conditioners and replace them with more efficient models that meet ENERGY STAR standards. Customers can turn their old operable room air conditioner in at participating retailer and receive a coupon for the purchase of a new ENERGY STAR unit. The old unit is recycled in accordance with state and/or local regulations.

### Museum Partnership Program

As part of the Museum Partnership Program, CL&P is working with the Connecticut Science Center on the installation of a Clean and Efficient Gallery when the Center opens in Spring 2009. The Clean and Efficient Gallery will portray a partially built "Energy City" detailing to visitors the energy-efficient and clean renewable technologies that can be installed in commercial and residential buildings. With interactive exhibits and a Global Climate Change theater, the Clean and Efficient Gallery is expected to educate approximately 400,000 schoolchildren and visitors about climate change and the technologies (energy-efficient and renewable) that exist to combat this global environment issue. Funding for this project comes from the Connecticut Energy Efficiency Fund and the Connecticut Clean Energy Fund.

### eeSmarts

*eesmarts* is an energy efficiency and clean, renewable learning initiative. Created in 2002, the program's goal is to facilitate students' understanding of math, science and technology related to clean, renewable energy resources and electricity in order to create an energy-efficient ethic among Connecticut's school-aged students. *eesmarts* offers teacher training workshops, curriculum materials, essay contest and science fair, lights for learning fundraiser, on-site program, outreach and educational resources. The *eesmarts* program offers school district-specific and general teacher training workshops for Connecticut educators and administrators. Since the inception of the teacher training program, *eesmarts* has trained approximately 800 Connecticut educators and led district-specific workshops in the following communities: Ansonia, Bridgeport, Danbury, Groton, Hartford, Monroe, New Haven, North Haven, Ridgefield, Stratford, Trumbull, Waterbury and Wethersfield.

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-009  
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Witness: David A. Errichetti  
Request from: Connecticut Siting Council

**Question:**

What is the status of CL&P's compliance with the Renewable Portfolio Standards updated in Public Act 07-242?

**Response:**

CL&P makes its compliance filing on or before October of any given year to show its compliance with the previous calendar year. CL&P's most recent filing was on October 15, 2007 in Docket No. 07-09-14, which demonstrated its compliance for calendar year 2006. Please note that, in accordance with subsection (j) of section 16-244c of the general statutes, CL&P's renewable portfolio standard requirements are contractually passed on to its wholesale suppliers.

The Connecticut Light and Power Company  
Docket No. F-08

Data Request CSC-01  
Dated: 06/12/2008  
Q-CSC-010  
Page 1 of 1

Witness: Robert J. Russo  
Request from: Connecticut Siting Council

**Question:**

Did CL&P experience any record peak loads during the recent heat wave on June 9 and June 10th? Provide the daily peak loads in megawatts.

**Response:**

The preliminary peak load for CL&P on June 9, 2008 and June 10, 2008 were 5,143 MW and 5,289 MW respectively. The June 10, 2008 peak surpassed the June 2007 peak of 5,209 MW which seems to show peak load continues to grow. CL&P's all time peak of 5,512 MW was set in 2006 during August when home air conditioning is apt to be in full use.

Witness: Raymond L. Gagnon  
Request from: Connecticut Siting Council

**Question:**

Regarding the installation of wireless (i.e. cellular and PCS) antennas on electric transmission structures (often referred to as "power mount facilities"), does CL&P have any concerns regarding this process? For example, in CL&P's experience, does the carriers' need to access the facilities for maintenance and upgrades sometimes conflict with CL&P's ability to schedule transmission outages with ISO-New England? Explain.

**Response:**

CL&P is concerned that the wireless antenna process does not fully consider electric reliability issues. To ensure safe, reliable and economic operation of the transmission system, CL&P actively discourages wireless antenna installations on high impact lines, such as 345-kV lines, radial 115-kV lines and lines that limit the ability for the system or a part of the system to transfer power. However, once a request is made, CL&P makes every effort to support wireless antenna installations and maintenance requests.

The installation or maintenance of such equipment requires that the transmission line be switched out of service for a period of time ranging from several hours to several days to create a safe working environment for the wireless communication crews. The ability to get the transmission line switched out of service is dependent on the transmission network's capability to continually support the load demand with that particular line out of service.

Outage requests are submitted to the Connecticut Valley Electric Exchange (CONVEX) and ISO-NE (Independent System Operator - New England) for evaluation and approval. The degree to which a line is able to be taken out of service is dependent on its impact on the reliable operation of the transmission system. Some of the characteristics of lines with high impact are 345-kV lines, radial 115-kV lines and lines that limit the ability for the system or a part of the system to transfer power. Additionally, there are real time conditions such as generation availability, system disturbances or unexpected loading conditions that directly impact the ability to take a line out of service.

CONVEX is the local transmission operations control center for Connecticut and Massachusetts under the umbrella of the New England Regional Transmission Operator known as ISO-NE. As a Transmission Operator, CONVEX's primary function is to ensure the safe, reliable and economic operation of the CONVEX transmission system, 24 hours a day, 365 days a year, no matter what the conditions. This responsibility is carried out in conjunction with ISO-NE by evaluating, coordinating, and responding to planned and dynamic changes in the connectivity of the transmission system, ensuring that reliable service to the electrical distribution system is maintained at all times.

CONVEX and ISO-NE are the local and regional authorities that approve outage request. Therefore, CL&P cannot guarantee that a line outage can be obtained in a timely manner to support the carriers' need to access transmission line structures for wireless antenna installations, maintenance and upgrades.

**Witness:** Raymond L. Gagnon  
**Request from:** Connecticut Siting Council

**Question:**

Did CL&P experience a recent transmission outage in the Danbury area? If yes, identify the circuit and circumstance of the occurrence.

**Response:**

Yes, CL&P experienced a transmission outage in the Danbury area on May 27, 2008 affecting 56,400 customers. While the transmission system was restored in less than one hour, many downstream distribution customers were out of power for 24 hours.

On the morning of May 27, 2008, CL&P took the 1770 line out of service to install a wireless antenna attachment. The 1770 line runs from Bates Rock substation in Southbury to Plumtree substation in Bethel via Stony Hill substation in Brookfield. This left the Danbury area fed radially on the 1238/1813 (115-kV) line which runs from Frost Bridge to Rocky River. Later that morning a weather forecast of impending weather approaching the area was reported and a decision to cancel the wireless antenna installation and place the 1770 line back into service was made. During the restoration effort of the 1770 line the 1238/1813 (115-kV) sustained a lightning disturbance resulting in loss of this radial transmission feed into the Danbury area. The loss of the Frost Bridge (1238/1813 line) source with the Plumtree source (1770 line) out of service resulted in 56,400 customer outages which lasted longer than one hour. Within one hour, 28 MW of the initial 130 MW load was restored; restoration of the remaining load was estimated to be 24 hours.