UIL
UIL HOLDINGS

July 16, 2015

Robert Stein
Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Re: F-2014/2015

Dear Chairman Stein:

I enclose an original and fifteen (15) copies of The United Illuminating Company's responses to the Connecticut Siting Council's pre-hearing interrogatories. If you have any questions about this filing, please do not hesitate to contact me at 203-499-2422.

Very truly yours,

Bruce L. McDermott

Bruce L. McDermott
Managing Counsel – Operations
On Behalf of The United Illuminating Company

cc: Service List

Enclosures

Company: The United Illuminating Company   **Witness: Mark Colca**

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Date Submitted: July 16, 2015

CSC-001 Q: Provide the predicted (not actual) 50/50 forecast loads for 2005 through 2014
from The United Illuminating Company's (UI) 2005 forecast report.

CSC-001 A: The weather adjusted annual energy sales (50/50 forecast loads) for 2005 through
2014 from UI's 2005 forecast report are as follows:

2005   5,991 GWh
2006   6,052 GWh
2007   6,089 GWh
2008   6,142 GWh
2009   6,163 GWh
2010   6,201 GWh
2011   6,239 GWh
2012   6,293 GWh
2013   6,316 GWh
2014   6,355 GWh

Company: **The United Illuminating Company**   Witness: **Robin Lyons**

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Date Submitted: **July 9, 2015**

CSC-002 Q: Explain the methodology of how historical actual peak load data are converted to weather-normalized historical peak load data.

CSC-002 A: The historic peak loads are normalized using regression models that relate daily MW System Peak Loads to the respective daily 12-hour average (prior to the peak hour) temperature humidity index (THI) for the period June 1 through August 31. THI is an index to determine the effect of summer conditions on human comfort combining temperature and humidity. Only THI observations greater than 70 are used in each year's normalization equation.

The peak normalization develops a "90/10" System Peak Load normalized value, as well as a "most likely" or "50/50" value. Hourly system peak data are analyzed to determine the hours of the day that the UI system most frequently reached its peak load. The analysis showed that UI's system peaks typically occurred between 3:00 pm and 5:00 pm during the past ten-years. Therefore, the 3:00 pm through 5:00 pm daily peak observations are typically used to calculate the "50/50" and "90/10" 12-hour average THI weather normal value.

In 2014, the normalization of weekday system peak loads with corresponding 12-hour average THI's greater than 70 THI were normalized by regressing the 12-hour average THI for the period from June 15 - September 15. The timeframe was modified from the June 1- August 31 because the measured peak of 1,186 MW occurred on September 2, 2014 at 4:00 pm. The system peak normalization methodology requires the normalization of all peak producing weekdays (i.e., all weekdays with 12 hour average THI's greater than 70 THI). Because there was a lack of representative peak days in 2014 and the measured system peak occurred late in the 2014 summer, this represented an anomaly that is not consistent with past summer peak periods. The composition of load for the days that did exhibit relatively high peak loads during the typical months that the peak occurs (i.e., June, July, and August) was analyzed and a normalized peak was developed from that analysis. The 2014 summer peaks yielded a normalized peak of 1,401 MW at the 4:00 PM design THI of 81.79 on July 23rd.

The models developed for the respective year and hour are used to weather normalize the historic actual peak load values to a "most likely" and "extreme" weather condition.

Company: The United Illuminating Company   **Witness: Donna Wells**

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CSC-003 Q: Provide a break-down of the projected number of megawatts (MW) of load reduction for UI's territory due to conservation, load response/load management, and distributed generation (if applicable) for each year from 2015 through 2024. If possible, also include a similar estimated break-down by megawatt-hours or gigawatt-hours.

CSC-003 A: The breakdowns are shown in the following table.

	Load Reduction (MW)				Annual Sales Reductions (Gwhrs)	
	Annual Incremental CLM	Annual Incremental DG	Annual Cumulative CLM*	Annual Cumulative DG*	Annual Incremental CLM	Annual Incremental DG
2015	10.3	6.6	10.5	6.8	63	9
2016	11.7	5.0	22.5	11.9	61	25
2017	12.0	4.8	34.9	16.9	62	25
2018	11.5	2.0	46.7	18.9	60	25
2019	10.8		57.8	18.9	55	
2020	10.6		68.6	18.9	54	
2021	10.4		79.3	18.9	53	
2022	10.1		89.7	18.9	52	
2023	9.9		99.9	18.9	51	
2024	9.7		109.9	18.9	50	

*"grossed up " 2.73% for line losses

Company: The United Illuminating Company   **Witness: Robin Lyons**

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CSC-004 Q: Provide any underlying assumptions associated with the distributed generation (DG) included in the 2015 UI Forecast.

CSC-004 A: As in previous years, the 2015 UI forecast includes distributed generation (DG) units that were on-line and part of the historical data set used to develop UI's forecast for sales and peak load. DG units collectively reduce energy and peak demand forecasts.

In order to incorporate the new DG resources in its forecasting, UI regularly monitors the distributed generation resources that are planned for the UI service territory. These DG units vary from small solar panels on residences to multi-megawatt combined heat and power generators installed at commercial and industrial facilities. UI becomes aware of any new DG units expecting to come on-line through the interconnection application process or through the public policy programs; e.g. Low & Zero Emission Renewable Energy Credit (LREC/ZREC) and The Clean Energy Finance and Investment Authority (CEFIA). The cumulative reduction in the system peak load forecast due to DG is projected to be 6.8 MW in 2015 and 18.9 MW by 2018 (based on projects totaling 18.4 MW grossed-up to account for distribution losses). An enhancement was made to the DG forecast in 2015 to account for differences in capacity factors for various technologies. For example, new DG associated with solar was adjusted for an assumed capacity factor at the time of the peak load.

With regard to the sales forecast, DG associated with public policy programs is included in the sales forecasts. Estimates of the impact to sales were developed from the specifications provided by the bidders of the round 3 LREC/ZREC medium and large project winning bids, and round 2 small ZREC tariff awards. As a result, the development of the sales forecast includes reduction in sales by 9, 25, 25, and 25 GWhr of energy in 2015, 2016, 2017 and 2018, respectively, due to the impact of incremental DG.

Company: The United Illuminating Company   **Witness: Robin Lyons**

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CSC-005 Q: Does UI's 2015 Forecast include any additions due to possible loads and/or electrical energy consumption from electric vehicles? If yes, provide any assumptions made regarding electrical energy consumption by electric vehicles (EV). Include the numbers and types of EVs assumed, projected number of vehicles in use, power and energy consumption per vehicle associated with charging, etc.

CSC-005 A: UI's 2015 sales and peak load forecasts do not include any additions explicitly based on assumptions related to electric vehicles. As electrical vehicles are connected to the system, their contribution to energy consumption and peak load will be included in the historic data sets used to develop the forecast models.