September 29, 2015

Mr. Robert Stein
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Docket No. 461 - CSC 461 Greenwich Substation and Line Project

Dear Mr. Stein:

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

Response to OCC-02 Interrogatories dated 09/21/2015
OCC-019 *, 020, 021, 022, 023, 024, 025, 026, 027, 028

Very truly yours,

John Morissette
Project Manager
Siting
As Agent for CL&P
dba EversourceEnergy

cc: Service List

* This response is proprietary and confidential and is available only to signatories of the nondisclosure agreement.

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Re: Responses to Interrogatories CSC-11, OCC-1 and OCC-5.

(a) Re: Response to CSC-11. The response indicates that Connecticut would pay 64% of the Local Network Service ("LNS") costs. Provide an itemized list of the payers of the remaining 36% of the cost. Also, explain whether FERC or ISO-NE review and approve LNS tariff rates for the local service that would be provided through the proposed Greenwich line project.

(b) Re: Responses to CSC-11, OCC-1 and OCC-5. Does the Company have approval from FERC/ISO-NE for the $12 million of Pool Transmission Facility ("PTF") costs that the Company proposes to recover through Regional Network Service ("RNS") rates? If so, provide a copy of the FERC/ISO-NE approval. If not, explain why. Also, provide the Company's view on localization of the costs, explaining why the Company believes that the costs will be regionalized and not localized, and include precedents for the Company view. Include a breakdown of the $12 million cost by infrastructure element, cost and intended function.

(c) Re: Response to CSC-11. Provide a breakdown of the $21 million in distribution costs. Specify infrastructure elements, their costs and their intended functions.

Response:
(a) See Attachment 1 which contains a listing of Schedule 21-NU, Category A transmission service customers who would pay the remaining 36% of the costs.

The LNS rates are calculated in accordance with the formula contained in Schedule 21-NU, Attachment NU-H of the ISO-NE Transmission, Markets and Services Tariff. This tariff has been approved by FERC.

(b) ** This response is proprietary and confidential and is available only to signatories of the nondisclosure agreement.

(c) ** This response is proprietary and confidential and is available only to signatories of the nondisclosure agreement.

** This response is proprietary and confidential and is available only to signatories of the nondisclosure agreement.

Schedule 21-NU, Category A Load Ratio Share Information
The following are customers as of August 2015

Schedule 21-NU, Category A Network Customers

Ashland Municipal Electric Department
CT Transmission Municipal Electric Energy Coop
GenConn Middletown, LLC
Granite Reliable Power, LLC
New England Power Company
New Hampshire Electric Cooperative
Public Service Company of New Hampshire
Unitil Energy Systems
Waterbury Generation LLC
Western Massachusetts Electric Company

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Re: Response to OCC-2. The response to OCC-2 is missing the requested "narrative concerning the basis for provisions the Company has made for contingencies." Please provide a list of all contingency factors/amounts and substantiate.

Response:
The Company has included contingency in its project estimates. In the response to OCC-2, the contingency has been spread across each of the estimated FERC account breakdowns. The total amount of contingency included in the project estimate is approximately 10% of the project cost, which is appropriate based on the level of design detail, Company experience and cost estimating guidelines provided by ISO-NE in Planning Procedures.

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Re: Response to OCC-4. Provide a detailed explanation of what is included in the 15% transmission carrying charge factor. Explain whether the referenced Attachment F of the ISO-NE Tariff applies to local transmission. Explain whether FERC or ISO-NE approve the NU local transmission revenue requirement. Provide documentation of any FERC/ISO-NE approvals. Provide an itemized breakdown of the 17% distribution revenue requirement factor.

Response:
Transmission: As indicated in Q-OCC-004, the Carrying Charge Factor ("CCF") is calculated consistent with Attachment F Implementation Rule, Appendix C (Regional rates) and Schedule 21, NU, Attachment NU-H of the ISO-NE Transmission, Markets and Services Tariff (Local rates). Attachment 1 shows the detailed calculation of the 15% CCF for Regional Network Service. Attachment 1 is also posted annually on ISO-NE's public website as part of the PTO AC Annual Informational filing.

For local transmission rates, Attachment NU-H of the ISO-NE Tariff does not define the calculation of the CCF. It does, however, indicate that "Plant additions will be multiplied by a fixed charge carrying cost". Since Schedule 21-NU does not define the term, CL&P uses a similar CCF calculation as Attachment F of the ISO-NE Tariff. Attachment 2 shows the detailed calculation of the 15% CCF used for Local Network Service. Attachment 2 is also contained in the Schedule 21-NU Regulatory Oversight Filing posted on PURA's public website.

The Local Network Service revenue requirements are calculated in accordance with the formula contained in Schedule 21-NU, Attachment NU-H of the ISO-NE Transmission, Markets and Services Tariff. This tariff has been approved by FERC.

Distribution: The 17% distribution revenue requirement factor provided in Q-OCC-004 is itemized below.

Rate of Return (includes taxes)		11.20%
Property Tax Composite Rate		3.14%
Depreciation Composite Rate		2.35%
Total Distribution Revenue Requirement Factor		16.69%

Northeast Utilities Service Company
Forecasted Transmission Revenue Requirements of PTF Facilities - 2015 Estimated
ISO New England Inc. Transmission, Markets and Service Tariff, Section II
Actual PTF Revenue Requirements per Attachment F of the ISO-NE OATT

LN.	I. FORECASTED TRANSMISSION REVENUE REQUIREMENTS	Attachment F Reference	CL&P	PSNH	WMECO	Total	Reference
1	Forecasted Transmission Plant Additions (excl. Localized)	App. C	$ 275,876,000	$ 113,666,000	$ 87,186,000		Attachment G
2	Carrying Charge Factor (line 18)	App. C	15.25%	16.55%	14.00%		
3	**Forecasted Transmission Revenue Requirements** (Lines 1 * 2)		$ 42,071,000	$ 18,812,000	$ 12,206,000	$ 73,089,000	
4	Forecasted NEEWS CWIP		$ (149,002,000)		$ -		Attachment G
5	NEEWS Cost of Capital Rate (line 21)		13.02%		12.06%		
6	**Forecasted Transmission Rev. Req. for CWIP** (Lines 4 * 5)		$ (19,400,000)		$ -	$ (19,400,000)	
7	**Total Forecasted Transmission Revenue Requirements** (Lines 3 + 6)		$ 22,671,000	$ 18,812,000	$ 12,206,000	$ 53,689,000	
	II. CARRYING CHARGE FACTOR (Post 96) (*)						
8	Investment Return and Income Taxes	(A)	$ 216,835,476	50,812,016	59,209,860	326,857,352	W/S 1B line 16
9	Depreciation Expense	(B)	57,857,303	12,315,183	13,853,324	84,025,810	W/S 1B line 18
10	Amortization of Loss on Reacquired Debt	(C)	460,401	195,905	41,048	697,354	W/S 1B line 19
11	Investment Tax Credit	(D)	(332,148)	(3,850)	(29,425)	(365,423)	W/S 1B line 20
12	Property Tax Expense	(E)	35,184,843	14,352,660	15,469,033	65,006,536	W/S 1B line 21
13	Payroll Tax Expense	(F)	250,119	(3,240)	15,117	261,996	W/S 1B line 22
14	Operation & Maintenance Expense	(G)	29,352,552	8,159,213	5,263,108	42,774,873	W/S 1B line 23
15	Administrative & General Expense	(H)	28,850,267	8,211,448	6,645,940	43,707,655	W/S 1B line 24
16	Total Expenses (Lines 8 thru 15)		$368,458,813	$94,039,335	$100,468,005	$562,966,153	
17	PTF Transmission Plant		$2,415,403,244	$568,289,707	$717,553,491	$3,701,246,442	W/S 1B line 1
18	Carrying Charge Factor (Lines 16/17)		15.25%	16.55%	14.00%	15.21%	
19	Cost of Capital Rate - 11.07% ROE		12.43%		11.49%		W/S 2A, 2C
20	Cost of Capital Rate - 67 BP ROE adder for NEEWS		0.59%		0.57%		W/S 2A, 2C
21	NEEWS Cost of Capital Rate		13.02%		12.06%		

(*) The Carrying Charge Factor shall reflect the most recent calendar year data used in determining Post-1996 Annual Transmission Revenue Requirements and shall equal the sum of Attachment F Sections II.A through II. H divided by PTF Transmission Plant.

Forecasted Additions CWIP

Northeast Utilities Service Company
ISO New England Inc Transmission, Markets and Services Tariff, Section II
Schedule 21-NU, Category A per Attachment NU-H
Total Annual Revenue Requirements - Year End Rate Base for costs in 2014

Line	I. INVESTMENT BASE	Attachment H Reference Section:	CL&P		PSNH	WMECO	Total
1	Transmission Plant	II(A)(1)(a)	3,114,617,645	(2)	716,161,838	868,231,069	4,699,010,552
2	General Plant	II(A)(1)(b)	88,930,294		59,322,426	18,793,854	167,046,574
3	Plant Held For Future Use	II(A)(1)(c)	32,127,498		9,205,247	-	41,332,745
4	Total Plant (Lines 1+2+3)		3,235,675,437		784,689,511	887,024,923	4,907,389,871
5	Accumulated Depreciation	II(A)(1)(e)	631,657,389		139,271,789	58,651,311	829,580,489
6	Accumulated Deferred Income Taxes	II(A)(1)(f)	422,654,782		136,536,362	220,294,265	779,485,409
7	Loss On Reacquired Debt	II(A)(1)(g)	5,414,528		1,984,496	331,119	7,730,143
8	Other Regulatory Assets	II(A)(1)(h)	19,777,848		8,513,842	9,294,176	37,585,866
9	Net Investment (Line 4-5-6+7+8)		2,206,555,642		519,379,698	617,704,642	3,343,639,982
10	Prepayments	II(A)(1)(j)	16,368,000		5,357,993	1,023,867	22,749,860
11	Materials & Supplies	II(A)(1)(k)	39,476,915		10,198,096	3,143,646	52,818,657
12	Cash Working Capital	II(A)(1)(l)	9,381,535		2,578,801	1,801,225	13,761,561
13	Total Investment Base Excluding CWIP (Lines 9+10+11+12)		2,271,782,092		537,514,588	623,673,380	3,432,970,060
	II. REVENUE REQUIREMENTS						
14	Investment Return and Income Taxes (at 10.57% ROE)	II(A)	272,420,750		61,590,572	69,036,277	403,047,599
15	Depreciation Expense	II(B)	72,297,134		15,519,668	16,577,959	104,394,761
16	Amortization of Loss on Reacquired Debt	II(C)	593,685		246,881	49,668	890,234
17	Investment Tax Credit	II(D)	(428,304)		(4,852)	(35,604)	(468,760)
18	Property Tax Expense	II(E)	45,144,822		18,087,310	18,717,332	81,949,464
19	Payroll Tax Expense	II(F)	322,527		(4,083)	18,291	336,735
20	Operation & Maintenance Expense	II(G)	37,849,988		10,282,288	6,368,294	54,500,570
21	Administrative & General Expense	II(H)	37,202,294		10,348,117	8,041,502	55,591,913
22	Transmission Support Expenses	II(I)	1,625,568		898,916	457,017	2,981,501
23	Transmission Related Taxes and Fees	II(J)	9,854,673		158,113	20,627	10,033,413
24	Total Revenue Requirements (Line 14 thru 23)		476,883,137	(1)	117,122,930	119,251,363	713,257,430

(1) / (2) = 15.31%

Note: Calculation was added to show the percentage used for

Northeast Utilities Companies
ISO-NE's Transmission, Markets and Services Tariff
Section II - Open Access Transmission Tariff, Schedule 21-NU
Forecasted Revenue Requirement Calculation for the years: 2015
(000's)

Line No:			CL&P		PSNH		WMECO		Total
1	2014 Actual year end revenue requirements	$	476,883	$	117,123	$	119,251	$	713,257
2015									
2	Capital Additions (<$20M)	$	79,496	$	107,963	$	97,437	$	284,896
3	x 50% (for average capital additions)		50%		50%		50%		50%
4	Average Capital Additions (< $20M) (line 2 * 3)	$	39,748	$	53,982	$	48,719	$	142,448
5	Projects > $20 million (pro-rated)	$	90,852	$	684	$	1,825	$	93,361
6	Total Capital Additions (line 4 + 5)	$	130,600	$	54,666	$	50,544	$	235,809
7	x Fixed Charge Rate (FCR) (a)		15.31%		16.35%		13.74%		
8	= Incremental Rev. Req @ FCR (line 6 * 7)	$	19,995	$	8,938	$	6,945	$	35,878
9	13 Month Average CWIP	$	104,874	$	-	$	-	$	104,874
10	13 Month Average AFUDC	$	53,011	$	-	$	9,025	$	62,036
11	13 Month Average Net CWIP (line 9 - 10)	$	51,863	$	-	$	(9,025)	$	42,838
12	x Cost of Capital Rate		11.99%		-		11.07%		12.18%
13	Rev. Req. associated with CWIP in Rate Base (line 11 * 12)	$	6,218	$	-	$	(999)	$	5,219
14	Rev. Req. for billing (avg. capital additions) (line 1 + 8 + 13)	$	503,096	$	126,061	$	125,197	$	754,354

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Re: Response to OCC-7.

Items a. and b. The table appears to be missing years 2009 and 2015. Please provide a revised table that includes 2009 and 2015. Include actual 2015 peak numbers. Explain the causes of the drops in peak usage in 2007, 2008, and 2014.

Item c. Is it correct that the Company's forecast bears no relation to any analysis or estimate of increases or decreases in numbers of customers?

Item d. This item refers to the response to CSC-12. That response states, "the I% load growth reflects the average load growth experienced at the Cos Cob substation transformers ... " Elaborate on this response in light of the loads shown in OCC-7, item f.

Item f. Explain the steep drops in usage in 2005, 2009 and 2010. In 2005, did transformers IX and 2X have the same usage?

Response:
a. The revised table is attached.

b. The causes of the drops in peak usage in 2007, 2008, and 2014 are mainly due to summer weather and economic conditions.

c. The Company's forecast is not directly related to the numbers of customers.

d. The load growth rate of 1% is a long-term forecast based upon the growth experienced for all bulk substations in the Norwalk-Stamford subarea area and not the volatility of any specific year.

f. The steep drops of usage in 2005 was due to an duplication error in the Q-OCC-7 table, the corrected table is attached. The steep drops in usage in 2009 and 2010 is attributed to a substation upgrade project that resulted in the meters not communicating properly due to the multiple open breakers during the project, which affected the data collecting of the meters.

OCC-022a

Cos Cob 11R 27.6 kV System Peak (MVA)												
Transformers	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
11R-1X	21.2	27	26.6	25.7	23.5	23.9	19.1	24.3	30.4	26.8	22.4	24.2
11R-2X+3X	75.6	91	98.4	90.4	88.6	83.8	100.6	97.5	97.8	103.7	85.3	90.6
Total MVA	96.8	117.9	125	116.1	112.1	107.7	119.7	121.8	128.2	130.5	107.7	114.8

Note. The 2015 value does not include August peak data

OCC-022f

	Cos Cob Annual KWhr Usage										
Transformers	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
11R-1X	80,079,528	100,009,797	90,646,508	106,486,133	103,434,140	74,350,379	42,141,562	84,643,962	68,405,507	101,597,185	116,916,682
11R-2X	193,576,366	198,995,322	194,745,479	188,300,522	177,643,359	38,115,048	81,554,502	207,061,523	198,172,937	187,447,565	178,434,095
11R-3X	192,831,235	196,392,746	192,186,406	195,881,760	175,623,897	141,332,636	78,581,166	187,107,485	198,309,107	186,048,912	175,138,406

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Re: Response to OCC-8. What was the reason why the 35K-6X transformer was installed in 2013? Provide updated 2015 peak numbers.

Response:
The 35K-6X transformer was installed to increase 13.2kV capacity and improve reliability. Some load from the 11R-5X was shifted to the 35K-6X. The 35K-6X also serves as a backup for the 11R-5X. In addition, the 35K-6X and 11R-5X provide a redundant supply to the Metro-North signal control system.

2015 peak load (in MVA) is shown below.

Transformers	2015
11R-5X	17.2
35K-6X	9.4
Total MVA	26.6

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Re: Response to OCC-13. The Company objected to this interrogatory. OCC clarifies that it is not requesting the Company to publicly identify its customers and their loads. The customers may be identified as "customer 1" through "customer 25." This interrogatory is relevant to an analysis of non-transmission alternatives and energy supply alternatives or demand reduction that might apply for larger customers. With these conditions, the OCC posits this interrogatory: List the 25 largest end-use customers served out of the 27.6 kV Cos Cob substation in 2014 and 2015 to date, along with their actual 2014 and forecasted 2015 peak and total loads.

Response:
The table below is the 25 largest end-use customers served out of the 27.6 kV Cos Cob substation in 2014 and 2015 to date, along with their actual 2014 and forecasted 2015 peak and total loads.

Customer Number	2014 Max Demand kW	2015 Max Demand kW
1	3602	3830
2	3677	3312
3	2140	2157
4	1461	1372
5	1350	1354
6	936	761
7	817	595
8	606	694
9	658	663
10	624	588
11	578	555
12	572	514
13	534	526
14	523	530
15	499	606
16	486	432
17	400	414
18	378	387
19	397	365
20	361	371
21	359	347
22	359	339

23	413	367
24	357	351
25	290	333

Added "kW" units to above table.

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Provide the number of customers served out of the Cos Cob Substation, broken down by residential, commercial and industrial, who have received Energize CT services, and categorize by type of service received.

Response:
The following summary table shows the the number of Greenwich customers who received Energize CT electric energy efficiency measures from 2012-2014 broken down by sector and program. Note that Eversource was not able to cross-reference this list with customers served through the Cos Cob Substation, and that totals may reflect some customers who participated more than once in different calendar years.

	Greenwich Residential Participation
Home Energy Solutions	
Home Energy Solutions Multifamily	
HVAC Rebate	
Home Energy Solutions Income Eligible	
Lighting Rebate	
Appliance Rebate	
New Construction	
Residential Total	
	Greenwich Commercial and Industrial Partic
Energy Conscious Blueprint	
Energy Opportunities	
Small Business	
Commercial and Industrial Total	
TOTAL All	

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Provide the number of customers served out of the Cos Cob Substation, broken down by residential, commercial and industrial, that CL&P account executives have individually contacted to promote energy efficiency and demand reduction services.

Response:
Greenwich residents receive energy efficiency solutions messaging throughout the year via a variety of advertising mediums:

- Radio: In 2015, 4 radio campaigns executed that included ads on WEBE-FM, WEZN-FM, WFOX-FM and Pandora Radio– all cover Greenwich.
- Targeted Digital Display Advertising (throughout the year): Greenwich Zip codes are included in the advertising purchase.
- Display advertising on www.nbcconnecticut.com: This NBC CT affiliate web site has the largest reach into Fairfield County, including Greenwich customers.
- Direct Mail: 10,400 Greenwich residents received an energy efficiency mailing in August.
- Television: April-June campaign included Fairfield County media buy on Comcast and News 12 (reaches Greenwich audience).

Greenwich businesses are primarily receiving information via the Eversource energy efficiency sales team and dedicated account executives. Account Executives have individually contacted 66 commercial and industrial customers served by the Cos Cob substation within the last two years to promote energy efficiency and demand reduction services. Additionally, small businesses in Greenwich are targeted through a digital display advertising campaign and also were an audience for the television campaign noted above.

Witness: **Witness Panel**
Request from: **Office of Consumer Counsel**

Question:
Provide an estimate of the energy savings from an intensive campaign promoting energy efficient lighting changeouts with 75% participation from customers served out of the Cos Cob Substation.

Response:
The energy efficiency lighting market has been undergoing a paradigm shift towards efficient lighting due to the impacts of energy efficiency programs, changes in the federal lighting standards from the U.S. Energy and Independence and Security Act of 2007 ("EISA"), and the availability of affordable LED lighting products. For example, the number of residential customers in Connecticut that have at least one efficient bulb was 94% in 2012. In addition, the percentage of inefficient incandescent bulbs in Connecticut homes has declined from 64 percent in 2009 to 49% in 2012. Eversource expects that increased adoption of energy efficient lighting will continue given that the availability of LED lighting products continues to increase while prices continue to decrease. While Eversource does not have an estimate of the energy savings from an intensive campaign to promote lighting for customers served out of the Cos Cob substation, Eversource has already factored high adoption rates of energy efficient lighting into its energy efficiency forecasts.

Witness: **Kenneth B. Bowes**
Request from: **Office of Consumer Counsel**

Question:
Provide a detailed analysis of the efficiencies that could be realized from voltage/VAR optimization; battery energy storage; and working with customers to develop customized energy efficiency measures.

Response:
The experience of volt/VAR control under the Conservation Voltage Reduction Program at Eversource since the 1980s has been very positive for customers. Under the Conservation Voltage Reduction program, Eversource has lowered the upper level of the allowable voltage tolerance from +5/- 5% to +3/-5% and has resulted in approximately 1% reduction in energy usage. This reduction in energy usage is contained in the actual measured usage by customers and in the company's substation load measurements. The ability to implement further volt/VAR controls has not been studied in detail, however there may be additional incremental opportunities that could be included in the Connecticut Department of Energy and Environmental Protection (DEEP) demonstration projects discussed below. Note: The Independent System Operator - New England conducts annual voltage reduction tests whereby the system voltage is lowered by 5% with a required 1.5% reduction in power demand. Eversource complies with this ISO-NE Operating Procedure 13 requirement on a system basis. If additional benefits are realize from volt/VAR control, this could adversely impact the ISO-NE Operating Procedure 13 requirements in a specific load area.

A detailed analysis of battery energy storage has not been conducted, however Eversource is interested in demonstration projects that would determine the cost effective applications of energy storage. The Connecticut Department of Energy and Environmental Protection just initiated a proceeding pursuant to Section 103, Public Act 15-5 which requires each Electric Distribution Company to submit proposals for demonstration projects to build, own, or operate grid-side system enhancements to integrate distributed energy resources, such as energy storage. The Company is participating in this proceeding, in part to better understand the efficiencies that could be realized from battery storage.

Also, Eversource works with customers on a continuous basis for customized energy efficiency measures (see response to Q-OCC-026). Additional incremental efficiencies can be realized from the energy efficiency programs.