September 9, 2016

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

Re: Docket No. CSC 468 - SWCT Plumtree to Brookfield Junction

Dear Mr. Stein:

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

Response to CSC-01 Interrogatories dated 08/26/2016
CSC-001, 002, 003, 004, 005, 006, 007, 008, 009, 010

Very truly yours,

Kathleen Shanley
Manager
Siting,Transmission
As Agent for CL&P
dba EversourceEnergy

cc: Service List

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
In regards to certified mailings to the landowners abutting both substations, were return receipts received for each landowner? If not, please list the abutters that did not receive the certified mailing.

Response:
Eversource received return receipts from each landowner abutting the substations, with the exception of those listed below. Eversource sent an additional notice via first class mail to the four abutters from whom Eversource did not receive return receipts.

Brian C & Monica Ann Walters, owner of property at 32 Walnut Hill Road, Bethel, abutting Plumtree Substation.
Raymond Estates Association C/O McCarthy, owner of property at 3 Deer Trail Road, Brookfield, abutting Stony Hill Substation
Estate of Gary R & Linda Culhane, owner of property at 9 Deer Trail Road, Brookfield, abutting Stony Hill Substation
Maybrook Railroad Company, owner of property at 1 Federal Road, Brookfield, abutting Stony Hill Substation

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
Are there currently any non-utility structures (e.g. barns, sheds, etc.) within the ROW that would have to be removed for the construction of the proposed project? If so, identify locations.

Response:
There is one location along this corridor where non-utility structures would have to be removed to support the new transmission line. The location is in the vicinity of Structure 1019 behind the Ability Beyond Disability building (Please see, Map Sheet 10 of 14 in Exhibit 2B ("100 Scale Maps") in Volume 5 of the Application). The dumpsters that are currently in the ROW would have to be relocated.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
Were H-frame structures considered for the new transmission line? Please describe the impact of installation of H-frames on visibility, land clearing, and potential future use of the existing ROW.

Response:
H-Frame designs were dismissed early on in the design process as the existing transmission line alignment and right-of-way do not allow for the installation of an H-Frame without expansion of the right-of-way. This would require an additional 10 feet of right-of-way width along much of the corridor. ROW clearing would similarly increase. The visibility of the corridor would continue to be dominated by the existing double circuit transmission line which is taller than the proposed transmission line configuration, and taller than a hypothetical H-Frame design. This corridor would not be able to accept an additional transmission line regardless of the configuration of this line.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
For ROW clearance limits in Eversource's transmission design, does Eversource only use NERC requirements or does Eversource employ a more conservative vegetative clearance. standard? Provide the standard(s) used for edge of ROW clearance.

Response:
Eversource has developed ROW clearing standards based on the NERC requirements and the National Electrical Safety Code. Eversource's clearing standard for a project of this type would require 25 feet of vegetation clearing from the centerline of construction (10 feet more than is cleared presently). In 2015, Eversource began implementing in Connecticut, an enhanced ROW vegetation management program in response to the heavy snow storm of October 2011, during which 22 transmission circuits were interrupted (some with collapsed structures) by falling trees, many of which were located within the ROW. In addition, following the October 2011 snow storm, NERC and FERC prepared an investigation report, which recommended that utilities work towards reclaiming full widths of rights-of-way where feasible. See United States Department of Energy, Federal Energy Regulatory Commission and the North American Electric Reliability Corporation, *Report on Transmission Facility Outages during the Northeast Snowstorm of October 29-30, 2011 - Causes and Recommendations,*May 31, 2012 (Connecticut Siting Council Administrative Notice List - Docket No. 468, item 8). For the Project right-of-way, the enhanced vegetation management represents an increase of 15 feet of clearing beyond the 10 feet noted above.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
Application p. 4-25 discusses five structures that would be located in the floodway of Limekiln Brook and East Swamp Brook. What is the anticipated permanent floodway displacement for each structure? Is it possible to eliminate one or two structures in the floodway by increasing the distance between structures?

Response:

Using an estimated foundation diameter of 8 feet and foundation height required to get the structure base above the flood elevation, the displacement for structures located within the floodway are as follows:

- Structure 1004 – 221.1 cu. feet (8.2 cu. yards)
- Structure 1006 – 295.9 cu feet (10.9 cu yds)
- Structure 1007 – 50.3 cu feet (1.8 cu yards)
- Structure 1008 – 301.6 cu feet (11.2 cu yards)
- Structure 1011 – 402.1 cu feet (14.9 cu yards)

A U.S. Army Corps of Engineers Hydraulic Engineering Center-River Analysis System ("HEC-RAS") study was performed to assess the effect of putting new structures in the East Swamp Brook / Limekiln Brook floodplain/floodway. These calculations resulted in a maximum increased flood elevation of 0.002 feet.

In addition, Eversource reviewed a number of options to avoid placing structures within the floodway. However, as discussed further below, because of the extent of the flooplain / floodway within and along the existing Eversource right-of-way (ROW), the use of these options would require expansion of the ROW and/or taller structures to accommodate the resulting long spans. The Application, Volume 5, Appendix 1C (Mapsheet 1 of 2) illustrates the locations of all five structures within the floodway and in relation to the floodplain and Eversource ROW.

One of the options to avoid structures within the floodway that Eversource examined was to increase the height of two of the planned structures to increase the span length between them, eliminating the need for the middle structure. However, this option is not viable as the conductor swing of this new longer span would interfere with the existing line. Like several other options Eversource examined, this option would require acquisition of easement rights over additional property and expansion of the ROW to provide adequate clearance from the existing line to the proposed line.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
On Application p. 10-11, the feasibility of solar photovoltaic generation as a Non-Transmission Alternative is discussed. Generally, how many acres of land would be required for 1 MW of solar electric generation in Connecticut?

Response:

Typically, 5 acres of land is required for each MW of solar electric generation in Connecticut.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
What is the benefit of the full bus at the Stony Hill Substation?

Response:
The benefit of the reconfiguration of the Stony Hill 115-kV Substation is to enhance reliability by simplifying the transmission system configuration in a least-cost manner to address the reliability problems in the Housatonic Valley subarea. In addition, this reconfiguration would eliminate the need for and associated cost of system upgrades to reconductor other existing 115-kV transmission lines and to install additional equipment to provide reactive compensation in the local area.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
In regards to Application p. 2-12, why was a generation capacity of 10 percent selected for the Bulls Bridge generating station and 0 percent for the Rocky River and Shepaug generating stations? Please elaborate as to the type of hydroelectric generation and how these stations are dispatched.

Response:

These hydro generating stations were dispatched based on the historical data available at the time this study commenced. ISO-NE determined that the Shepaug and Rocky River generating stations should be modelled as being off line. ISO-NE also determined that the Bulls Bridge generating station should be modeled as operating at 10% of its nameplate capacity consistent with the ISO-NE Transmission Planning Technical Guide. These generating stations are the following types of hydroelectric generation: Bulls Bridge is run of river, Rocky River is pumped storage and Shepaug is run of river with a reservoir.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
In the event of a serious outage, would the three hydro-electric plants in the Housatonic Valley sub-area be dispatched even if the facilities were not previously scheduled to operate?

Response:

Yes, these hydro-electric plants would be dispatched by system operators, if water resources are available, to serve customer load in the event of a serious transmission facility outage.

Witness: **Witness Panel**
Request from: **Connecticut Siting Council**

Question:
Application page 2-13 states ISO-NE is conducting a supplemental analysis of the impact of theTowantic Generating Station in Oxford in the power-flow modeling study. Is it anticipated that future operation of the Towantic facility will have little bearing on the need for the proposed project? Would the supplemental analysis change the findings of the CELT forecast?

Response:

Yes, Eversource anticipates that the proposed Towantic Generating Station will have little bearing on addressing the reliability problems in the Housatonic Valley subarea because it is electrically remote from this area. Moreover, this supplemental analysis is primarily focused on the impact of this proposed generating station on the need for reliability upgrades in the Frost Bridge - Naugatuck Valley transmission corridor between the Frost Bridge and Devon Substations, not the Housatonic Valley subarea. The Towantic Generating Station supplemental analysis would not change the CELT forecast because the CELT report does not include future generation.