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March 23, 2012

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

Re: Docket No. CSC 424 - Interstate Reliability Project

Dear Mr. Stein:

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

Response to CSC-01 Interrogatories dated 03/09/2012
CSC-002, 003, 005, 006, 007, 009, 010, 013, 017, 018, 019, 020, 021, 022, 026

Very truly yours,

Robert Carberry 1dd.

Robert Carberry
Manager
Siting and Permitting
NUSCO
As Agent for CL&P

cc: Service List

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
What is CL&P's policy regarding the removal of "danger trees" that are outside of the easement? Does CL&P have to obtain permission from property owners for removal of vegetation outside of the easement area?

Response:

In general, CL&P's policy on removing trees that are outside the easement is limited to hazard trees only. Hazard trees are those danger trees that exhibit visible defects, damage or problematic growth conditions that make these trees a greater risk of failing, falling into the transmission right-of-way and contacting the transmission facilities.

The ability to remove these trees from outside the easement is predicated on the easement language. Some easements grant off right-of-way danger tree rights that would allow the company to remove danger trees from outside the right-of-way. Absent language in the easement granting off right-of-way danger tree rights, any tree that is outside the easement and is considered to be a hazard would require the permission of the underlying property owner for removal.

As a general practice, CL&P notifies and discusses all tree removals with the underlying property owner regardless of the location of the tree(s).

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
The application (vol. I, p. 1-14) states that the proposed project would not electrically connect to Killingly Substation. Would there be any benefits to making this electrical connection?

Response:

The Need and Solution Analyses performed for the Interstate Reliability Project did not indicate the need to electrically connect the new 345-kV Lake Road to West Farnum #341 line with the Killingly Substation. Typically there are reliability benefits associated with connecting an additional 345-kV transmission line to a substation, especially when the remote terminal of that 345-kV transmission line is connected to a strong independent source. However, the added transmission system and customer reliability benefit that would result if the Lake Road to West Farnum #341 transmission line is connected to Killingly Substation does not currently justify the additional substation modification costs.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
In terms of power-flow modeling, is the generation considered "out-of-service" the same as generation that is considered "retired"?

Response:

An out-of-service generator is an active generator that is off line for any of a number of reasons, whereas a retired generator is inactive in the marketplace and not being bid or maintained. In power-flow modeling, generators that are "out of service" or "retired" are not dispatched and thus do not provide electric power output. The net effect is that in power-flow modeling, there is no difference between the two (i.e., both classifications are not available for dispatch).

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
What is the typical Connecticut import level?

Response:

Based on actual recorded hourly data, the average Connecticut import level for the period of June, 2007 through December, 2011 is 887 MW. There were 1,220 hours when the Connecticut Import level exceeded 2,000 MW and 128 hours when the import level exceeded 2,500 MW. The highest recorded import level was 2,977 MW. In 2011, there were 23 hours when the Connecticut Import exceeded 2,500 MW, the highest level being 2,754 MW on November 15, 2011.

Year	Number of Hours CT Import Exceeded 2,500 MW	Maximum Hourly CT Import Level	Number of Different Days CT Import Level Exceeded 2,500 MW	Period In Which Peak CT Import Demand Occurred	CT Imports Greater Than 2,500 MW Occurred In Summer & Winter Period
2008	54	2,977	13	Winter	Yes
2009	36	2,802	10	Winter	Yes
2010	15	2,754	4	Summer	Yes
2011	23	2,759	8	Winter	Yes

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
Is the delta configuration proposed in the "focus areas" part of the base design of the project, included in the base costs?

Response:

No. The base design of the project reflects standard good utility practice and incorporation of only no-cost magnetic field mitigation design features, as specified by the Council's EMF Best Management Practices (BMP). In each of the focus areas, the base design is therefore an H-frame line with optimum phasing. Per the note beneath Tables 6, 7, 8, 9 and 15 in CL&P's Field Management Design Plan, the base project cost without implementing BMP designs in any of the focus areas is $213.7 million.

CL&P has assumed that extra costs would be incurred in two of the three Focus Areas (i.e., A and D, but not E) where CL&P indicated in its Field Management Design Plan that a delta line configuration would be the most appropriate BMP alternative to the base line configuration. CL&P's project cost estimate of $218 million therefore includes $4.3 million of additional costs for the delta designs in Focus Areas A and D.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
Do any existing towers along the right-of-way on which the proposed project would be aligned have marking or lighting per the Federal Aviation Administration?

Response:

None of the existing structures along the Project right-of-ways in Connecticut currently have any marking or lighting for Federal Aviation Administration (FAA) requirements.

CL&P submitted preliminary applications to the FAA in 2009, and as reflected in the Application, several of the existing and proposed structures received a Notice of Presumed Hazard from the FAA at that time. For a majority of the structures subject to these notices, the FAA recommendation at the time was to light and mark the taller of the adjacent structures (existing or proposed) that are in close proximity, unless CL&P requested further study.

Additional study was not conducted at that time but the Company plans to resubmit those FAA applications for aeronautical study to obtain updated guidance on the latest design information.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
In the application (Vol. lA, p. 13-30) Table 13-4 provides a comparison of"Options." Please provide this information for the Connecticut only portion of the project.

Response:

Table CSC-010-1 on page 2 of 2 reproduces Table 13-4, which compares Options C-2.1 and the A-Series Options in Connecticut, Rhode Island, and Massachusetts, and includes an additional comparison of the Connecticut-only portions of Option A-1 and Option C-2.1.

All four of the A Series Options discussed in Section 13.1.4.3 of Volume 1A would involve the construction and operation of the same new transmission facilities in Connecticut. The differences in the A Options pertain to variations in Rhode Island and Massachusetts only. Therefore, for the purposes of this analysis, all references are to "Option A-1" and Option C-2.1.

However, a "Connecticut only" comparison is misleading because both of these options would involve new 345-kV transmission lines and related modifications to substations and switching stations in three states (Connecticut, Rhode Island, Massachusetts), and under either option, the Connecticut portion would constitute less than 50% of the total length of the new 345-kV transmission lines that would be required. Specifically, the Connecticut portion accounts for approximately 49% (36.8 miles) of the total 75 miles of new 345-kV transmission lines required for Option A-1 (the preferred Project) and for approximately 24% (20 miles) of the 84.3 miles of new 345-kV lines that would be developed for Option C-2-1.

Moreover, compared to Option A-1, Option C-2-1 would involve approximately 16.8 fewer miles of new 345-kV transmission line construction in Connecticut. Focusing solely on a comparative evaluation of the Connecticut portions of these options, Option C-2.1 would appear misleadingly superior on the basis of certain factors (e.g., fewer watercourse crossings). However, in fact, as summarized in Table 13-4 and reproduced in the attached Table, compared to Option A-1, developing the Project using Option C-2.1 actually would:

- Involve more miles of overall transmission line construction (when considering all three states);
- Result in greater environmental disturbance and potential effects on environmental resources such as forestland, wetlands, streams, and state threatened and endangered species habitat;
- Entail construction of the new 345-kV transmission lines within 500 feet of substantially more homes
- Require more modifications to existing substations, including outside-the-fence developments at Manchester Substation in Connecticut and at Carpenter Hill Substation in Massachusetts;
- Be more costly.

Finally, compared to Option C-2-1, Option A-1 provides more benefits to the transmission system in Southern New England and thus better achieves the Project objectives.

Even considering only the Connecticut portions of Options C-2-1 and A-1, as illustrated in the Table CSC-010-1, Option C-2.1 has certain environmental disadvantages. For example, although the Connecticut portion of Option C-2-1 is substantially shorter than the Connecticut portion of Option A-1, the Option C-2-1 ROW would extend across more total wetlands in Connecticut (5.6 miles vs. 2. 9 miles for Option A-1) and would be located within 500 feet of more residential areas (370 homes within 500 feet of the new 345-kV transmission line centerline along Option C-2.1 vs. 213 homes within the same distance from Option A-1).

Table CSC-010-1
Comparison of Connecticut Only Portions of Option A-1 and Option C-2.1: New 345-kV Transmission Lines and Related Substation and Switching Station Facilities

Feature	Options: Three States (CT, RI, MA)		Connecticu	
	A Options (Range for Options A-1 through A-4)	Option C-2.1	Option A-1	
New 345-kV Transmission Line Length (Miles)	74.7-83.7	84.3	36.8	
Length through wetlands (Miles)	5.2-6.2	11.9	2.9	
Watercourse Crossings (Number)	118-121	177	68	
Upland Forest Traversed (Miles)	36.7-39.2	54.0	21.1	
Wetland Forest Traversed (Miles)	2.3-3.1	3.3	1.2	
Parkland Traversed (Miles)	2.7	2.9	0.7	
Length through Rare, Threatened or Endangered (Listed) Species Habitat (Miles)	14.8-15.3	18.1	11.9	
Residences within 500 feet of new 345-kV transmission line centerline (Number)	478-532	942	213	
ROW Expansion Required (Estimated Acres)	0-4.8 (Mansfield Hollow Area, CT)	< 1 (Manchester, CT)	0-4.8 Mansfield Hollow Area, CT)	(
Total Additional Land to be Converted to Utility Use for Substations or Switching Stations (Estimated Acres) (*Includes CL&P / NGrid property outside existing station fence lines and private property)*	4-15 (4 acres: Sherman Road Switching Station, RI) (11 acres: Uxbridge switching station, MA (Option A-3)	3.5 (Carpenter Hill, MA, Manchester, CT)	0	

Notes:

1. ** Since publication of the CSC Application, CL&P has changed its preferred configuration across the Mansfield Hollow properties from the Proposed Configuration (11 acres) to the Minimal ROW Expansion Option (4.8 acres)*
2. *Shaded portion of table compares new 345-kV transmission lines and related substation and switching station modifications that would be required for the A Options and Option C-2.1. Non-shaded portion is Connecticut only portion of Option A-1 and Option C.2-1.*
3. *All linear miles across features are calculated based on the presumed centerline of the new 345-kV transmission line.*
4. *Additional easement acquisition is proposed for the new 345-kV line (all A Options) in Mansfield Hollow (CT); however, CL&P has also identified a design option that would not require any additional easement.*

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
Would construction of the proposed project temporarily hinder access to state-designated linear trails (e.g. the Airline Trail, Hop River State Park Trail, Nipmuck Trail, etc.) that cross the transmission line right-of-way?

Response:

Public access trails in the Project area should be temporarily blocked at certain times of the construction to ensure public safety. These times would include, but are not limited to, tree clearing activity, critical crane lifts, and during any installation of implosive connectors. Efforts would be made to detour trails outside of construction areas when and where practical. Trail closures would be coordinated with the various agencies associated with the specific trails, and Project personnel would be posted in areas during those times for additional protection.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
Do any wireless telecommunications carrier antennas exist within the ROWs that would be impacted by the proposed Interstate project? If so, identity existing locations?

Response:
There are currently no existing wireless telecommunications carrier antennas within the Project ROW.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
Would the use of herbicides for maintenance of vegetation be restricted in or near wetlands or waterbodies?

Response:

The use of herbicides for the maintenance of vegetation within the right-of-way would follow all federal and state requirements affecting these applications.

CL&P has a self-imposed setback distance from water within which herbicides are not applied when treating brush. The current specification lists this setback distance at 10 feet for routine brush-control work.

The control of wetland invasive species may require herbicide applications to areas where standing water is present. The products used to control invasive species in areas where standing water is present must be labelled and approved for these applications by federal and state agencies that regulate pesticide use. Treatments that may involve applications to standing water will require a site-specific application permit.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
What measures would be employed to control any undesirable invasive plants which may become established along areas cleared during construction? How long would these measures be employed?

Response:

With all new transmission construction projects, an Invasive Species Control Plan is required by the Connecticut Department of Energy and Environmental Protection (DEEP), as well as the U.S. Army Corps of Engineers, that includes the control measures to be used for invasive plants.

Measures to control invasive plant species that may become established following construction depend on the location of the infestation.

In wetlands, all invasive plant species will be monitored, and control measures will be employed on a four-year cycle following the completion of the project. In upland areas, a selected list of woody invasive plants would be controlled during CL&P's routine, cyclical brush-control program, which is performed once every four years.

The preferred method for controlling invasive plants will be through selective applications of federal- and state-approved herbicides.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
What is the typical distance between each proposed transmission structure along the ROW?

Response:
The distance between each proposed structure (referred to as span length) varies considerably over the length of the line. Some spans are less than 200 feet long, while others are over 1000 feet long. Geographic and environmental features will often dictate the design spans. The average span length for the proposed Interstate Reliability Project will be approximately 575 feet, which is similar to the average span of the existing 345-kV lines in this ROW. The initial design layout attempts to place proposed structures adjacent to existing structures where practical. Locations of those proposed structures are then refined in order to minimize environmental impacts or avoid conflicts with other features where practical.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
What is the minimum distance that the proposed transmission line could be installed from the existing lines?

Response:

The proposed transmission line is designed in accordance with Northeast Utilities Design Standards that consider clearance requirements of the National Electrical Safety Code, as well as required distances for line workers to work on one line from lift vehicles while maintaining safe distances to the conductors of an adjacent line.

As shown on the typical cross-section drawings included in the Application, the base H-frame design places the center conductors of the new line 85 feet away from the center conductors of the existing 345-kV line. The two closest conductors of each line are then approximately 32 feet apart, which is the minimum allowed by Company standards for lines of this voltage. This distance cannot be reduced without compromising the ability to maintain these lines in the future without taking the adjacent line out of service. Line outages, especially those involving major 345-kV interstate lines, are often difficult to schedule, and can result in additional costs to consumers to run out-of-merit generation during the line outage. CL&P's standards aim to allow for necessary maintenance work to be performed on one line without having to take adjacent lines out of service.

Witness: **CL&P 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?

Response:

Based on spot field reviews and aerial photography, there are several small sheds within the ROW, as well as other potential obstructions, such as pools, fences and debris piles. There are potential safety concerns associated with any non-utility structure in the ROW, and reviews will be needed to determine if these objects require removal or relocation for the safe construction and/or operation of the new line.

CL&P will complete a full walk-down of the entire route closer to the start of construction to document all non-utility structures within the ROW. Thereafter, CL&P will determine which structures will impact construction access and/or the future safe operation of the line. CL&P expects to require some removals of non-utility structures in the ROW for either the safe construction or operation of the lines.

Witness: **CL&P Panel**
Request from: **Connecticut Siting Council**

Question:
What is the current status of and when does CL&P expect to receive necessary local, state and federal permits?

Response:

Federal Permits:

CL&P is preparing to file an application with the U.S. Army Corps of Engineers (USACE) in May 2012 in relation to permits sought under the Clean Water Act Section 404. Note that CL&P will file this permit application with National Grid for the entire 75-mile Interstate Reliability Project in Connecticut, Rhode Island and Massachusetts.

State Permits:

CL&P is preparing to file an Application with the CT Department of Energy and Environmental Protection in July 2012 for a Water Quality Certification under Section 401 of the Clean Water Act.

CL&P will prepare and file encroachment permits for new transmission line crossings of state highways with the CT Department of Transportation during the construction phase of the Project.

Local Permits:

No local permits are required for the Interstate Reliability Project in Connecticut. No location approvals are required for the proposed substation modifications because all proposed modifications are to be made inside existing substation fenced areas.

Following a completeness/sufficiency determination by each agency, CL&P anticipates one-year review periods leading to receipt of all necessary permits by the end of 2013.