

**Interstate Reliability Project**  
**CEII Appendix, Part B – Physical Security of Proposed Facilities**  
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## **I. INTRODUCTION**

This section complies with Section N(4) of the Connecticut Siting Council's (Council's) *Application Guide for Electric and Fuel Transmission Line Facilities (April 2010)*, which requests a description of siting security measures for the proposed facility, consistent with the Council's "*White Paper on the Security of Siting Energy Facilities*," as amended, initially adopted in the Council's Docket 346 on September 28, 2009. As stated in the *White Paper*:

"Generally speaking, siting security in this document does not relate to operational, reliability, and maintenance procedures affecting electric facilities, asset connection requirements, or naturally caused calamities (for example, hurricanes or ice storms). Most of these security concerns are predictable and the Council already factors them into its siting decisions. Moreover, most storm threats involve the electric distribution system, which is not under the Council's purview. *White Paper*, at pp. 1, 2.

The *White Paper* Guidelines focus on the unpredictable intentional act of perpetrators designed to damage the physical structures of the certificated facilities (as opposed to, for instance, cyber security). In light of the limitations of the Council's jurisdiction, this description will be limited to measures relevant to the Connecticut portion of the proposed new Interstate Reliability Project ("IRP", "Interstate", or "Project") 345-kV transmission line to be constructed along The Connecticut Light and Power Company's ("CL&P's") existing rights-of-way (ROWs) from the Card Street Substation to the Lake Road Switching Station, and from there to the Connecticut / Rhode Island border.

## **II. SUMMARY OF PHYSICAL SECURITY MEASURES**

The following summary follows the format suggested by the Council at pages 5 and 6 of its *White Paper*, which focuses on security issues associated with four areas: Planning, Preparedness, Response, and Recovery. Each section first presents the discussion topic included in the *White Paper*, and then provides CL&P's proposed security approach for the issue area.

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**A. PLANNING**

**A.1. Identification**

Identify the physical vulnerabilities most likely to pose a security threat.

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**A.2. Facility type/characteristics**

**Identify the type and characteristics of the facility and any ways in which the facility's setting affects security concerns.**

CL&P proposes to install the new 345-kV transmission lines on three different types of structures. The basic structure type would be H-frames, with typical heights of approximately 85 feet, which is similar to the most common structures already on the ROWs. CL&P also proposes to use steel monopoles in specific areas, as follows:

- Steel “delta configuration” monopoles with a typical height of 110 feet (Best Management Practice [BMP]), along a segment of ROW in the Town of Coventry and the western portion of the Town of Mansfield.
- Steel “delta configuration” monopoles with a typical height of 125 feet along a 1-mile segment of ROW in the eastern portion of the Town of Mansfield (Mansfield Hollow State Park and Mansfield Hollow Wildlife Management Area).
- Steel “delta configuration” monopoles with a typical height of 110 feet (BMP), along a segment of ROW in the Town of Brooklyn.
- Steel monopoles with vertically configured conductors averaging 130 feet in height between Lake Road Junction and the Lake Road Switching Station.
- Steel “delta configuration” monopoles with a typical height of 110 feet (BMP) along a 0.6-mile segment of ROW in the Town of Putnam; in addition to the use of these monopoles for the new 345-kV line, six H-frame structures along the existing 345-kV line would be removed and replaced with steel “delta configuration” monopoles along this segment.

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- Steel three-pole deadend structures averaging 90 feet in height at line angles.

In addition, steel monopoles of a height to be determined (but likely more than 120 feet), could also be used if the Council determines that reduced magnetic field line designs should be constructed near certain additional Statutory Facilities (refer to the discussion in Volume 1, Section 7, Appendix 7B).

The typical structure heights identified above are based on lines over flat terrain. The actual height of each structure is dependent upon its location, span lengths, and the topography along the ROW. The primary characteristics of each type of structure, and the typical ROW configuration for lines using each type, are depicted on the cross-section drawings in Volume 1 (Section 3, Appendix 3A), on the Volume 9 maps, and in Volume 10.

The new circuits will be designed for nominal 345-kV operation and will consist of three phases, each of which will consist of a bundle of two 1,590,000 circular mil (1590-kemil) aluminum conductors with steel reinforcement (ACSR). The circuits will be protected by an overhead lightning shield wire of 19 No. 10 Alumoweld, plus an additional shield wire which will contain optical glass fibers for communications purposes.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



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[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**A.4 AWARENESS**

**Examine if there is an established method to help regional, state and national security officials maintain situational awareness of this facility.**

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

**B. PREPAREDNESS**

**B.1 Support infrastructure**

**Examine site security infrastructure, including site monitoring, physical and nonphysical barriers and access controls**

CL&P will prepare its physical security plan for the proposed facility in accordance with the guidelines of NERC's Physical Security Concepts Overview. Physical security typically comprises eight distinct concepts:

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- **Deter** – visible physical security measures installed to induce individuals to seek other less secure targets.
- **Detect** – physical security measures installed to detect unauthorized intrusion and provide local and/or remote intruder annunciation.
- **Delay** – physical security measures installed to delay an intruder’s access to a physical asset and provide time for incident assessment and response.
- **Assess** – the process of evaluating the legitimacy of an alarm and the procedural steps required to respond.
- **Communicate** – communication systems utilized to send and receive alarm/video signals and voice and data information. Also, includes the documented process to communicate detected intrusions.
- **Respond** – the immediate measures taken to assess, interrupt, and/or apprehend an intruder.
- **Intelligence** – measures designed to collect, process, analyze, evaluate and interpret information on potential threats.
- **Audit** – the review and inspection of physical security measures to evaluate effectiveness.

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

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[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**B. 2. Personnel**

**Review any simulated exercises that include local police, fire, and other emergency response teams.**

**Examine whether local law enforcement/emergency response liaison is in place, and review mutual aid agreements between affected entities.**

CL&P has regularly consulted with first responders in the municipalities along the Project ROWs, which have been occupied by the existing 345-kV transmission lines for decades. The addition of the proposed new line will not call for any change in the established procedures for notification and response. CL&P is cognizant of the capabilities and needs of these first responders. Should the Council approve this Project, depending on the route approved, CL&P will assess, in consultation with the Connecticut Department of Emergency Management and Homeland Security (CTDEMHS) and local first responders, regarding the type of simulated exercises that may be needed.

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The CTDEMHS Training and Exercise Division sponsors emergency preparedness training, seminars, exercises, and conferences for local first responders as defined in Homeland Security Presidential Directive 8 (i.e., police, fire, emergency management, emergency medical services, public health, public works, private sector, non-governmental organizations and others) that are designed to cover Mitigation, Preparedness, Response and Recovery. CL&P is represented on the Private Sector Council of DEMHS, which meets quarterly and more frequently as needed.

CL&P has participated in state and regional emergency exercises in the past. CL&P will continue to consult with CTDEMHS's Training and Exercise Division which is responsible for the establishment of training programs and the development, delivery and evaluation of exercises. CL&P hosts training exercises for CTDEMHS, the Connecticut Department of Health Services, and the Federal Emergency Management Agency, including exercises related to potential terrorist incidents on the electric transmission systems. CTDEMHS also works collaboratively with local, state, tribal, and federal partners to coordinate and conduct training and exercises in accordance with the agency's strategic plan. The identification of and development of training to prevent or respond to security threats is a dynamic and evolving process.

Connecticut municipalities maintain various relationships with neighboring first responders through the Intrastate Mutual Aid System. The Intrastate Mutual Aid System allows each town in the state to receive or provide mutual aid from or to any other town in the state, regardless of whether there is a pre-existing agreement between the towns. (Please refer to Conn. Gen. Stat. Section 28-22a.) Subsequent to the Council's approval of the Project, CL&P would pursue liaisons and mutual aid agreements with the municipalities along the transmission line route.

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**C. RESPONSE**

**C.1. Access to information**

**Examine notification procedures to public and/or local officials, including the types of security issues that would warrant such notification.**

The addition of a second 345-kV transmission line to an existing ROW will not require any change in existing, pre-established public notification procedures. Nevertheless, during the Municipal Consultation Filing process for the Project, CL&P personnel met with a number of first responders from the host towns along the preferred route for the new 345-kV line. Following NERC and CONVEX protocols and after the Project is approved and a final Project design is developed, CL&P will coordinate further with such officials to discuss the best mechanisms for communicating incidents.

An example of a risk to public health that would require clear and immediate communication and coordination with local officials would be an incident involving downed conductors (i.e., transmission lines that are separated from the support structures and extend near the ground, where contact with people may be possible). In response to such an event, CL&P would implement protocols similar to those it would use when a transmission line is disrupted by a major storm. Those protocols include dispatching crews to isolate and assure that the conductors are deenergized, working closely with the local police and fire officials, and implementing a public outreach process for notifying appropriate media outlets. To alert the public to the dangers of exposed or accessible electrical lines and equipment, CL&P presently maintains a continuing education program through public service announcements, bill inserts and other public outreach programs.

The other possible security issue would be an incident related to the Project at the Card Street or Killingly substations or the Lake Road Switching Station. Because they are existing stations, CL&P has

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established protocols for notifying the appropriate local government officials and response agencies. If required based on the type of incident, CL&P would implement a public outreach process for notification of appropriate media outlets.

**C.2. Mitigation**

**Examine mitigation measures, including alternate routing of power, strategically located spares and mobile backup generation.**

As discussed in Volume 1, Section 2 of the Project Application, the addition of this facility would serve to improve the reliability of the grid in Connecticut. In the event of the interruption of the new line, power flow would be automatically redirected to other lines, as described in Section 2. CL&P continually prepares for outage contingencies. The system is planned and operated so that the sudden and unexpected loss of the new line would not result in a widespread loss of load or in damage to utility or customer equipment.

CL&P keeps an inventory of spare equipment to enable it to quickly restore facilities to service after most failures. For example, temporary transmission line support structures are maintained in depots from which they may be quickly transported to the ROW. Spare transformers and substation and switching station equipment are located either at the station or in a central storage area to be deployed as may be required. Moreover, most substations contain a circuit switcher and a disconnect switch to facilitate the installation of a mobile transformer in case one of the permanently installed transformers is removed from service for prolonged period of time. Since transformers could fail without warning, CL&P is prepared to quickly respond to a transformer failure.

During the response to an incident, natural resources at or adjacent to the site would be protected to the extent practical and subsequently restored to pre-incident conditions as appropriate. In the event of an

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incident, the first priority would be to eliminate any threat to public safety and to then repair the transmission facilities. Any natural resources damaged as a result of the incident would then be mitigated as appropriate to the type of impact. In general, the resource protection and mitigation measures expected to apply would be the same as those employed during Project construction (refer to Volume 1, Sections 4 and 6 of the Project Application to the Council). If wetlands or water resources are involved, mitigation protocols would be coordinated with the appropriate resource agencies, such as the U.S. Army Corps of Engineers and the Connecticut Department of Energy and Environmental Protection.

#### **D. RECOVERY**

##### **D.1. Recovery Measures**

**Identify measures that will be taken, if necessary, to restore natural resources at the site of the facility.**

Recovery from any environmental disturbance due to an untoward event would depend largely on the nature of the incident and the environmental disturbance created by the incident and by the repairs subsequently required to the transmission facilities. CL&P would expect to employ the environmental construction precautions similar to those discussed in Volume 1, Section 4 of this Application. In addition, the Project-specific Development & Management Plan would provide further resource-specific information to guide to environmental restoration in areas that might be affected by an incident. Furthermore, CL&P's overall ROW vegetation management standards provide guidance for water resource protection and wildlife habitat restoration along ROWs.

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**D.2. Reporting**

**Determine whether reporting procedures are established to evaluate and improve the effectiveness of local emergency response teams, methods to limit negative impacts on neighboring electric facilities, and restoration of the natural environment.**

CL&P will investigate and analyze any incident and its response. CL&P will maintain regular contact with the local first responders and relevant public officials, including CTDEMHS. In addition, CL&P will review its conclusions with appropriate public officials to improve the capabilities of local first responders' reactions, if required.

CL&P's post-incident evaluation process is required by federal and regional regulatory authorities to examine what may be needed to be done to improve on its response. Additionally, CL&P's self analysis will evaluate what improvements may be needed to minimize adverse effects on the environment and neighboring electric facilities in responding to future incidents.