

**PETITION TO THE  
CONNECTICUT SITING COUNCIL FOR DECLARATORY RULING**

**MODIFICATIONS TO  
THE HAWTHORNE SUBSTATION IN  
FAIRFIELD, CONNECTICUT**

**SUBMITTED BY  
THE UNITED ILLUMINATING COMPANY**

**October 30, 2014**

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

PETITION OF THE UNITED ILLUMINATING : PETITION NO. \_\_\_\_\_  
COMPANY FOR A DECLARATORY RULING THAT :  
NO CERTIFICATE OF ENVIRONMENTAL :  
COMPATIBILITY AND PUBLIC NEED IS REQUIRED :  
FOR MODIFICATIONS TO THE HAWTHORNE : October 30, 2014  
SUBSTATION IN FAIRFIELD, CONNECTICUT :

**PETITION FOR DECLARATORY RULING**

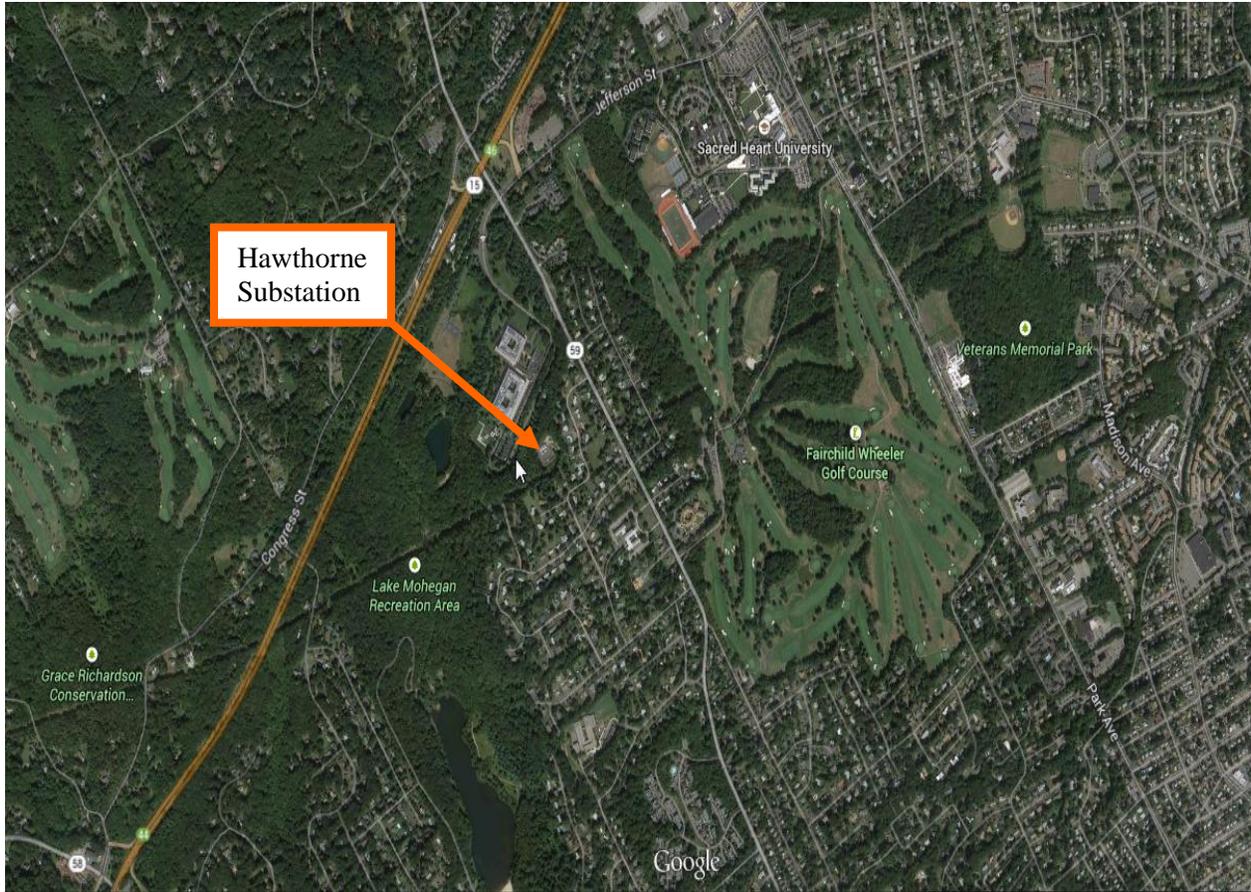
This petition is filed pursuant to Section 16-50k of the Connecticut General Statutes and Section 16-50j-39 of the Regulations of Connecticut State Agencies.

The United Illuminating Company (UI or the Company), an electric public service company specially chartered by the General Assembly of the State of Connecticut and having its principal place of business in New Haven, Connecticut, hereby petitions the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required pursuant to Section 16-50k of the Connecticut General Statutes for the project hereinafter described. UI submits that such certification is not required because the project, although it encompasses “modifications” of a “facility”, will not have substantial adverse environmental effect.

As part of the continuing effort to maintain a reliable electric power system in southwestern Connecticut, regional system studies have identified the need for two 20 MVAR 115 kV transmission capacitor banks to be installed at the Company’s Hawthorne Substation located at 180 Hawthorne Drive in Fairfield. *See* Figures 1 and 2. This project is necessary to

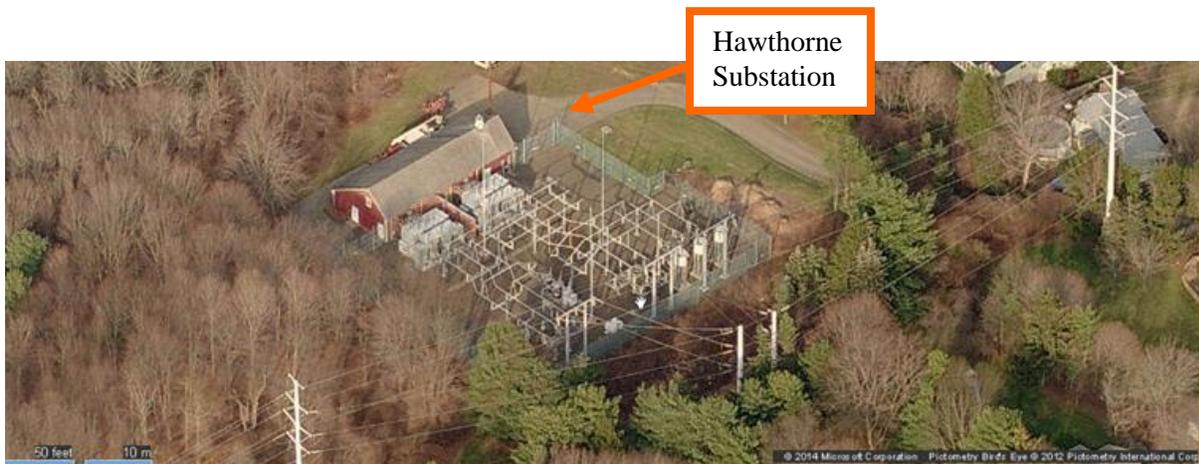
meet North American Electric Reliability Corporation reliability compliance requirements. The Southwest Connecticut Study determined that the [REDACTED] corridor of the 115kV electric transmission lines is subject to a single contingency [REDACTED] which results in system low voltages in the area. In addition, several ancillary component upgrades not directly associated with the capacitor bank, such as increased lightning protection, large equipment access, yard lighting and component replacements will be included in the project.

Therefore, UI is looking to install 2 20MVAR capacitor banks on the west side of the substation and connected to the 115kV electric transmission line that enters the substation from the west side. The project will be performed entirely within the property line of UI's Hawthorne Substation located at 180 Hawthorne Drive, in the City of Fairfield, Connecticut. *See* Figures 1 and 2.



**Figure 1: Overview map of the Hawthorne Substation location.**



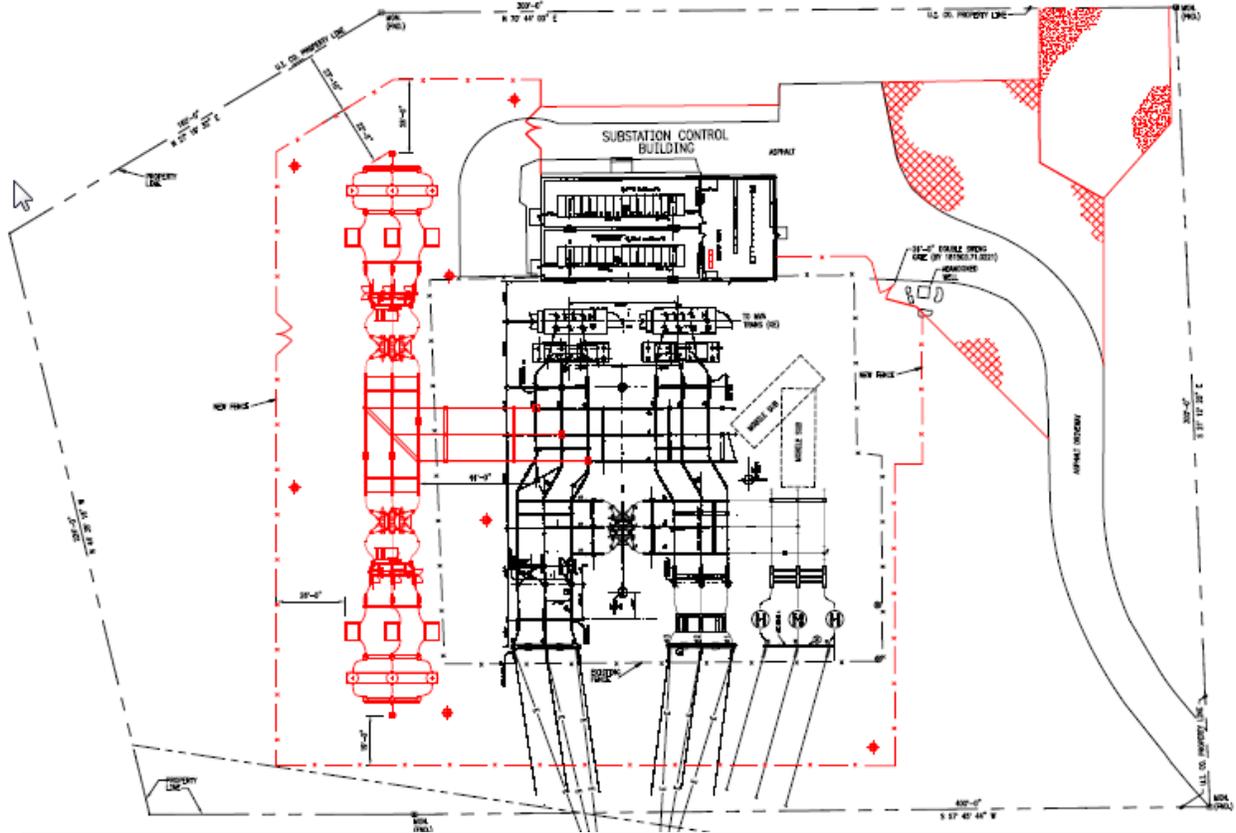


**Figure 2: Aerial photograph of Hawthorne Substation**



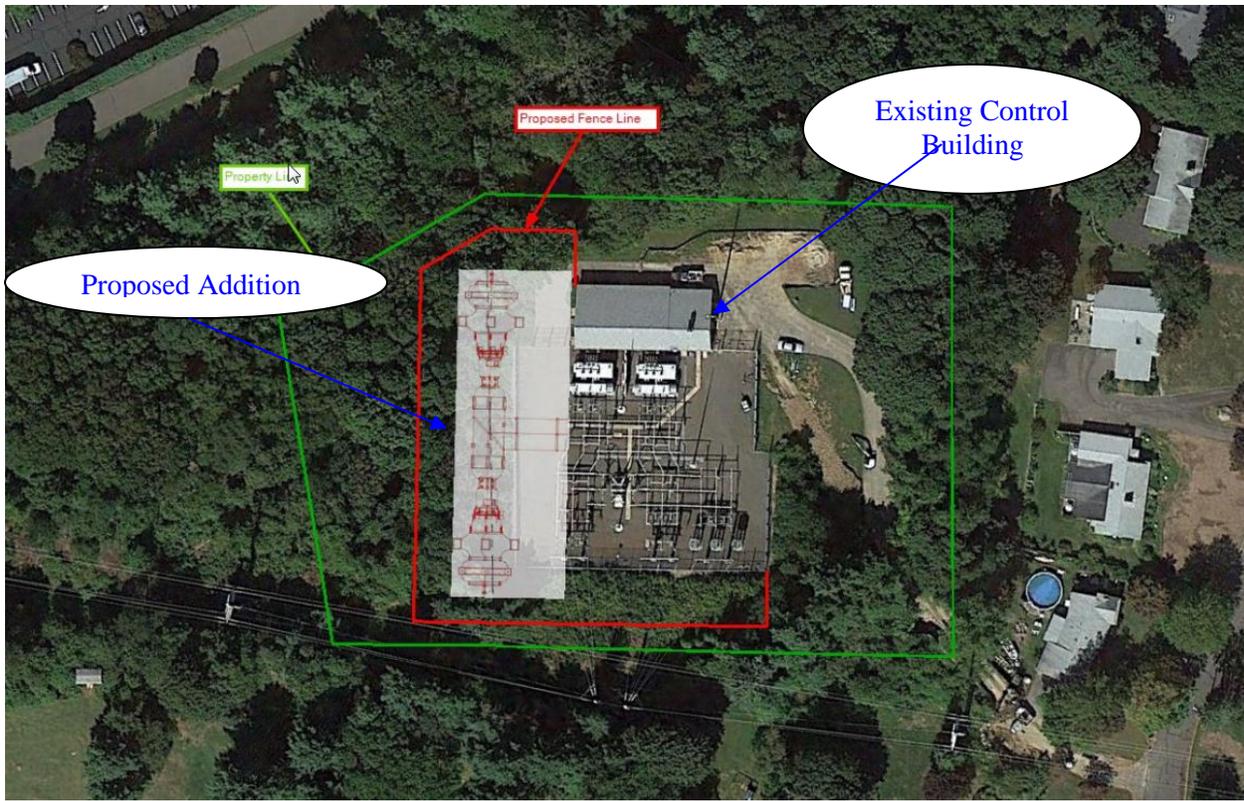
## PROPOSED MODIFICATIONS

The 115kV electric transmission line corridor is subject to a single contingency [REDACTED] [REDACTED] which results in system low voltages in the area. UI proposes to install two 20MVAR capacitor banks on the west side of the substation and connect them to the 115kV electric transmission line that enters the substation from the west side. To protect against lightning strikes, six new 70' lightning masts will be added to the west side of the site, as well as, one mast on the east to increase protection for the existing substation yard. Additional lighting will be added to the station to increase illumination of critical equipment. The fence surrounding the site will be expanded to accommodate the new equipment as well as additional large equipment access on the east side of the site. Drive access for large equipment on the east side of the site will be increased through the addition of new pavement and course aggregate in the northeast corner of the property. *See* Figure 3 and 4.



**Figure 3: Proposed modifications**





**Figure 4: Proposed modifications**



All of the modification work will be performed and located entirely within the property line surrounding the existing Hawthorne Substation. Construction impacts of the proposed project on the environment are expected to be minimal and will consist of short-term disturbances of surface soil incident to access and the placement of new and old hardware awaiting their disposition and the removal of approximately 40 trees averaging 1 foot in diameter on the westerly side of the substation between the General Electric facility and Hawthorne Substation, as well as low-lying shrubbery on the southerly side of Hawthorne Substation. The remaining trees will still serve as a buffer between General Electric and Hawthorne Substation. There will be a temporary increase in fugitive dust and noise levels attendant with typical civil

construction activities.

Any excess soils during site preparation will be stockpiled on site and characterized prior to disposal. Dewatering activities, if required, will be containerized and sampled before disposal. The project is anticipated to commence in February 2015 with projected completion by December 2015. The estimated cost of this project is approximately \$8,900,000.00 dollars.

Normal work hours for construction will be between 7:00 a.m. and 5:00 p.m. Work will proceed Monday through Friday, excluding some holidays. The proposed work hours may include evening and weekend work hours on a temporary and case-by-case basis in order to complete critical installation.

### **EXISTING FACILITY**

Hawthorne Substation is a 115kV to 13.8 kV distribution substation. The existing substation is located in an R-3 zoned area on a 2.8 acre parcel. The substation was built in the 1970's and consists of two 115kV incoming circuits with a 115kV tie breaker. In addition, the station has three 13.8kV distribution buses with a total of 15 feeder breakers along with four main breakers and one tie breaker. The major substation yard equipment includes: two 42/56/70MVA station power transformers, a 115kV tie breaker, two 115kV breaker isolation disconnect switches, two transmission circuit disconnect switches, two transformer high side disconnect switches, a 115kV circuit switcher, a 115kV series reactor, and various PT's, CT's and station service transformers. The Site is surrounded by mixed uses. To the north of the site is the General Electric property. To the south and east of the site are residential neighborhoods. Nearest existing equipment is approximately 210' away from the closest house. New fence is approximately 25' to 30' closer to neighbors to the south. *See Figure 5.*



**Figure 5: Existing Facility**



## DISCUSSION

UI has determined that two 20 MVAR 115 kV transmission capacitor banks need to be installed at Hawthorne Substation. Voltage violations in all dispatches from Old Town Substation to Hawthorne Substation exist [REDACTED]

Further analysis, when respecting N-1-1 conditions, shows the need for two separate 20 MVAR 115 kV transmission capacitor banks, following loss of one of the capacitors as a second contingency. Both of the capacitor banks will be connected [REDACTED] at Hawthorne Substation. To accommodate adding the two 20 MVAR 115 kV transmission capacitor banks (in-line, longitudinal configuration), the substation will be expanded in the westerly direction away from residential housing (along the eastern perimeter of the site) [REDACTED]

To properly protect the new capacitor banks and associated equipment from lightning strikes, six new 70' lightning masts will be added to the west side of the site, as well as, one mast on the east to increase protection for the existing substation yard. Additional lighting will be added to the station to increase illumination of critical equipment. The fence surrounding the site will be expanded to accommodate the new equipment as well as additional large equipment access on the east side of the site. Drive access for large equipment on the east side of the site will be increased through the addition of new pavement and course aggregate in the northeast corner of the property.

While the above-referenced work constitutes a “modification” of the existing facility, there will be no substantial adverse environmental impact associated with the proposed project:

- All work will be done entirely within the UI-owned Hawthorne Substation, making use of existing property. No additional property or right-of-way will need to be purchased or secured.
- The project will cause no significant effects on surrounding land use and aesthetics, terrestrial ecology, traffic or water quality.
- The project will not significantly impact the views from surrounding areas as all but one of the trees being removed are on the westerly side of the substation between the General Electric facility and the Hawthorne Substation, leaving the remainder of the existing trees as cover. One tree will be removed on the north-easterly corner of the property to enable large equipment access. The removal of the low-lying shrubbery on the southerly side of the substation will have no impact.
- Visual impact will be limited due to the proposed control enclosure height being equal to or less than the existing substation structure heights.
- There will be no change in operating noise levels at this facility as a result of the proposed modification.
- During construction, silt fencing will be installed to control erosion. Any excess soils left after construction will be stored onsite for characterization and disposal.
- During construction, sediment and erosion controls will be installed to control erosion per the “2002 Connecticut Guidelines for Soil Erosion and Sediment Control.” Any excess soils left after construction will be managed based on the pre-characterization of that material and where necessary disposed of in accordance with the necessary State guidelines and requirements.

Based on the above, UI respectfully submits that the proposed project will not have a substantial adverse environmental impact and does not warrant submission of a full Certificate application to the Council. Accordingly, UI requests that the Council declare that the proposed

project described herein will not have a substantial adverse environmental effect and, therefore, that no Certificate of Environmental Compatibility and Public Need is required.

The name, title, address and telephone number of the person to whom correspondence and communication in regard to this petition are to be addressed is:

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Very truly yours,

THE UNITED ILLUMINATING COMPANY

By: \_\_\_\_\_  
Richard J. Reed, PMP