STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

August 5, 2016

Mark R. Sussman, Esq.
Patricia L. Boye-Williams, Esq.
Murtha Cullina LLP
City Place 1, 29th Floor
185 Asylum Street
Hartford, CT 06103-3469

RE: **PETITION NO. 1240** - Wallingford Energy, LLC, on behalf of the Town of Wallingford Electric Division, petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to the town's existing Wallingford 13M substation located at 195 East Street in Wallingford and modifications to several existing town-owned 115-kV electric transmission lines including the reconductoring and extension of the 1305 line, the circuit-separation of the 1630 and 1640 lines and the potential re-routing of the 1208 line located in Wallingford, Connecticut.

Dear Attorneys Sussman and Boye-Williams:

At a public meeting held on August 4, 2016, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;

2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;

3. Approval of any minor project changes be delegated to Council staff;

4. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

5. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Wallingford;

6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

7. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;

8. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and

9. If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated June 24, 2016 and additional information received on July 26, 2016.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,

Robert Stein UHB

Robert Stein
Chairman

RS/MP/lm

Enclosure: Staff Report dated August 4, 2016

c: The Honorable William W. Dickinson, Jr., Mayor, Town of Wallingford
Kacie Costello, Town Planner, Town of Wallingford
Brandon Pollpeter, Wallingford Energy, LLC

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Petition No. 1240
Wallingford Energy, LLC
Wallingford, Connecticut
Staff Report
August 4, 2016

Introduction

On April 3, 2000, PPL Wallingford Energy LLC submitted a Petition to the Connecticut Siting Council (Council) to install five, 50-megawatt (MW) General Electric LM6000 natural gas-fueled combustion turbine peaking units (a/k/a Units 1 through 5) adjacent to the Alfred Pierce Station in Wallingford. On June 20, 2000, the Council approved these five units totaling 250 MW in Petition No. 451. According to the May 1, 2015 ISO New England Inc. (ISO-NE) 2015-2024 Forecast Report of Capacity, Energy, Loads, and Transmission (2015 CELT Report), these five units were brought into service during the December 31, 2001 through February 7, 2002 time period and currently remain in service.

In February 2015, Wallingford Energy II, LLC (WE II) cleared 90 MW of additional capacity at this site in the ISO-NE Forward Capacity Auction (FCA) No. 9. Accordingly, on August 31, 2015, WE II submitted a petition to the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of two natural gas-fueled 50 MW electric generating units next to five existing 50 MW units at 115 John Street in Wallingford. These two additional units, identified as Units 6 and 7, were approved by the Council in Petition No. 1183 on November 12, 2015. The Development and Management Plan (D&M Plan) for Petition No. 1183 has not yet been submitted, but is expected to be filed in the near future.

In order to accommodate these additional units, certain upgrades to the transmission system are needed. Such upgrades were contemplated in Petition No. 1183, but were not yet finalized at that time. Specifically, ISO-NE completed the System Impact Study for the proposed Units 6 and 7 in April 2015. The report showed that two upgrades were needed to support the interconnection of these two units. These upgrades are listed below as follows:

a) Upgrade the approximately 75-foot long, 115-kV #1305 transmission line to a nominal rating of at least 255 mega-volt-amperes (MVA); and
b) Replace four circuit switchers at the existing Wallingford 13M Substation.

In addition to the generation interconnection studies, WE II's project was studied through the ISO-NE's Overlapping Impact Analysis (OIA) in the FCA qualification process. The OIA identified six potential transmission issues. Four of these issues have already been addressed in upgrades unrelated to this project. There are two remaining issues in the OIA regarding the potential loss of two outlet lines from the Wallingford 13 M Substation. There are two contingencies which may arise at the 13M Substation that would cause this to occur. They are listed below as follows:

a) The #1630 and #1640 115-kV transmission circuits on shared (i.e. double-circuit) structures makes the system susceptible to a double-circuit tower contingency, in which both circuits are lost due to a single event; and
b) The failure of a single breaker and subsequent opening of the adjacent breakers would result in the loss of both the #1630 and #1640 lines. This contingency would result in all of Wallingford's distribution transformers being dropped from the system.

On June 24, 2016, the Council received a Petition (Petition) from Wallingford Energy, LLC (WE), on behalf of the Town of Wallingford, for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for proposed modifications to the existing Wallingford 13M Substation and Town-owned #1208, #1305, #1630, and #1640 115-kilovolt (kV) transmission lines. The Petition, identified as Petition No. 1240, would address any required generator interconnection upgrades and the two outstanding contingency issues identified in the ISO-NE OIA. The instant Petition would not affect the outstanding D&M Plan for the generator units in Petition No. 1183 because it would involve a different footprint area than the approved generators. The proposed #1305 line upgrade is currently identified in the June 2016 ISO-NE Regional System Plan Project List with an estimated in-service date of May 2018.

Transmission Reliability - Single-circuit versus Double-circuit Towers

The reliability standards, criteria and procedures with which the electric transmission systems must comply are promulgated at both the national and regional levels. At the national level, the North American Electric Reliability Corporation (NERC) adopts standards that are applicable throughout the United States (U.S.) and Canada. These standards, when approved by the Federal Energy Regulatory Commission, are mandatory in the U.S. The Northeast Power Coordinating Council (NPCC) adopts additional criteria that applies throughout the Northeastern U.S. Finally, criteria and procedures adopted by ISO-NE, the regional planning authority for New England, apply throughout the New England states. Thus, transmission-related projects in Connecticut must comply with NERC, NPCC, and ISO-NE reliability standards.

The contingencies that these standards and criteria specify include double-circuit contingencies, that is, the simultaneous failure of both circuits supported by a common set of support structures. Such a failure could be due to events such as a structure failure or a lightning strike. The relevant provisions include the following:

a) NERC TPL-001-4 requires modeling of a "Multiple Contingency Common Structure" event, which is defined as "the loss of any adjacent (vertically or horizontally) circuits on a common structure";
b) NPCC Regional Reliability Reference Directory #1 (NPCC Directory #1), titled Design and Operation of the Bulk Power System, requires that the electric system withstand the "simultaneous fault on two adjacent transmission circuits on a multiple circuit tower"; and
c) ISO-NE Planning Procedure 3 (ISO-NE PP-3), titled Reliability Standards for the New England Area Bulk Power Supply System, requires that the system withstand "simultaneous permanent phase-to-ground faults on different phases of each of the two adjacent transmission circuits on a multiple circuit transmission tower, with normal fault clearing."

NPCC Directory #1 and ISO-NE PP-3 require that the system not only withstand the loss of such adjacent circuits as a first contingency (N-1) but also that it withstand such a loss as a second contingency (N-1-1). To simulate such a N-1-1 contingency, the loss of certain other system elements, including a generator or another transmission circuit is modeled, after the loss of the two adjacent circuits.

Unlike some other regional criteria, the ISO-NE criteria do not automatically exempt short segments of double-circuit towers (DCTs) from contingency analysis. Thus, the ISO-NE criteria relating to DCTs are somewhat more stringent than required by the NERC and NPCC standards and even somewhat more stringent than criteria of other regional reliability organizations.

Notwithstanding, the requirements that DCT contingencies be addressed in planning studies does not necessarily mean that no new DCTs may be built or that all existing DCTs must be separated. In developing transmission solutions, transmission planners may consider keeping existing DCTs, or separating double-circuit lines, or building new DCTs.

The power flow analyses that transmission planners use to design the transmission grid both model the existing system and also take into account anticipated future system loads and known future changes to generation and transmission system elements. Modeling the simultaneous loss of both circuits on an existing or a potential future DCT in these simulations may or may not result in a violation of the thermal and voltage performance criteria with which the system is required to conform. If the simultaneous failure of both circuits on an existing double-circuit transmission structure does not violate any thermal or voltage criteria, then the existing double-circuit towers will not be disturbed. However, their reliability impact will continue to be monitored in the future.

Modifications to Wallingford 13M Substation Portion of the Project

Specifically, the Petition includes the following proposed modifications to Wallingford 13M Substation:

a) Replace four 115-kV 25 kilo-ampere (kA) circuit switchers with four new 115-kV 40-kA circuit switchers. One circuit switcher would be located on the high voltage side of each existing 115-kV/13.8-kV power transformer;

b) Modify the 115-kV bus work to change the point where the existing #1640 line attaches to the #13M ring bus;

c) Install one new 115-kV 40-kV circuit breaker between the existing 13M-2T and 13M-3T circuit breakers; and

d) Expand the existing control house.

Such equipment modifications would remain within the fenced boundaries of the substation and would not exceed the height of the tallest equipment currently at the site.

The existing 40-foot long by 24-foot wide by 10-foot high control house would be expanded by adding another rectangular section to the southeast. The new section would be approximately 24 feet long by 12 feet wide by 10 feet high and would contain a battery backup system. The existing fenced compound would not be expanded. The additional area associated with the expanded control house would be outside of the fenced area of the substation.

Separation of #1630/#1640 Lines Portion of the Project

WE seeks to install seven galvanized single-circuit monopoles to separate the existing #1630/#1640 lines that are currently supported on the same structures. The seven existing double-circuit structures would remain in place to support the #1630 line. The seven proposed single-circuit structures would support the #1640 line. Regarding conductors, the newly separated #1640 line would utilize 1272 aluminum conductor steel reinforced (ACSR), identical to which is currently in use.

The proposed structures would be galvanized steel to match the existing structures in color. The height of existing structures ranges between 75 to 100 feet above ground level (agl), with the majority of the structures being 85 feet agl or taller. The proposed structures would range from 100 feet to 115 feet agl, with the majority being 100 feet agl. The proposed heights are conservatively predicted. The final heights could be slightly less, but would not exceed 115 feet as a maximum.

#1305 Line Modification Portion of the Project

WE would reconductor approximately 75 feet of #1305 line from an existing WED pole to WED substation structure to increase the nominal rating to 255 MVA.

#1208 Line Modification Portion of the Project

To accommodate the line separation, WE may need to re-route approximately 500 feet of the existing 115-kV #1208 line slightly to the west and closer to the adjacent Town-owned water treatment facility. One additional structure would be required and would not be expected to exceed the height range specified for the proposed separated #1640 line structures.

Construction Methods

Installation of the substation and transmission line upgrades would require a construction area, including laydown space and access routes, of approximately 25 acres. Given that the construction footprint exceeds one acre, WE would register under the Connecticut Department of Energy and Environmental Protection (DEEP) General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. Erosion and sedimentation control measures (E&S controls) would be installed in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control.* Typical E&S controls include, but are not limited to, the use of straw blankets, silt fencing and hay bales, berms, swales, and sediment basins. All E&S controls would be maintained and inspected regularly throughout construction.

For the substation modification portion of the project, WE has identified three possible laydown areas immediately adjacent to the substation. Laydown Area Option #1 is located outside the northern corner of the substation and directly under the energized lines from the generator step-up transformers. Laydown Area Option #2 is located to the west of the existing substation. Laydown Area Option #3 is located to the south-southwest of the substation and directly under energized transmission line connections.

For the transmission modification portion of the project, WE has identified three possible laydown areas immediately adjacent to the existing substation. Laydown Area Options #1 through #3 are located east of John Street and opposite the water treatment facility.

The maximum (worst-case) tree clearing area would be approximately one acre in total. However, no clearing would occur in environmentally or culturally sensitive areas. The existing transmission line corridor is already developed with the majority of the vegetation already removed. There are some very sparsely located wooded areas in the corridor that may need to be cleared to accommodate the #1640 line. These tree clearing areas are not located near the residential developments on East Street. These clearing areas would generally be located farther to the west, e.g. near the Town's leaves and debris composting area, Town-owned refuse drop-off and recycling facility, etc.

Access to the construction areas would utilize public roads and existing transmission line access routes. By utilizing existing access routes, clearing of vegetation for access would not be required.

Environmental Effects and Mitigation Measures

The proposed project would occur almost exclusively on Town-owned property that is used for various Town operations. The project site is zoned industrial, as designated by the Town of Wallingford as Industrial District I-40. The Town water treatment facility, WED equipment storage yard, composting center, recycling and refuse drop-off site, and the former landfill are in close proximity to the proposed project. The transmission upgrade area is not located near residential structures. There is residential development on the eastern side of East Street, across from the existing substation (to be upgraded) and existing generating Units 1 through 5 plus the existing Pierce Plant generating unit.

The State Historic Preservation Office (SHPO) has determined that no historic properties would be affected by the proposed project.

The proposed project is not located within a shaded area of the DEEP Natural Diversity Database (NDDB). Notwithstanding, WE submitted a request to DEEP for NDDB review as a precaution. By letter dated June 6, 2016, DEEP indicated that the proposed project is not expected to negatively impact any State-listed species.

There are no wetlands in close proximity to the project area. According to National Wetlands Inventory, the nearest wetland is located roughly 850 feet to the northwest of the nearest proposed line separation structure.

The proposed project would not be located within a 100-year or 500-year Federal Emergency Management Agency-designated flood zone. The project is also not located within a DEEP-designated Aquifer Protection Area.

The majority of the existing transmission structures are about 85 feet high. The majority of the proposed structures would be on the order of 100 feet high, with a conservative worst-case height of 115 feet. However, the incremental visual impact associated with more structures and taller structures is not expected to be significant because the surrounding area is already developed with infrastructure including generators, transmission structures, water treatment facility, etc. To maintain aesthetics, WE's new structures would have a similar galvanized steel finish to match the existing structures. Since the existing double-circuit structures associated with the line separation would only support one circuit post-construction, there would be unused arms on one side of such structures post-construction. WE would leave the unused arms in place for future flexibility and believes that removing such arms would have negligible aesthetic benefit in an area with existing infrastructure. Council staff concurs and notes that there may be some aesthetic benefit to maintaining some symmetry on the structures with arms on both sides.

The incremental visual impacts associated with the substation modifications are also not expected to be significant. Specifically, the expanded control house area would be the same height as the existing control house at 10 feet. While views of the expanded control house are possible from a residence located directly across East Street (at the intersection of Park Street and East Street), the proposed control house expansion would aesthetically match the existing in terms of exterior wall and roofing design. The existing control house is already visible from this location as part of the existing substation facility.

The substation fence area would not be expanded. Equipment modifications would remain within the fenced boundaries of the substation and would not exceed the height of the tallest equipment currently at the site.

WE provided pre-construction and post-construction magnetic field profiles (measured perpendicular to the transmission lines to be separated) at nine different sections/locations of the project. The magnetic field levels were conservatively based on the full normal rating of the transmission lines. The eastern limits of Section 1 is the closest to a residential area. The existing magnetic field levels at this location would be approximately 14 mG. The predicted post-construction magnetic field levels at this location would remain unchanged at approximately 14 mG. The highest existing magnetic field level is about 250 mG near the center of Section 9, which is roughly the centerline of the existing #1630 line and adjacent to the Town refuse drop-off location. The highest proposed or post-construction magnetic field level at this location would be approximately 272 mG. All of these noted magnetic field levels are far below the International Commission on Non-ionizing Radiation Protection acceptable exposure level of 2,000 mG for the general public as recognized in the Council's "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut."

WE anticipates beginning construction approximately in October 2016 and completing construction by approximately September 2017. Normal working hours would be Monday through Friday from 7:00 a.m. to 5:00 p.m. Non-standard work hours may be required during transmission line outages. Construction-related noise is exempt per DEEP noise regulations. Notwithstanding, any construction-related impacts to existing noise levels would be short-term and localized in the vicinity of work sites. There would be no permanent

changes to the existing sound levels as a result of the project. Thus, operation of the substation and transmission lines as modified by the proposed project would continue to comply with DEEP noise regulations.

State Agency, Municipal and Abutter Notice

On or about June 7, 2016, the Petitioner provided formal notice to the Town Wallingford, as well as other State and local officials and agencies. To date, the Council has not received any comments.

By letter dated July 19, 2016, the Connecticut Department of Transportation noted that it had no comments on the proposed project.

Conclusion

If approved, staff recommends including the following conditions:

a) Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
b) Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes; and
c) Approval of any minor project changes be delegated to Council staff.