STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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January 17, 2019

Kathleen M. Shanley
Eversource Energy
P.O. Box 270
Hartford, CT 06141-0270

RE: **DOCKET NO. 461A** - Eversource Energy Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 115-kilovolt (kV) bulk substation located at 290 Railroad Avenue, Greenwich, Connecticut, and two 115-kV underground transmission circuits extending approximately 2.3 miles between the proposed substation and the existing Cos Cob Substation, Greenwich, Connecticut, and related substation improvements. 115-kV Double Circuit Underground Transmission Lines Development and Management Plan.

Dear Ms. Shanley:

At a public meeting of the Connecticut Siting Council (Council) held on January 17, 2019, the Council considered and approved the partial Development and Management Plan (Volume 2, Part 1) submitted for this project on October 5, 2018, including additional information submitted to the Council on December 7, 2018. The approved partial Development and Management (D&M) Plan is specific to the underground 115-kV transmission line portion of the Greenwich Substation and Line Project and excludes the Indian Harbor crossing segment. The Indian Harbor crossing segment will be submitted at a later date.

This approval applies only to the partial D&M Plan submitted on October 5, 2018 and the additional information submitted on December 7, 2018. Requests for any changes to the D&M Plan shall be approved by Council staff in accordance Regulations of Connecticut State Agencies (RCSA) §16-50j-62(b). Furthermore, the Certificate Holder is responsible for reporting requirements pursuant to RSCA Section 16-50j-62.

Please be advised that changes and deviations from this plan are enforceable under the provisions of the Connecticut General Statutes § 16-50u. Enclosed is a copy of the staff report on this partial D&M Plan, dated January 17, 2019.

Thank you for your attention and cooperation.

Sincerely,

James J. Murphy, Jr.
Acting Chairman

Enclosure: Staff Report, dated January 17, 2019

c: Parties and Intervenors

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Docket No. 461A
Eversource Energy
Partial Development and Management Plan
Volume 2, Part 1

115-kV Double Circuit Underground Transmission Lines

Staff Report
January 17, 2019

Introduction

On October 5, 2018, Eversource Energy (Eversource) submitted a partial Development and Management (D&M) Plan to the Connecticut Siting Council (Council) for the underground 115-kV transmission line portion of the Greenwich Substation and Line Project (GSLP) that was approved by the Council on November 14, 2017. According to the Council's Decision and Order (D&O) Condition Number 3, Eversource is to submit two D&M Plans for the GSLP, one specific to the new Greenwich Substation and other substation improvements (Volume 1), and one specific to the new underground 115-kV transmission lines (Volume 2).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-60, a partial or full D&M Plan shall be prepared for any proposed energy facility for which the Council issued a Certificate of Environmental Compatibility and Public Need. The submitted, partial D&M Plan only pertains to the installation of the underground transmission line east and west of Indian Harbor in Greenwich (Volume 2, Part 1). The submitted Volume 2, Part 1 D&M Plan excludes the transmission line crossing of Indian Harbor in Bruce Park. A D&M Plan specific to the Indian Harbor crossing will be submitted at a later date for Council review (Volume 2, Part 2).

On November 9, 2018, the Council requested from Eversource an extension of time to February 2, 2019 for the Council to render a decision on the Volume 2, Part 1 D&M Plan. On November 9, 2018, Eversource granted the Council's request.

On November 14, 2018, the Council submitted interrogatories to Eversource regarding the Town's concerns on the D&M Plan with responses due by November 28, 2018. On November 27, 2018, Eversource requested an extension of time to respond to the Council's interrogatories. The Council granted an extension of time to December 7, 2018. Eversource submitted the interrogatory responses on December 7, 2018 that addressed the Town's concerns.

Municipal and Other Public Consultations

During the development of the underground transmission line portion of the GSLP, Eversource consulted with representatives of the Town of Greenwich (Town) and responded to questions and comments about construction of the project. Prior to submission of the Volume 2, Part 1 D&M Plan to the Council, Eversource submitted a draft copy to the Town for review and comment and met with the Town to further discuss the project.

On October 5, 2018, Eversource filed a final version of the Volume 2, Part 1 D&M Plan with the Town and all parties and intervenors listed on the service list. On November 2, 2018, the Town Department of Public Works submitted comments to the Council that contained specific concerns regarding traffic management, potential blasting, vehicle access to Cos Cob Park, the location of a portion of the duct bank that may interfere with Town utilities, and lack of road restoration details.

Volume 2, Part 1 D&M Plan – Underground 115-kV Transmission Lines

The D&O requires the following information to be included in the D&M Plan:

a. A detailed site plan showing the placement of all substation equipment, structures, and buildings within the substation perimeter, access, provisions for storm water management and transformer oil containment and fencing;

This item does not apply to the underground transmission line portion of the Project.

b. A detailed site plan showing the underground transmission line route, splice vaults, traffic management plan, identification of pipe jacking sites, provisions for underground cable protection, substation improvements, and equipment and material staging areas;

Detailed site plans have been submitted as part of the Volume 2, Part 1 D&M Plan. The site plans include an overall project plan and a soil profile plan with roads, topographic features, grades, and known subsurface features and existing utilities, among others.

Underground Transmission Line Route

The underground transmission line portion of the project consists of a 115-kilovolt ("kV") double-circuit, cross-linked polyethylene (XLPE) transmission line that will extend for approximately 2.3 miles between the existing Cos Cob Substation and the new Greenwich Substation at 290 Railroad Avenue in Greenwich. The new transmission circuits will be designated by Eversource as the 1020 and 1703 lines.

During development of the Volume 2, Part 1 D&M Plan, Eversource modified the final design of the underground double-circuit transmission line by decreasing the number of pairs of splice vaults originally contemplated from 6 to 4. Additionally, based on project engineering, the locations of the splice and pull through vaults have been modified. The new locations of the vaults are detailed on site plans contained within the Volume 2, Part 1 D&M Plan.

All construction activities will take place within or near existing road rights-of-way (ROWs), with the exception of a pipe jack crossing of Interstate 95. Splice/pull through vaults will be located within ROWs to the extent feasible.

The majority of the transmission line route will be installed within a standard double-circuit duct bank configuration, requiring the excavation of a trench with minimum dimensions of approximately 5 feet wide and 5 feet deep with a minimum of 3 feet cover over the duct bank. Eversource has attempted to avoid existing underground infrastructure as much as possible. In some locations, existing underground infrastructure will have to be relocated to accommodate the underground transmission line.

The duct bank will consist of the transmission line and associated communication fiber, grounding wires and temperature monitoring system installed within polyvinyl chloride (PVC) conduits encased in concrete within the trench. The double-circuit duct bank configuration consists of six 6-inch conduits containing two 115-kV XLPE insulated power cables (three cables comprising one circuit), two 4-inch conduits containing communication and relaying cables (one for each circuit) and four 2-inch conduits to house a grounding cable and a temperature sensing fiber-optic cable (two for each circuit). The concrete encasement will provide for mechanical as well as thermal protection of the transmission line.

Splice Vaults

To connect and pull sections of installed conduit and cable, pre-cast concrete splice/pull through vaults will be installed in pairs at a typical interval of approximately 2,400 feet along the transmission line route. This interval is longer than the original estimate of one pair of vaults every 1,800 feet, thus decreasing the number of required pairs of vaults from 6 to 4. Two pairs of pull through vaults will be required, one at each end of the transmission line route. Both the splice and pull through vaults will measure approximately 22 feet long, 7 feet wide and 7 feet high (interior measurements).

The Connecticut Department of Transportation (CT DOT) reviewed the locations of the splice vaults and did not object to the specified locations.

Pipe Jacking

Since trenching is not possible to cross Interstate 95 (I-95) by Indian Field Road, a hydraulic jack will be used to push a 42-inch diameter concrete casing pipe under the highway. Once the casing pipe has been installed under the highway corridor, the conduits/cables will be installed within the casing pipe, followed by encasement with a thermal grout material.

Two excavations for the pipe jacking installation are required; one located in the grass median between the southbound lanes of I-95 and the southbound I-95 Exit 4 off-ramp and the other on the grass median between the northbound lanes of I-95 and northbound I-95 Exit 4 on-ramp. The excavated areas will have approximate dimensions of 15 feet in length, 50 feet in width and 15 feet in depth.

Site preparation activities for the crossing will consist of a survey to establish the work area and underground route, removal of vegetation, deployment of traffic control measures per CT DOT permits, establishing work area erosion and sedimentation controls, installation of drainage measures to keep runoff from entering work zones, and establishment of gravel entrance and work pads.

Traffic Management

Eversource consulted with various CT DOT Departments (Rails, Highway, Traffic and District 3 Offices) the Metro North Railroad, and the Town to discuss and develop a site specific Traffic Management Plan related to the proposed construction. The transmission line route passes through Interchanges 3 and 4 of Interstate 95, which are two major access points to Greenwich. A major portion of the route passes through Bruce Park and adjacent residential neighborhoods. The western portion of the route passes through a commercial district. There are also two Metro North Commuter Rail stations within the limits of the project, the Greenwich and Cos Cob Train Stations, which provide a transportation link to the surrounding metropolitan areas.

The construction areas have been divided into 26 traffic management sections with detailed patterns and hours of construction per segment. Town police officers or certified flaggers will direct traffic around or through the construction areas.

The installation of the cable duct bank and associated splice/pull through vaults will require the excavation of a continuous trench in the travel way of town roads. All related activities associated with the installation of the duct bank and splice vaults in a particular location are part of a common work zone. Work zones will typically measure approximately 400 to 500 feet in length, and 14 to 50 feet in width. Trenching is anticipated to proceed at a rate of approximately 50 to 75 linear feet per day, per crew. However, this rate may vary, depending on the occurrence of rock, water infiltration, and the location and density of other existing utilities along the transmission line route.

Installation of each set of splice/pull through vaults within or adjacent to roadways will take approximately two weeks for each set of vaults, depending on the proximity to existing structures/utilities and subsurface conditions. Temporary steel plates suitable for vehicle traffic may be used to cover openings in the roads to maintain traffic flow after work hours.

For safety, traffic stops will be required for construction. In certain locations, traffic will be directed around a work zone in a one-way alternating traffic operation. At other locations, a road may be closed, with traffic directed to a new route via signed detours. There are 7 signalized intersections along the route and these will remain operational during construction although modified signal timing may be required. Variable Message Signs may be deployed, upon approval from DOT, to provide additional information regarding appropriate traffic detours.

The underground transmission line route passes through the Metro North Cos Cob Train Station parking lot and access road. To compensate for the temporary loss of parking spaces in front of the train station, parking will be established at a Town-owned parking lot to the north of Station Drive. A valet service will be established in order to double park cars in the lot. Bus transportation will also be arranged to the train station from the parking lot. Handicap parking will be maintained in front of the train station throughout the duration of the Project.

Eversource will inform businesses, property owners, and residents along the route of the construction schedule. Consideration will be given to minimize the impact of construction activity on vehicular traffic and pedestrians. Disruption to access along existing travelled ways will be minimized by utilizing steel plates and by performing driveway crossings in phases to maintain traffic flow to the extent feasible. Access to Cos Cob Park will be maintained during construction.

c. An erosion and sediment control plan that includes provision for any areas for the temporary storage of fill materials and is consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended;

The D&M Plan specifies work procedures that comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended (CT Guidelines), and Eversource's *Best Management Practices Manual for Massachusetts and Connecticut*, September 2016 (BMPs).

Procedures include installing and maintaining appropriate temporary soil erosion and sedimentation controls (E&S Controls) around select areas of planned pavement/soil disturbance, as necessary. Temporary E&S Controls will be maintained until the disturbed areas are satisfactorily stabilized.

As part of the E&S Controls deployed along the route, catch basin filter protection will be utilized to prevent sediments from entering the municipal storm water system. These filters will be regularly inspected and replaced, as needed. All catch basins along the route will be protected with E&S Controls.

Excavated soils/materials will be live-loaded into dump trucks and handled and disposed of in accordance with regulatory requirements and the BMPs. If suspected polluted or contaminated soil is encountered (i.e., containing oils or emitting a petroleum or chemical odor), the contractor will immediately stop work and report the suspected contamination to a representative of Eversource, who will report the discovery to the Connecticut Department of Energy and Environmental Protection (DEEP). Suspected contaminated soils will be live-loaded and transported for disposal in accordance with appropriate regulatory requirements. If necessary, a DEEP Contaminated Soil Transfer and Staging General Permit will be obtained.

During construction, active dust suppression will be deployed, if necessary, using a fine water spray. Vacuum sweepers will be deployed periodically on paved areas to remove accumulated dirt. A tracking pad will be established at all staging area access points.

A concrete truck wash-out station will be established at designated staging locations. The washout area will be established using E&S Controls that conform to the CT Guidelines and the BMPs.

If dewatering of the pipe jack pits is necessary, water will be pumped through a filter bag and discharged into a nearby stormwater catch basin. Eversource will conduct pre- and post-construction inspections of the catch basin and will clean it, if necessary.

Groundwater and stormwater will be pumped from excavated areas into nearby stormwater catch basins. All wastewater will be discharged through a filter bag before being directed to a catch basin. If groundwater is suspected of being contaminated, the water will be pumped directly into a vacuum truck and disposed of in accordance with regulatory criteria.

Upon completion of a Project segment, permanent stabilization will consist of the application of pavement or reseeding to establish a uniform vegetative cover of 70 percent density on disturbed soils that will not otherwise be paved or surfaced with gravel. Catch basins in the work area will be cleaned of excess sediment with a vacuum truck for disposal at an appropriate facility.

Work activities associated with the transmission line installation will extend into the winter months. If necessary, Eversource will implement appropriate snow removal and de-icing procedures in accordance with the BMPs. If some clean-up or restoration work is completed too late in the season to initiate or complete permanent stabilization of disturbed areas (e.g., temporary staging areas that may require reseeding), temporary E&S controls will be left in place and augmented, as necessary. These measures will be regularly inspected and maintained until permanent stabilization can be completed.

d. A spill prevention and countermeasures plan;

A Spill Prevention, Control and Countermeasures Plan (SPCCP) has been developed that establishes a process to minimize the potential for a spill of petroleum products or hazardous or toxic substances, and, if a spill does occur, appropriate measures to contain and control the release. Eversource's project contractors will be responsible for following Eversource's SPCCP. The SPCCP includes provisions for training, equipment inspection and maintenance, and the identification, proper storage, transport and use of materials at Project work sites. Other provisions include vehicle and equipment re-fueling at designated locations, maintaining spill kits on-site that have emergency clean up and spill containment materials (absorbent socks and/or pillows and wipes, temporary disposal bags), and reporting procedures to inform the on-site construction manager and DEEP.

e. Identification of areas for staging and equipment lay down, field office trailers, sanitary facilities and parking;

Construction staging areas will be established at the Greenwich Substation site and at the Eversource-owned 281 Railroad Avenue property ("Pole Yard"). In addition, some materials may be stored at Cos Cob Substation. Additional temporary staging areas may be needed to support the Project and if additional sites are necessary, the proposed locations would be submitted to Council staff for approval. After completion of the Project, temporary staging areas will be restored in accordance with underlying landowner agreements.

Temporary construction support services such as portable toilets and office trailers will be located at the staging areas. No solid or liquid waste will be disposed of at the staging areas. Once the Project is complete, all construction related equipment, materials, and construction debris will be removed from the staging areas.

f. Details for the Indian Harbor crossing including related temporary and permanent construction impacts and methods to reduce such impacts;

Details regarding the transmission line crossing of Indian Harbor will be submitted for Council review at a later date.

g. A vegetative clearing/trimming plan;

Selective tree removal will occur at two transmission line crossings of Sound Shore Drive, near the Cos Cob Train Station parking lot entrance, and along Wood Road in Bruce Park. Vegetation will also be removed within the Interstate 95 ROW for access to pipe jacking work areas. At the Davis Avenue splice vault work area, select trees will be excavated, temporarily relocated, and subsequently replanted. Tree trimming is expected to be minimal but may be necessary for construction equipment clearance, particularly along Indian Field Road, through portions of Bruce Park and along Museum Drive. All tree removal and trimming will be performed by a licensed arborist and in coordination with the Town Tree Warden.

h. Restoration plan for disturbed areas and roads;

The Volume 2, Part 1 D&M Plan includes details for restoration of all disturbed areas, including provisions for repaving roads, the planting of trees within certain areas of Bruce Park and reseeding of non-paved, disturbed areas.

All areas affected by construction activities will be substantially restored to pre-construction site conditions. Depending on the time of year in which certain activities are completed, final restoration in areas that require reseeding and/or other planting measures may not be completed until the following growing season. If construction is completed during winter, disturbed areas will be stabilized as necessary, followed by final restoration the following spring.

At the completion of the installation of the duct bank and splice vaults with roads, the roads will be restored according to the guidelines of the Town (for local roads) and CT DOT specifications (for state roads) by milling and repaving of both traffic lanes. Additionally, affected portions of the I-95 ramps and the entire parking lot at the Cos Cob Train Station will be repaved.

Eversource will include the Town's Standard Construction Details for road repaving, curb replacement and sidewalk replacement within the Project bid documents. Eversource is coordinating with the Town regarding curb replacements that conform to the Americans with Disabilities Act.

i. A construction schedule, including construction hours;

Construction and installation of the transmission line is expected to be completed by the fourth quarter of 2019. The Project has been divided into 26 sections based on traffic impacts, with each section having designated hours of construction. Several sections may be active simultaneously at different locations along the route.

To minimize disruption of recreational activities in Bruce Park, Eversource will attempt to complete all duct bank construction activities within the park prior to April 30, 2019. Cable splicing within the vaults requires extended work times, typically 5 to 7 days per vault. A splicing equipment trailer will remain over the splice vaults for the duration of splicing operations 24 hours a day, 7 days a week.

Any noise related to construction is exempt per §22a-69-1.8 of the DEEP Noise Control Regulations.

Prior to the commencement of work in an area, Eversource will notify the Town and affected stakeholders by mail and door to door contact. Outreach will continue through the duration of the project. A Project information website will be available that includes email and telephone contact information.

j. A blasting plan, if necessary;

The majority of trenching along the route will be conducted using back-hoes and excavators. In locations where shallow bedrock is encountered, Eversource's contractors will implement hoe-ramming or other mechanical chipping techniques. Although not anticipated, if blasting is required, prior to commencing any blasting activities, Eversource will retain a certified blasting specialist licensed by the Connecticut Commissioner of Emergency Services and Public Protection. A site-specific blasting plan will be developed in compliance with state and local regulations and Eversource guidelines. The blasting plan will also be coordinated with the Town Department of Public Works and the local Fire Marshal.

Prior to blasting in areas with existing infrastructure and upon consultation with the Town, Eversource will perform video inspections of existing sewers/pipes in the blast areas to document existing conditions.

Community outreach will occur to inform the public about the planned blasting activity and conduct pre- and post-work inspections, as necessary, of properties abutting the work sites where blasting will be performed. Eversource will contact the police and fire departments regarding the blasting schedule.

k. EMF Monitoring Plan;

Eversource has submitted a post-construction Electric and Magnetic Field Monitoring Plan for the Project. Given that electric fields decrease rapidly with distance from the source, one post-construction electric field measurement will be made near the Cos Cob Substation. For magnetic field levels, Eversource will collect pre and post-construction measurements in four locations along the transmission line route, as follows: near the Cos Cob Substation, on Wood Road, on Arch Street, and along the perimeter of the new Greenwich Substation. The measurement locations were selected to provide representative data regarding the underground portions of the transmission line. The locations also were selected to avoid other existing potential sources of magnetic fields such as underground distribution lines.

Within 12 months of the in-service date of the new 115-kV line, Eversource will submit a final EMF measurement report to the Council.

l. Submission of monthly construction progress reports.

In accordance with RCSA §16-50j-62, Eversource will submit monthly construction progress reports that will summarize the status of Project construction.

The Volume 2, Part 1 D&M Plan complies with requirements of RCSA § 16-50j-60 to 16-50j-62 and is consistent with the Council's D&O dated November 14, 2017.