



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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July 21, 2017

Kathleen M. Shanley
Manager Transmission Siting
Eversource Energy
P.O. Box 270
Hartford, CT 06103

RE: **DOCKET NO. 468** - The Connecticut Light & Power Company d/b/a Eversource Energy Certificate of Environmental Compatibility and Public Need for the Southwest Connecticut Reliability Project that traverses the municipalities of Bethel, Danbury, and Brookfield, which consists of (a) construction, maintenance and operation of a new 115-kV overhead electric transmission line entirely within existing Eversource right-of-way and associated facilities extending approximately 3.4 miles between Eversource's existing Plumtree Substation in the Town of Bethel to its existing Brookfield Junction in the Town of Brookfield; (b) reconfiguration of two existing 115-kV double-circuit electric transmission lines at Eversource's existing Stony Hill Substation in the Town of Brookfield; and (c) related substation modifications.

Dear Ms. Shanley:

At a public meeting of the Connecticut Siting Council (Council) held on July 20, 2017, the Council considered and approved the Development and Management (D&M) Plan submitted for this project on June 15, 2017 with the following conditions:

1. Submission of the qualifications of the Independent Environmental Inspector for Council review and approval;
2. Submission of a Post-construction EMF measurements report from the selected focus areas; and
3. Submission of a Project Blasting Plan, if applicable.

The Council also recommends Eversource develop a plan to ensure invasive species are not transported with the excavated soils during construction.

This approval applies only to the D&M Plan submitted on June 15, 2017. Requests for any changes to the D&M Plan shall be approved by Council staff in accordance RCSA §16-50j-62(b). Furthermore, the Certificate Holder is responsible for reporting requirements pursuant to Regulations of Connecticut State Agencies 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 D&M Plan, dated July 20, 2017.



Thank you for your attention and cooperation.

Very truly yours,

Handwritten signature of Robert Stein in blue ink, with the initials "UAB" written to the right of the name.

Robert Stein
Chairman

RS/RDM/laf

Enclosure: Staff Report, dated July 20, 2017

c: Parties and Intervenors

The Honorable Matthew S. Knickerbocker, First Selectman, Town of Bethel
Beth Cavagna, Director/Town Planner, Town of Bethel
The Honorable Stephen C. Dunn, First Selectman, Town of Brookfield
Alice Dew, Land Use Manager, Town of Brookfield
Francis Lollie, Zoning Enforcement Officer, Town of Brookfield
The Honorable Mark D. Boughton, Mayor, City of Danbury
Sharon Calitro, Planning and Zoning Department, City of Danbury

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Substation in the Town of Bethel to its existing Brookfield Junction in	}	
the Town of Brookfield; (b) reconfiguration of two existing 115-kV	}	
double-circuit electric transmission lines at Eversource's existing Stony	}	
Hill Substation in the Town of Brookfield; and (c) related substation	}	
modifications.		

Development and Management Plan

Southwest Connecticut Reliability Project

Staff Report

Introduction

On June 15, 2017, Eversource Energy (Eversource) submitted to the Connecticut Siting Council (Council) a Development and Management (D&M) Plan for the construction of the Southwest Connecticut Reliability Project occurring in the municipalities of Bethel, Danbury and Brookfield. The project consists of (a) construction, maintenance and operation of a new 115-kV overhead electric transmission line entirely within existing Eversource right-of-way and associated facilities extending approximately 3.4 miles between Eversource's existing Plumtree Substation in the Town of Bethel to its existing Brookfield Junction in the Town of Brookfield; (b) reconfiguration of two existing 115-kV double-circuit electric transmission lines at Eversource's existing Stony Hill Substation in the Town of Brookfield; and (c) related substation modifications (Project). The D&M Plan was submitted in accordance with the Council's Decision and Order for this project, dated November 10, 2016.

Permits and Agency Consultations

During the preparation of the D&M Plans, Eversource consulted with state and federal agencies, including United States Army Corps of Engineers (USACE), United States Fish and Wildlife Service, Connecticut Department of Energy and Environmental Protection (DEEP), Public Utilities Regulatory Authority (PURA), Connecticut Department of Transportation (DOT) and the Connecticut State Historic Preservation Office (SHPO).

Eversource received the following permits;

1. The DEEP *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* for the management of discharge of stormwater and dewatering wastewaters from construction sites;
2. USACE Clean Water Act Section 404 Permit;
3. DOT encroachment permits for transmission line crossings of Route 6 and Interstate 84; and
4. PURA approval for Method & Manner of Construction and approval to energize line.

Municipal and Community Consultation

During the preparation of the D&M Plan, Eversource consulted with representatives of Bethel, Danbury and Brookfield. Copies of the D&M Plan were issued to all three municipalities.

Eversource previously conducted community outreach during the Project planning and siting process. Outreach efforts will continue throughout construction and will include notification of upcoming construction activities to affected stakeholders. Eversource will notify adjacent and nearby landowners regarding upcoming construction activities and will have staff available to address any issues that may arise prior to or during construction. Project information will also be available on Eversource's webpage for the duration of the Project.

Schedule

Construction activities associated with the new transmission line are anticipated to occur between January 2018 and December 2018. Right-of-way (ROW) restoration activities may extend into Summer 2019 depending on weather conditions. Project construction will require line outages of the existing transmission lines within the Project ROW, most likely in the third and fourth quarters of 2018. Line outages must be coordinated with and approved by the Connecticut Valley Electric Exchange (CONVEX). Construction activities at the substations are expected to occur between the Summer 2017 and Summer 2018.

Construction work will typically occur between 7:00 a.m. and 7:00 p.m., six days per week (Monday through Saturday). However, certain activities may require work outside of the typical construction hours, in some cases on a 24-hour basis and/or on Sundays. Such non-typical work includes activities that must be performed during a CONVEX-approved outage. During winter, snowplowing would occur prior to 7:00 a.m. to allow for work site access, as necessary.

General Project Overview

The new 3.4 mile long 115-kV transmission line will be an extension of the existing 1887 Line and will parallel the existing overhead 345-kV 321 Line and the 115-kV 1770 Line located within the existing transmission line ROW. The new line will extend for approximately 2.2 miles within Bethel, 0.9 mile within Danbury, and 0.3 mile within Brookfield. The existing ROW is approximately 175 feet to 225 feet wide within most of the Project area and the acquisition of additional transmission ROW is not required. The new overhead line will be supported on 28 new weathering steel monopoles with the conductors arranged in a vertical configuration. The monopoles will range in height from 95 to 135 feet above grade. Structures will be installed by direct embedding or on drilled shaft foundations depending on soil conditions and structure type.

Eversource proposes to modify the Plumtree Substation in Bethel by connecting the new transmission line to an existing steel A-frame terminal structure located between two existing 115-kV circuit breakers. Additional work includes upgrading the existing terminal equipment, including a line disconnect switch and wave trap, to meet current line capacity requirements, and the installation of underground fiber for line protection systems. All work would be performed within the existing 4.6-acre substation yard, located on a 13.8-acre parcel owned by Eversource.

Modifications at the Stony Hill Substation in Brookfield include the reconfiguration of the 1770 Line and 1887 Line by eliminating the 1887 Line substation connection and splitting the 1770 Line into two lines; the 1268 Line extending from Stony Hill Substation to Plumtree Substation, and the 1485 Line extending

from Stony Hill Substation to Bates Rock Substation. Work associated with these lines will include the following:

- a. The existing 1887 Line tap into the east side of the substation will be eliminated such that the line will no longer connect to the substation; and
- b. Three existing wood transmission dead end structures that presently connect the 1770 Line and 1887 Line to the substation will be removed. Two new steel monopole structures, 70 and 85 feet in height, will be installed adjacent to the substation to facilitate connection of the newly designated 1268 Line and 1485 Line.

Additionally, the existing 115-kV capacitor bank within the Stony Hill Substation will be reconfigured by disconnecting the capacitor bank from Bus A1 and reconnecting it to Bus A3. This work will require the removal of rigid bus, bus support structure, and the installation of new rigid bus, a three-phase high bus support structure, new underground ductbanks and other related equipment. All work will be performed within Eversource's 18.8-acre substation property. No expansion of the substation is required for this Project. An expansion of the substation yard to the east to eliminate system voltage criteria violations by installing a synchronous condenser was approved by the Council on June 23, 2016 in Petition 1230.

General Construction Procedures

Construction of the Project will require the establishment of support areas, typically two to five acres in size, to house staging areas, contractor yards, field office trailers, sanitary facilities and parking areas. The locations of the support areas will be selected by the construction contractor and will be as close to the work areas as possible. Once lease terms for support areas on private property have been finalized, Eversource will submit support areas details for Council staff review and approval prior to use. Traffic control measures will be established upon consultation with the respective municipalities and the DOT.

Eversource will construct the Project in several stages, some overlapping in time. The following generally summarizes the sequence of construction activities for both the ROW and substation components:

- Prepare Project support sites (e.g., storage, staging and laydown areas).
- Establish construction field office area(s), typically including space for an office trailer, equipment storage and maintenance, sanitary facilities, and parking.
- Survey and stake the Project boundaries, vegetation clearing boundaries, limits of disturbance, excavation areas, and new structure locations.
- Mark the boundaries of previously delineated wetland and watercourse areas.
- Identify and mark areas to be avoided or otherwise protected (e.g., sensitive cultural or environmental resource areas).
- Perform vegetation clearing and site preparation, as needed.
- Install erosion and sedimentation controls.
- Resurface and widen existing access roads as necessary. Establish new temporary and permanent access roads where needed.
- Prepare ROW work and conductor pulling pads.
- Construct foundations and install/assemble new structures or equipment.
- Install shield wires and conductors.

- Install structure grounding systems, including counterpoise (where needed).
- Remove temporary roads, construction debris and restore disturbed sites.
- Maintain temporary erosion and sediment controls until vegetation is re-established or disturbed areas are otherwise stabilized.

Rock removal

Bedrock encountered during construction will be removed by mechanical methods. If mechanical methods are not successful and blasting is required, Eversource will retain a certified blasting contractor that will develop a site specific blasting plan in compliance with state and local regulations. Pre-and post-blast surveys would be conducted as well as community outreach to local officials and area landowners. If blasting is required, Eversource will submit the blasting plan to the Council prior to blasting activities.

Access Roads and Work Pads

The existing ROW already contains a large network of gravel-based access roads except in extensive wetland areas. Existing access roads will be used to the greatest extent possible; however, a majority of existing roads will require resurfacing and some re-grading to create a typical travel width of 16-20 feet to accommodate heavy construction equipment. Turn areas and designated vehicle passing areas will be wider to accommodate construction equipment. In some areas, off-ROW access roads will be necessary to avoid rugged terrain or sensitive environmental or cultural resources. Eversource will have to secure access road easement rights for off-ROW access. In some areas where the ROW is near existing paved parking lots, Eversource will consult with the respective landowners to utilize these paved surfaces and to ensure existing traffic patterns are maintained to the extent possible.

Fugitive dust will be controlled through the use of tracking pads and the light watering of disturbed areas, if necessary. Paved road surfaces adjacent to construction access points will be swept periodically.

Gravel work pads will be established at each transmission structure location to create a stable, level construction area. Excavated soil at each pad location will be stockpiled for reuse or spread in upland areas. Work pads will typically measure 100 feet by 100 feet for tangent structures and 100 feet by 200 feet for deadend structures. Gravel pull pads, measuring 100 feet by 300 feet will also be established at certain intervals to accommodate truck mounted conductor pulling equipment.

Following construction, access roads and work pads located in upland areas will be left in place unless directed to be removed by the landowner. Designated temporary access roads and work pads will be removed. Stone walls that are disturbed will be rebuilt unless the landowner directs otherwise. Access roads and work pads remaining in place may be re-graded as needed. In areas where wide access roads were established, the gravel surface will be pulled back to a width of 16 feet in order to provide for access to the new structures for maintenance and emergency events.

Erosion and Sedimentation control measures will be in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, Eversource Best Management Practices, and DEEP and USACE permit conditions.

Prior to construction, Eversource will notify Town police departments and request enforcement of a no trespass provisions on the ROW, including on land it leases. During construction, Eversource will post no trespass, construction zone and other hazard warning signs along the Project route, as appropriate. Once construction is complete, signs, gates and fences will be installed along ROW access points upon coordination with or at the request of the underlying landowner.

Wetlands and Watercourses

The new transmission line will span four perennial watercourses, three intermittent watercourses and one pond. Temporary construction access, consisting of timber mats, will be required across three of the watercourses. No new transmission line structures will be located within waterbodies or watercourses.

The Project will impact eight wetland areas through the installation of temporary construction matting associated with access roads and work pads. No new permanent access roads will be installed within any designated wetland. Construction impacts include the clearing of 2.6 acres of forested wetlands that will revert to shrub-scrub vegetation, and 4.5 acres of temporary impact associated with timber mats. Eleven transmission structures will be installed within a large wetland associated with East Swamp Brook and Limekiln Brook resulting in 0.03 acre of permanent filling. No vernal pools were identified along the Project route.

Wetland restoration will include stabilization by seeding and maintenance of erosion and sedimentation controls until final stabilization is achieved. All of the wetlands within the construction areas contain invasive species. Eversource will implement a Wetland Invasive Species Control Plan to reduce the unintentional spread of invasive species resulting from construction activities. Control measures include the cleaning of equipment and other materials (including wood mats) to remove excess soil, debris, and vegetation before being deployed to the Project ROW as well as cleaning of construction materials that are moved from Project areas known to contain invasive species.

Flood Zone Mitigation

The Project ROW extends across a Federal Emergency Management Agency (FEMA) designated 100-year flood zone and floodway associated with East Swamp Brook and Limekiln Brook. Twelve new structures will be installed within the flood zone and, of these; five will be installed within the floodway. Project activities within the flood zone will conform to DEEP requirements. To compensate for the flood storage capacity lost by installing the structures within the flood zone, Eversource will excavate a specific volume of material (9,064 cubic feet) at a designated upland location within the floodzone to compensate for the lost storage capacity. All work pads and work road established within the flood zone will be removed and the areas restored so that there is no resulting decrease in flood storage capacity.

Rare and endangered species

In accordance with Council D&O Condition 3, Eversource will comply with DEEP recommendations and employ site specific protection measures for six species listed on the Natural Diversity Database that could potentially occur within the Project area. The provisions are species specific and generally consist of the following elements: contractor awareness, work period restrictions, silt fence details, flagging of critical habitat, minimization of habitat disturbance to the extent practical, and reporting to DEEP. Eversource is consulting with DEEP to ensure the prescribed protection methods minimize impacts to these species to the greatest extent possible.

Public trails and recreational areas

The Project will occur adjacent to one public hiking trail and will cross several open space and recreational areas. Eversource will deploy appropriate signage, barriers, and reroute trails or access points, if feasible, to minimize disruption to recreational areas and open space access points.

Cultural Resources

Eversource, in coordination with SHPO, previously surveyed the Project area for cultural resources. Although no archaeological sites or features of importance were identified during these surveys, Eversource will have a professional archeological firm available to respond to any potential archeological resources that are discovered during construction.

Vegetative Management

Construction of the project will require vegetation removal along the ROW to allow for the installation of the new transmission line, to provide and maintain access to transmission line structures, and to provide safe distances between the conductors and adjacent forest vegetation. Existing upland vegetation in the managed portion of the ROW consists of shrubs and small trees generally below 20 feet in height.

Eversource has provided a Vegetation Clearing Plan that specifies construction clearing limits and methods to ensure compliance with established minimum vegetation clearances for construction and operation of the new transmission line as well as to maintain compliance with applicable state and federal Project permits. Approximately 5.8 acres of upland forest and 2.6 acres of forested wetland will be cleared within unmanaged portions of the existing transmission ROW. After construction of the new transmission line, the newly cleared areas will be managed as maintained ROW. Work at the Stony Hill Substation will require the removal of 871 square feet of upland forest.

All tall growing species will be removed within the identified clearing limits using mechanical methods. Other types of vegetation such as shrub growth and lawn areas will be removed if necessary. Desirable low growing species will be retained to the extent practical. Stumps will be cut to 6 inches or less above grade and will remain in place unless stump removal is necessary for road or work pad construction.

Along stream banks and within wetlands, low-growing vegetation will be maintained to the extent practicable. Near streams, vegetation removal will be performed selectively, preserving desirable vegetation within a 25-foot-wide riparian zone on either side of the stream bank. In wetlands, vegetative clearing will be conducted using methods to minimize vehicle rutting of wetland soils. Temporary access specific to clearing will be necessary in large wetland areas in order to achieve proper vegetative clearance zones for construction equipment as well as conductor clearance zones. These temporary access areas will be allowed to revert to forest once clearing is completed.

The clearing contractor will be responsible for the disposition of waste wood and will be in accordance with landowner agreements. Wood disposition could include chipping, Project construction use, or removal off-site for forest product use. Wood waste will not be allowed to be stockpiled or chipped within wetlands, watercourses, or environmentally sensitive areas.

Spill Prevention and Countermeasures Plan

As part of its D&M Plan, Eversource submitted a Spill Prevention and Countermeasures Plan (SPCP). The SPCP describes measures to minimize the potential for a spill of petroleum products or hazardous or toxic substances and, if a spill does occur, to contain the release of the spill and minimize its effects. Additionally, Eversource included provisions for construction equipment and vehicle washing in off-ROW upland areas.

Independent Environmental Inspector

Pursuant to the Council's D&O Condition 4, Eversource will retain an independent environmental inspector during construction of the Project, subject to Council approval. The inspector will monitor construction of the new 115-kV transmission line and related substation modifications. The inspector will provide a bi-weekly monitoring report to the Council. Additionally, the inspector will coordinate with Eversource's Project specific environmental compliance monitor and report any observed practices that are inconsistent with Project approvals and permits to the monitor for further action.

Post-Construction EMF Monitoring Plan

Consistent with the Council's D&O Condition 2(n), Eversource has submitted a post-construction Electric and Magnetic Field Monitoring Plan for the Project. Electric and magnetic field measurements will be made on the existing ROW to compare actual levels to calculated levels. Eversource will collect measurements in two previously identified Focus Areas, as follows; the Lexington Meadow condominium complex along the Bethel-Danbury border and a residential area on Chimney Drive in Bethel. Within 12 months of the in-service date of the new 115-kV line, Eversource will submit a report to the Council containing the results of the measurements with comparisons to predicted values.

Reports

The following reports will be provided to the Council:

1. A **Monthly Construction Progress Report**: As required by RCSA § 16-50j-62(b)(3), this report will summarize construction progress as well as any identify changes and deviations to the approved D&M Plan.
2. A **Bi-Weekly Independent Environmental Inspector Report**: As required by the D&O condition 4, this report will describe the status of construction and associated environmental protection measures.
3. A **Final Report**: As required by RCSA § 16-50j-62(c), Eversource will provide this report no later than 180 days after completion of all site construction and rehabilitation. The report will identify:
 - a) All agreements with abutters or property owners regarding special maintenance precautions
 - b) Significant D&M Plan changes necessary due to property rights/ landowner concerns or for other reasons.
 - c) The location of any construction materials left in place.
 - d) The location of areas where special plantings and reseeded have been performed.
 - e) The actual construction cost of the facility.

4. An **Operating Report**: As required by the D&O Condition 8, Eversource will provide this report within three months after the conclusion of the first year of the operation of all project facilities, and annually thereafter for three years. The report will describe the overall condition, safety, reliability, and operation of the transmission systems.

Recommendations

The 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 10, 2016. Council staff recommends approval of the D&M Plan with the following conditions:

1. Submit the qualifications of the Independent Environmental Inspector for Council review and approval;
2. Submit Post-construction EMF measurements from the selected focus areas; and
3. Submit a Project Blasting Plan, if applicable.