Petition No. 1405
Eversource Energy
Horton Cove Circuit Separation Project
Montville, Connecticut
DRAFT Staff Report
July 10, 2020

Introduction

On May 6, 2020, the Connecticut Siting Council (Council) received a petition (Petition) from The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed Horton Cove Circuit Separation Project consisting of a partial rebuild and separation of approximately 1 mile of its existing No. 100 69-kilovolt (kV) and Nos. 1410, 1280, and 1080 115-kV electric transmission line structures within existing Eversource electric transmission right-of-way (ROW) between a location east of Depot Road to a point east of Point Breeze Road, and related electric transmission line structure improvements in Montville, Connecticut.

On May 7, 2020, the Council sent correspondence to the Town of Montville (Town) stating that the Council has received the Petition and invited the Town to contact the Council with any questions or comments by June 5, 2020. No comments have been received.

The Council submitted interrogatories to Eversource on June 2, 2020, which included photographic documentation and photographic simulations of site-specific features in lieu of a field review of the project. Eversource submitted responses to the interrogatories on June 23, 2020.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. July 5, 2020 was the deadline for this Petition under CGS §4-176(e). In response to the Coronavirus pandemic, on March 25, 2020, Governor Lamont issued Executive Order No. 7M that provides for a 90-day extension of statutory and regulatory deadlines for administrative agencies. Thus, the deadline under CGS §4-176(e) is extended to October 3, 2020.

The purpose of the proposed project is to reconfigure the four transmission lines currently supported on the Horton Cove lattice structures to improve system reliability.

Municipal and Abutter Notice

In March 2020, Eversource consulted with the Town regarding the proposed project and provided a briefing on the project. From late winter through early Spring 2020, Eversource conducted outreach to property owners located along the ROW.

On May 6, 2020, Eversource provided representatives of the Town and abutting and underlying property owners with written notice of the Petition filing. No comments have been received to date.

Existing Project Area

The existing project area is an approximately one-mile portion of Eversource ROW that hosts Line Nos. 100, 1410, 1280, 1080, 1000, and 1090. It begins at Depot Road, crosses a portion of Gay Cemetery Pond, then crosses Horton Cove to reach Montville Junction, and then it continues past where the ROW splits into two: one ROW continuing north (towards Fort Hill Farms Substation in Montville) and one ROW turning to the east towards the Thames River (and continuing to Gales Ferry Substation in Ledyard).

There is no asset condition or line performance issue that would require or warrant rebuilding the 1090 Line and 1000 Line at this time.

The width of the existing ROWs within the project area varies from 160 feet to 280 feet wide.

Proposed Project

Due to the operational history of the Nos. 100, 1410, 1280, and 1080 Lines currently supported on lattice structures at an aerial crossing of Horton Cove, this location is highly susceptible to outages associated with lightning strikes and interruptions resulting from other factors affecting the transmission system in the area. These other factors include, but are not limited to, a long span over Horton Cove with tall structures and four circuits on the same structure. In addition to lightning strikes on the circuits in this vicinity, interruptions have occurred from failed insulators and shield wires.

With the exception of two double-circuit structures[1] that would replace the quad-circuit structure on the west side of Horton Cove, all remaining structures would support a single circuit. This reconfiguration eliminates the potential that four circuits could be taken out of service due to a single contingency event, such as a structural failure or disruption caused by a lightning strike.

Additionally, Eversource has determined that four structures on the east side of Horton Cove need to be replaced due to asset condition. The steel structures were identified as having steel corrosion and weakened leg members, and the wood structures were identified as having woodpecker damage, rotting, cracks, and/or split pole tops. While addressing these asset condition issues, the proposed project would also enhance system reliability by the installation of lightning arrestors and optical ground wire (OPGW).

The Project entails the following:

a. Replacement of quad-circuit steel lattice Structure No. 7008 on the west side of Horton Cove with two double-circuit galvanized steel monopole structures identified as Structure Nos. 7008A and 7008B;
b. Replacement of quad-circuit steel lattice Structure No. 7009 on the east side of Horton Cove with four single-circuit galvanized steel monopole structures identified as Structure Nos. 7009A, 7009B, 7009C, and 7009D;
c. Replacement of double-circuit steel lattice Structure Nos. 6306, 7007, 7010, and 7011 with eight single-circuit galvanized steel monopole structures identified as Structure Nos. 6306A, 6306B, 7007A, 7007B (west of Horton Cove) and Structure Nos. 7010A, 7010B, 7011A, and 7011B (east of Horton Cove);
d. Replacement of single-circuit wood H-frame Structure Nos. 8342-8345 (due to asset condition issues) with four single-circuit galvanized steel H-frame structures;
e. Replacement of single-circuit steel H-frame Structure No. 6309 with one single-circuit

[1] Eversource has determined that the use of two double-circuit structures rather than four single-circuit structures is the best cost alternative. The difference in system reliability at this location would be negligible.

galvanized steel H-frame structure;

f. Replacement of the existing 556 kilo-circular mils (kcmil) 24/7 aluminum conductor steel reinforced (ACSR) conductors and 1272 45/7 kcmil ACSR conductors with 1590 kcmil 54/19 aluminum conductor steel support (ACSS) conductors;
g. Replacement/installation of OPGW;
h. Installation of lightning arresters on proposed Structure Nos. 7008A, 7008B, 7009A, 7009B, 7009C, 7009D, 7010A, and 7010B; and
i. Installation of hardware and insulators on all structures and counterpoise, as needed.

All structure replacement work would be performed within the existing ROW.

The existing wood structures range in height from 45 to 75 feet above ground level, and the existing steel structures range in height from 65 feet to 130 feet. With the exception of Structure No. 7008[2], the height increase for the replacement structures would be about 25 to 30 feet above the corresponding existing structures to comply with current clearance requirements. All replacement structures would be positioned approximately 9 to 50 feet laterally and 25 to 45 feet longitudinally from the corresponding existing structure locations.

Project Construction and Work Procedures

Eversource and/or its contractors would locate temporary staging areas from available parcels in the vicinity of or within the project area that would be used to store construction equipment. Office trailers may also be located at a staging area. Components removed during work may be temporarily accumulated and stored at a staging area prior to removal off-site for salvage and/or disposal. The staging areas may also be used for parking and performing minor maintenance on construction equipment. An environmental review of each potential staging area would be completed, and erosion and sedimentation (E&S) controls would be installed and maintained as needed until project completion in accordance with Eversource's *2016 Best Management Practices Manual for Massachusetts and Connecticut* (Eversource BMPs). If approved, Council staff suggests including a condition that the final staging area location(s) with applicable E&S control measures and restoration plans, as necessary, be submitted to the Council.

The Project would utilize existing access roads to the extent possible. Some new (typically gravel) access road construction would also be required. Existing access roads may need to be improved (e.g. graded, widened, and/or reinforced) with additional stone material to accommodate construction vehicles and equipment. Typically, a maximum travel surface of an access road would be about 16 feet wide. Additional width may be necessary for turning or passing locations. No new access roads (or use of existing access roads) would cross water resource areas.

At each transmission line structure location, a work pad would be constructed to stage material for final on-site assembly and to provide a safe, level work base for construction equipment. Work pads for the project would range from approximately 125 feet by 125 feet to approximately 235 feet by 180 feet and may be used for both the installation of new structures and the removal of old structures. Pull pads would generally range from 200 feet by 80 feet to 265 feet by 125 feet. Most work pads would be graveled, though some would use temporary matting to protect sensitive resource areas such as lawns, meadow and identified cultural resource areas.

[2] Existing Structure No. 7008 is approximately 120 feet. Proposed Structure Nos. 7008A and 7008B would be approximately 185 feet and 170 feet tall, respectively.

Construction areas (including access roads to be constructed and/or improved) would be isolated by establishing E&S controls in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and Eversource BMPs. Typical E&S controls include, but are not limited to, the use of hay bales and silt fence, straw blankets, rock construction entrances, soil and slope protection, water bars, check dams, berms, swales, plunge pools, and sediment basins. A project-specific Stormwater Pollution Control Plan would be developed for registration under the Department of Energy and Environmental Protection's (DEEP) *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities*.

All proposed structures would have drilled (caisson) foundations. Foundation work would require the use of equipment such as a mechanical excavator (drill rigs), pneumatic hammers, augers, drill rigs, dump trucks, concrete trucks, grapple trucks, and light-duty trucks. If groundwater is encountered, pumping (i.e. vacuum) trucks or other equipment would be utilized. The water would then be discharged in accordance with applicable local, state and federal requirements. Excavated soils would be stored or spread in upland areas within the ROW, to the extent practicable. Materials that cannot be utilized as backfill would be disposed of in accordance with applicable regulations.

New structure sections and associated hardware would be delivered by flatbed truck to each work pad for assembly by crane and bucket trucks. Supplemental grounding (i.e. counterpoise) would be installed as necessary using a quad plow-cable trencher or equivalent.

New conductors and OPGW would be installed after the structures are installed. The required equipment would include conductor reels, conductor pulling and tensioning rigs, guard trucks/structures, and bucket trucks. The use of helicopters is not expected to be necessary.

After the removal of the existing structures and the energizing of the lines, restoration of the ROW would commence and include removal of debris, signage, temporary fencing, and construction mats/pull pads/work pads. Disturbed areas would be restored as practical and stabilized using revegetation or other measures prior to the removal of the temporary E&S controls. Such ROW restoration would be performed in accordance with the Eversource BMPs and in consultation with affected property owners.

Eversource proposes to begin work in October 2020. Normal work hours would be Monday through Saturday from 7:00 a.m. to 7:00 p.m. On occasion, Sunday work hours are anticipated to be required from 9:00 a.m. to 6:00 p.m. and evening work hours after 7:00 p.m. due to outage constraints during the week.

Environmental Considerations

Abutting land uses to the project area primarily consist of a mix of residential development and undeveloped areas that include agriculture, forests, Gay Cemetery Pond, the Thames River, and Horton Cove. The ROW also abuts/crosses portions of the New England Central Railroad at Point Breeze Road and an inactive spur line located on the western shore of Horton Cove. A municipal water treatment facility is located slightly north of the ROW.

Some limited tree removal, side trimming and vegetation removal are required for the project in order to accommodate the work and to provide required safety clearances from the conductors. All tree/vegetation removal would be in upland areas. The required amount of tree removal is estimated to result in a total permanent forested conversion of 0.62-acre to scrub-shrub or herbaceous habitat areas. Given the limited extent of forest conversion to shrubland (or emergent vegetation), this would not be expected to adversely affect forested habitat. Shrubland and early successional habitat along the ROW is beneficial for many species of wildlife.

A wetland/watercourse survey and delineation was performed on December 7, 2019. Two regularly flooded tidal wetlands were identified: one on the east side of Horton Cove and one on the west side of Horton Cove. The third wetland is a permanently flooded non-tidal wetland associated with Gay Cemetery Pond, which is an impounded portion of the Oxoboxo Brook watercourse.

No indicator species for vernal pool habitat were observed within the wetlands of the project area.

No work is proposed within the wetland/watercourse/waterbody areas. All work proximate to these locations would be conducted in accordance with Eversource BMPs and applicable regulatory permitting requirements.

Approximately 0.45-mile of the project area is located within the Federal Emergency Management Agency (FEMA) designated 100-year and 500 year flood zones. However, no work is proposed within such flood zones.

The proposed project is not located within a DEEP-designated Aquifer Protection Area. The project area is not within a public water supply watershed and does not cross any public supply reservoirs or public water supply wells.

Eversource has consulted with DEEP regarding the Natural Diversity Database (NDDB). By letter received on March 26, 2020, DEEP indicated that negative impacts to state-listed species are not expected to result from the proposed project.

Eversource also consulted with the U.S. Fish & Wildlife Service's Information, Planning and Consultation (IPaC) service regarding federally-listed species that may be present within the project areas. The IPaC report indicated that two federally-listed Threatened Species: the northern long-eared bat (NLEB) and the small whorled pogonia may occur in proximity to the proposed project area.

There are no known NLEB maternity roost trees within 150 feet of the project area, and the nearest NLEB hibernaculum is approximately 33 miles to the southwest in North Branford. Therefore, no impacts to the NLEB is anticipated.

The Small Whorled Pogonia habitat requirements include flats or slope bases having a moderate to light shrub layer and a relatively open canopy. No suitable habitat for this species was identified within the Project area.

While recreational uses such as boating and fishing are associated with Horton Cove and the Thames River and the project would be traversing through some of these areas, the project would not impact such water-dependent recreational uses.

The proposed project neither crosses nor is proximate to any Connecticut Blue-blazed hiking trails or other known trail systems. The nearest mapped trail system is the Decatur Trail, located approximately 0.82-mile to the southeast in Gales Ferry.

The majority of the tree removals would occur along the northern portion of the Kitemaug Road, near Structure Nos. 8342 and 8343 and along the southern portion of Kitemaug Road and Cover Road, near Structure Nos 7009 and 8343. Limited tree removal would also occur on the south side of the ROW near Structure Nos. 7007B and 7008B. While some vegetative screening would remain in these areas, there is potential for an increase in visibility (due to vegetation removal) along the eastern shore of Horton Cove and for immediate abutters of the ROW along Depot Road, Kitemaug and Cove Road. The project would result in a change to the visual character of the ROW; however, these changes are not expected to result in a significant effect on views beyond the area of the project. Additionally, while the proposed structures would typically be taller, the use of monopoles would present a more streamlined appearance to mitigate the visual effects as compared to the existing double and quad-circuit lattice structures. For aesthetics, galvanized steel structures are proposed to match the existing galvanized steel poles within the ROW and at the Thames River crossing.

Heritage Consultants, LLC (Heritage) prepared a Phase 1A Cultural Resources Assessment (Phase 1A Assessment) in January and February 2020. Per the Phase 1A Assessment, there are no National Register of Historic Places (NRHP), state or locally-listed properties, or historic districts within 500 feet of the project ROW. The Phase 1A Assessment identified 13 locations within the project area as having moderate to potential for archaeological sensitivity. This prompted further investigation via a Phase 1B Professional Cultural Resource Reconnaissance Survey (Phase 1B Survey). The Phase 1B Survey identified three prehistoric cultural resource locations. Two locations were identified as not significant, and one was identified as having intact cultural deposits near the work areas for proposed Structure Nos. 7008A and 7008B and may retain research potential and qualities of significance per NRHP criteria. Eversource would utilize temporary matting at this location to avoid ground disturbance.

The results of the Phase 1B Survey were provided to the State Historic Preservation Office (SHPO) and the Tribal Historic Preservation Offices of the Connecticut Tribe of Mohegan Indians and the Mashantucket Pequot Tribal Nation (collectively, the THPOs) on April 2, 2020.

By letter dated April 7, 2020, the SHPO indicated that it concurs with Eversource's proposed avoidance and construction management plan that includes the use of timber matting, and with such measures, the proposed project would not have an adverse effect on cultural resources. As of June 2, 2020, Eversource has not received any responses from the THPOs.

Construction-related noise is exempt per DEEP noise regulations. Notwithstanding, any construction-related noise would be short-term and localized in the vicinity of work sites. There would be no permanent changes to the existing sound levels after completion of the Project.

Magnetic Fields

The Project route already contains an existing transmission line that emits magnetic fields (MF). In the United States, no state or federal exposure standards for 60-Hertz MF based on demonstrated health effects have been established, nor are there any such standards established world-wide. However, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) has established a level of 2,000 milliGauss (mG), based on extrapolation from scientific experimentation, and the International Committee on Electromagnetic Safety (ICES) has calculated a guideline of 9,040 mG for exposure to workers and the general public, and recognized in the Council's *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut.*

Eversource reviewed MF levels associated with the Project. Thus, for the proposed Eversource transmission modifications in Montville, between proposed Structure Nos. 6306A and 6306B and Montville Junction, the MF levels in the ROW under average annual load conditions (AALC) would decrease from a pre-construction maximum of about 18.2 mG to a post-construction maximum of approximately 10.8 mG. Between Montville Junction and proposed Structure Nos. 7011A and 7011B, the MF levels in the ROW under AALC would decrease from a pre-construction maximum of 77.2 mG to a post-construction maximum of about 37.1 mG. The Council notes that this would all be below the ICNIRP maximum exposure limit of 2,000 mG.

Recommended Conditions

If approved, staff recommends including the following conditions:

1. Approval of any minor project changes be delegated to Council staff; and
2. Submission of the final staging area location(s) with applicable E&S control measures and restoration plans, as necessary.

Project Location