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Docket 3B
The United Illuminating Company
Derby Junction to Ansonia 115-kV Transmission Rebuild Project
Partial Development and Management Plan I
Ansonia
Staff Report
January 13, 2022

On October 28, 2022, the Connecticut Siting Council (Council) issued a Modified Certificate of Environmental Compatibility and Public Need (Certificate) to The United Illuminating Company (UI) for the construction, maintenance, and operation of a rebuilt 115-kV electric transmission line, associated equipment and related improvements to Ansonia Substation in Ansonia, and to Derby Junction and Indian Well Substation in Derby utilizing the Alternative 1 Configuration (Project). In its Decision and Order (D&O), the Council required UI to submit a Development and Management (D&M) Plan in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies (RCSA). Under RCSA §16-50j-60, the D&M Plan shall be submitted to the Council in one or more sections/phases.

On December 28, 2022, in compliance with RCSA §16-50j-62, UI submitted its first phase of the D&M Plan (Partial D&M Plan I) for the Project to the Council and the service list. Partial D&M Plan I addresses the final configuration of Structure Nos. 17 and 18.

The 115-kV #1594 and #1560-3 Lines[1] are located on double-circuit lattice structures that will be replaced with monopole structures. Existing Structure Nos. 17 and 18 are double-circuit lattice structures approximately 78.5 feet and 82.5 feet tall, respectively, and located adjacent to a residential area north of Scotland Street in Ansonia. A park/recreational area is located immediately north of this portion of the existing transmission line right-of-way (ROW).

Condition No. 3(b) of the D&O requires the following information to be included in the D&M Plan:

b) **Review and consideration of double-circuit monopole configurations for Structure Nos. 17 and 18, including a cost estimate.**

For each design configuration presented below, UI determined construction sequencing of the portion of the Project between Structure Nos. 17 to 19 only to demonstrate the differences between the proposed and alternative design options.

Two Pole, Single Circuit Configuration Proposed Design

This is UI's preferred and originally proposed design to utilize two single-circuit monopole structures at each of the Structure Nos. 17 and 18 locations. Specifically, Structure No. 17 would be replaced with monopole Structures Nos. 17A and 17B with heights of approximately 105 feet each. Structure No. 18 would be replaced with monopole Structure Nos. 18A and 18B with heights of approximately 115 feet each.

In the proposed design configuration, Structure Nos. 17B and 18B would be located along the rear property lines of residences on the north side of Scotland Street. The Council ordered consideration of double circuit monopole configurations for Structure Nos. 17 and 18 due to their location adjacent to residential areas.

[1] The #1560-3 Line is on the north side of the structures, and the #1594 Line is on the south side of the structures.

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This design was selected by UI to minimize construction steps and temporary construction; reduce construction time; maintain safe working clearances to the line that must remain energized during construction and removals; and avoid shifting conductors west of Structure 19 onto certain adjacent residential properties off of North Westwood Road.

Construction of the two pole, single circuit configuration design would be performed by rebuilding one circuit at a time (while leaving the other line energized). UI would pour foundations for the structures; de-energize and remove #1594 circuit from Structure #14 to Ansonia Substation; install structures for #1594 circuit; install conductors and optical ground wire (OPGW); and re-energize #1594 circuit. A similar process would be used to rebuild the #1560-3 line but would include the removal of the existing lattice structures.

UI's preferred two pole, single circuit configuration design would have a baseline cost of $3.09M with a cost delta of zero.

One Pole, Double Circuit Configuration Alternative Design

This alternative design would utilize a double-circuit monopole structure at each of the Structure Nos. 17 and 18 locations. Specifically, Structure No. 17 would be replaced with monopole Structure No. 17 with a height of approximately 105 feet. Structure No. 18 would be replaced with monopole Structure No. 18 with a height of approximately 115 feet.

In the alternative design configuration, the #1594 circuit conductors would shift northwards towards Nolan Field Athletic Complex in Ansonia. There would be fewer structures in the vicinity of a residential area and the park because the Structure locations 17 and 18 would have a total of two monopoles instead of four. This would also result in the conductors of the #1594 circuit (immediately west of Structure location 19) moving farther to the north onto the residential property lines along North Westwood Road, Parcel Nos. 6210, 6211 and 6212, and the #1560-3 circuit would move farther north onto these same properties.

Due to existing structural deficiencies associated with Structure No. 19, construction of this alternative design would require three temporary poles at Structure 19. Due to structural loading associated with the double-circuit structures, this design would also require larger drilled shaft foundations for Structure Nos. 17 and 18, and the foundation of Structure No. 18 would require a slight encroachment (six to nine inches) into the sidewalk.[2] UI would also need to acquire an additional temporary easement to accommodate the temporary construction around existing Structure No. 19.

Construction of the single pole, double circuit configuration would be performed by installing a temporary #1560-3 circuit within the ROW from Structure locations 16 to 20.[3] Once the temporary circuit is energized and #1594 circuit is de-energized, UI would pour foundations and install structures prepared with davit arms for the #1594 circuit. UI would install conductors and OPGW for the #1594 circuit to connect to Ansonia substation and would energize such circuit. UI would de-energize the #1560-3 circuit and remove temporary and existing conductors from Structure No. 14 to Ansonia Substation. Existing lattice towers

[2] The City of Ansonia would support the encroachment into the sidewalk for the Structure No. 18 foundation and the movement of the conductors towards the football fields.

[3] In the portion of ROW between Structure locations 17 and 19, the temporary line would be on the north side of the ROW and would be closer to residences along North Westwood Road.

would be removed. Existing temporary structures would be removed. UI would then install permanent conductors on davit arms and overhead shield wire on top. UI would then energize #1560-3.

UI's alternative one pole, double circuit configuration design would have a cost of $3.54M or a cost delta of approximately $450k.

Conclusion

Partial D&M Plan I is consistent with Condition No. 3(b) of the Council's D&O for Docket No. 3B.