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June 3, 2016

VIA HAND DELIVERY AND ELECTRONIC

Robert Stein
Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition No. 1176 - The United Illuminating Company petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed Bridgeport 115-kV transmission line upgrade project consisting of the northern and southern sections of 115-kV lines extending from Congress Substation in the City of Bridgeport to Baird Substation in the Town of Stratford, Connecticut and related substation improvements.

Dear Chairman Stein:

In response to the Council's conditions of approval for Petition No. 1176 I have enclosed 16 copies of the Development and Management Plan for Petition No. 1176, in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies, on behalf of The United Illuminating Company. A courtesy copy of the D&M Plan will be sent, via FedEx, to the Town of Stratford and the City of Bridgeport.

Please do not hesitate to contact me should you have any questions concerning this filing.

Very truly yours,

James R. Morrissey
Attorney
UIL Holdings Corporation
Counsel for The United Illuminating Company

Cc: Amy Hicks, The United Illuminating Company



The United Illuminating Company

Development and Management Plan
for the
Bridgeport 115-kV Transmission Line Upgrade Project
&
The Modifications to the Transmission Lines in
Bridgeport and Stratford, Connecticut

Petition No. 1176

June 3 , 2016

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1.0 INTRODUCTION

The United Illuminating Company (UI) prepared this Development and Management (D&M) Plan for the construction of the Bridgeport 115-kV Transmission Line Upgrade Project and the Modifications to the 115-kV Transmission Lines in Bridgeport and Stratford, Connecticut (Project). This D&M Plan covers all construction for this Project. It was prepared in accordance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies.

1.1 PROJECT BACKGROUND AND DESCRIPTION

UI plans to replace transmission structures of a double circuit 115-kV transmission line, located in Bridgeport and Stratford, Connecticut in the New Haven to New York railroad right-of-way. The existing UI owned structures along the corridor consist of steel bonnets which are located and attached at the top of railroad catenary structures owned by Connecticut Department of Transportation (CDOT) as well as steel column 'H' frame structures owned by UI. The purpose of this Project is to upgrade and enhance the reliability in the area. The topographic quadrangle maps in Appendix B illustrate the location of the Project right-of-way (ROW).

As part of the Project, UI is proposing the following work

- Along the north side of the railroad, "North Line", from Baird Substation in Stratford to Congress Substation in Bridgeport, 47 steel bonnet structures, and 1 H-Frame structure are proposed for replacement with a total of 42 single steel monopole structures (Refer to Appendix C Plan Drawings); and
- Along the south side of the railroad, "South Line", from Baird Substation in Stratford to Congress Substation in Bridgeport, 47 steel bonnet structures and 1 H-Frame structure are proposed for replacement with a total of 41 single steel monopole structures (Refer to Appendix C Plan Drawings);

1.2 PROJECT CHANGES

Several design changes have occurred since Petition 1176 was approved. A number of changes were the result of design optimization and coordination with the Baird Substation Project (Docket 465). These changes include shifting structures 825AS, 825ANS, and 825ANN to the east by approximately 150 feet. Structures 824S, and 824N were shifted 50 feet to the west. Additionally, access to structure 825ANN was revised due to the topology and to accommodate construction access to other structures that need to be installed for the Baird Substation Project. These revisions can be seen on drawings 24217-0811 and 24218-0810 in Appendix C.

Finally there is a change in the project schedule due to Metro-North Railroad (MNR) outage constraints that were only just recently identified. MNR currently has their northern most track out of service until the end of September 2016 after which it will be returned to service. In order for UI to construct the access road to drill foundation 825ANN MNR requires the northern most track to be out of service. UI had originally planned on performing this work in the beginning of 2017. However, due to the current MNR track outage plans UI wouldn't be able to get the necessary track outage in the beginning of 2017. To accomplish this work UI needs to accelerate construction to begin by August 15th 2016. If UI cannot complete this construction by the end of September, the next time a track outage would be granted is early 2018.

1.3 D&M PLAN PURPOSE AND ORGANIZATION

Pursuant to the conditions included in the Connecticut Siting Council ("CSC") ruling, UI has prepared this D&M Plan, which describes the procedures to be followed during the construction of the Project facilities. In particular, this D&M Plan describes the general procedures for:

- Construction of the Project facilities, the construction schedule and methods, procedures for environmental inspection and Project administration, and techniques for agency notifications or community outreach.
- Restoration of the work areas and other sites affected by construction (e.g., laydown areas, and crossings of roads, streams, wetlands).
- Traffic control on state and municipal roadways.

This D&M Plan is formatted to provide concise information about the different elements of the construction process, ranging from standard construction methods to specific procedures and mitigation measures used in sensitive environmental areas or near residential developments. This D&M Plan shall be used in the field during Project construction and as a reference tool for activities such as agency notifications or community outreach.

The text of this D&M Plan is to be used in conjunction with the detailed Plan Drawings (Appendix C). The Plan Drawings are plotted at a scale of 1 inch equal to 40 feet to illustrate the Project route, land ownership, laydown areas, ancillary facilities, environmental features and site-specific construction procedures. Some of the procedures presented in this D&M Plan may be modified in the field due to changes in site-specific conditions at the time of construction. Procedures for informing the CSC of any modifications are described in Section 7.

1.4 DESCRIPTION OF D&M PLAN STUDIES

This D&M Plan reflects the results of both environmental and engineering studies that were conducted to assist in the final design of the Project. Studies were completed along the existing 115-kV electric transmission line ROW. These studies included:

- Field engineering studies to select exact locations for the replacement structures, and to identify access roads for use during construction.
- Biological studies, including delineation of federal and state jurisdictional wetlands and watercourses, inventory of vernal pools and amphibian breeding habitats, and general vegetation (cover type) inventories of areas to be cleared as part of the Project.
- A cultural resources review to assess the sensitivity of the Project area for the location of significant archaeological or historic resources.

The information gathered during these studies was used to prepare the final design for the Project, develop mitigation and restoration plans, and to provide a thorough information base in preparation for construction and workspace restoration.

2.0 REGULATORY APPROVALS AND CONSULTATIONS

2.1 REGULATORY APPROVALS AND REQUIREMENTS

This D&M Plan (i) conforms to the specifications of RCSA Sections 16-50j-60 through 16-50j-62 (Requirements for a D&M Plan, Elements of a D&M Plan, Reporting Requirements); and (ii) reflects adherence to the conditions of the CSC’s ruling for the Project and other relevant regulatory approvals.

2.2 CONSULTATIONS

The Project has received regulatory approvals or clearances from State and Federal agencies including:

- United States Army Corps of Engineers (“USACE” or “the Corps”)
- United States Coast Guard (“USCG”)
- Connecticut Department of Energy and Environmental Protection (“CT DEEP”)
- Office of Long Island Sound (“OLISP”)
- CT DEEP Natural Diversity Database (“NDDB”)
- State Historic Preservation Office (“SHPO”)

UI has consulted with municipal officials in the City of Bridgeport and the Town of Stratford during the preparation of this D&M Plan. UI will also submit applications for local road crossing, street excavation and blasting permits where necessary. UI is coordinating with Connecticut Department of Transportation (“CDOT”) and Metro-North Railroad (“MNR”) regarding approval for construction of the overhead transmission lines crossing the railroad and within the CDOT ROW. Project construction in locations requiring specific permits will not start until these permit approvals are received.

UI will comply with the requirements and conditions in the siting and permitting approvals summarized in Table 2-1. UI will monitor the construction Contractor’s¹ compliance on a daily

¹ As used in this D&M Plan, the “Contractor” refers to a firm or business engaged by UI to perform construction and/or other services in support of the Project.

basis during construction with the input from UI’s Environmental Analyst and an Environmental Inspector (“EI”). UI will report to the CSC as required.

Table 2-1: Other Approvals / Consultations for the Project

Issuing Agency	Approval/Consultation	Permit or Registration Number
Federal		
USACE	Section 404 Project Notification Form (Included in Appendix E)	NAE-2015-1881
USCG	Application for Marine Event	TBD
State of Connecticut		
CT DEEP	Natural Diversity Data Base Review (for Species of Special Concern, Threatened Species and Endangered Species)	2016005119
	Stormwater and Dewatering Wastewaters from Construction Activities Registration (see Appendix G)	TBD
OLISP	Certificate of Permission (see Appendix F)	201507458 - SJ
SHPO	Project Review Form	Appendix K
PURA	Approval of method and manner of line construction and to energize upon completion	

In the event where undocumented and/or non-permitted situations occur during construction activities, all work at that location will stop immediately. UI’s project team will work to determine on how the situation needs to be addressed and which agency or agencies need to be contacted. Work will not begin at this location until the project team has developed a resolution and received approval from all applicable agencies and/or stakeholders.

3.0 GENERAL CONSTRUCTION PROCEDURES

3.1 PROJECT FACILITIES AND LAND REQUIREMENTS

The Project consists of replacing 94 existing steel bonnets, and 2 H-Frame structures with 83 single steel monopole structures of an existing double circuit 115-kV transmission line. The Project facilities will be sited within existing transmission ROWs where feasible, and the construction of these facilities will require the temporary and permanent use of various areas. The following section provides a narrative description of the facilities of the Project.

3.1.1 *OVERHEAD LINE FACILITIES*

3.1.1.1 *115-kV Overhead Transmission Line – North Line*

The overhead 115-kV line begins at Baird Substation in Stratford and ends at Congress Substation in Bridgeport. The North Line of the Project is located in both the Town of Stratford and the City of Bridgeport. The North Line is situated within existing and managed railroad ROW that varies from 40 to 160 feet in width. In general, the full width of this portion of the ROW is actively maintained by both UI and MNR and is characterized by low-growth vegetation.

Along the North Line, the existing ROW currently contains existing 115-kV transmission lines on steel bonnets attached to railroad catenary structures. The North Line utilizes the north set of bonnets, which will be replaced as part of the Project.

3.1.1.2 *115-kV Overhead Transmission Line – South Line*

The overhead 115-kV line begins at Baird Substation in Stratford and ends at Congress Substation in Bridgeport. The South Line of the Project is located in both the Town of Stratford and the City Bridgeport. The South Line is situated within existing and managed railroad ROW that varies from 40 to 160 feet in width. In general, the full width of this portion of the ROW is actively maintained and is characterized by low-growth vegetation.

Along the South Line, the existing ROW currently contains existing 115-kV transmission lines on steel bonnets attached to railroad steel catenary structures. The South Line utilizes the south set of bonnets, which will be replaced as part of the Project.

3.1.1.3 *Overhead Transmission Line Components*

All of the existing steel bonnets will be replaced with steel monopole structures along both sections of the Project. The galvanized steel structures will be installed with concrete drilled pier foundations.

3.1.1.4 *Overhead Transmission Line Height/Structure Heights*

The height of the transmission line will depend on the changes in ground elevation along the route, crossings of other overhead facilities such as power and communications lines, and crossings of roads. In addition, to minimize impact on landowners, structure heights will also be governed by placing new structures near the old structures that will be removed, and by not adding additional structures – that is, replace the old structures one for one with new structures when possible. The longer the span between these desired structure locations, the taller the structure needs to be to meet the National Electric Safety Code (NESC) clearance criteria.

Along the North Line, structure heights for the single steel monopole structures vary from 80 to 120 feet, with an average height above ground of approximately 80 feet.

Along the South Line, structure heights for the single steel monopole structures vary from 80 to 120 feet, with an average height above ground of 90 feet.

The structure heights are depicted on the Plan Drawings included in Appendix C.

3.2 CONSTRUCTION MANAGEMENT AND CONTACT INFORMATION

The contact information for the project team, consisting of name, telephone number, and e-mail can be found in Appendix M.

3.3 GENERAL CONSTRUCTION SEQUENCE

UI will construct the proposed transmission lines in several stages, some overlapping in time. The following summarizes the sequence of activities for the construction of the overhead transmission lines:

- Prepare material laydown sites (e.g., storage, staging and laydown areas) to support the construction effort (see Appendix C).
- Establish laydown area(s), typically including space for an office trailer, equipment storage and maintenance, sanitary facilities, and parking.
- Survey and stake the ROW boundaries (where necessary), vegetation clearing boundaries, and new structure locations.

- Mark the boundaries of previously delineated wetland and watercourse areas, including vernal pools.
- Identify other areas, as appropriate, where special construction considerations will apply (e.g., active farmlands, where the farmland protection measures will be implemented).
- Perform vegetation clearing.
- Install erosion and sedimentation controls.
- Construct new access roads or improve existing roads. Prepare level work pads as necessary at new structure sites and conductor pulling sites.
- Construct foundations and erect/assemble new structures.
- Install shield wires and conductors.
- Install structure grounding systems, including counterpoise (where needed).
- Remove existing shield wires, conductors, hardware, and steel bonnets.
- Remove temporary roads and construction debris and restore disturbed sites.
- Maintain temporary erosion and sediment controls until vegetation is re-established or disturbed areas are otherwise stabilized.

The project construction along the transmission line route will be overseen by personnel from UI or UI's Contractor. Supervisory personnel will be based in the field and will directly monitor construction activities, including adherence to engineering, safety, and environmental requirements. A UI Environmental Analyst will be assigned to oversee the environmental requirements during construction. Along with the UI Environmental Analyst, UI will have an Environmental Inspector ("EI").

3.4 CONSTRUCTION SUPPORT FACILITIES AND LAYDOWN AREAS

The Contractor will establish temporary areas for staging during the construction of the Project. The laydown areas typically will be used for staging the construction equipment, supplies, and materials used during the construction phase of the Project. They will also serve as the primary marshaling point for construction workers and thus will be used for vehicle parking. The Contractor normally would also have temporary office trailers within the laydown areas.

Should the need for additional support area(s) be identified during the course of construction, UI will submit Change Notice(s) to the CSC requesting approval of such areas prior to use.

3.5 VEGETATION CLEARING

Vegetation to be removed is depicted on the plan drawings (over 6" dbh) in Appendix C.

UI obtained rights for transmission lines, including the right to clear vegetation within the full-defined limits of the ROW, and, to the extent that rights exist, to remove any tree or portion of tree outside the ROW ("danger tree") that by falling could endanger the transmission line facilities. Such removal will provide for the safe and reliable operation and maintenance of any line that is built on the ROW.

Notwithstanding these rights, UI plans to minimize tree and other vegetation removal that is required for construction and operation of the line by utilizing low-impact tree clearing. This will include:

- Designing the Project to keep the position of the conductors within the existing cleared ROW corridor as much as possible, thus minimizing additional clearing.
- Complying with UI's Baird Congress Invasive Species Management Plan ("ISMP"), see Appendix N.
- Allowing low-maturing tree species such as dogwoods to remain within 15 feet of the outer edges of clearing (where these low-maturing species exist).
- Employing directional tree felling – both hand felling and mechanical felling,
- Preparing a land clearing contract that includes specifications for access, wetland/stream crossings, vegetation removal, rare species protection, cultural resource protection, and residual site quality,
- When cutting trees close to the ground, stumps and root systems will be left in the ground to naturally decompose over time. These decaying root systems provide additional soil stability as well as hosting native organisms,
- Re-establishing pre-existing access roads for construction vehicles (to minimize the clearing of low growth within the existing corridor),
- Maximizing the use of upland portions of the existing, maintained ROW for work areas and for access,
- Locating new structures close to existing structures, overlapping the work areas (to reduce the amount of disturbance for the new structure work areas),
- Determining individual "danger trees" for removal considering the species, soil conditions including wetland vs. upland, susceptibility to flooding, depth to rock (and adaptability of the species to those conditions), health of the tree and inclination of trunk, shape of crown.

3.5.1 *GENERAL REQUIREMENTS*

Edges of existing cleared areas are shown on the drawings in Appendix C.

3.5.2 *TIMBER DISPOSITION AND PILES*

- Any timber deemed to be usable at a later date shall be stock piled a minimum of 100 feet away from the edge of any wetland or watercourse.
- No timber shall be stacked in drainage ways or left within wetland boundaries.
- Trees of less than 4 inches in diameter are to be considered non-useable.

3.5.3 *CLEARING IN WETLANDS*

Any clearing in areas regulated under Section 404 of the Clean Water Act and/or Connecticut's Inland Wetland and Watercourse Act is outlined below.

- Trees and brush will be cut at ground level by hydroaxes, tree shears, grinders or chain saws.
- Stumps will be left in place unless the removal is necessary to ensure worker safety. Stumps may be ground to a suitable height for safety reasons.
- Clearing adjacent to watercourses will occur up to the high water mark.
- All vegetation, except for invasive species, removed from the corridor will be disposed of.
- When clearing in wetlands or around watercourses UI and/or its Contractor shall comply with the preventative measures outlined in Section 1.3.1 in the ISMP.

3.5.4 *BRUSH DISPOSAL*

Trees and brush shall be disposed of in one or more of the following ways depending on applicable permit conditions, and/or as designated by the EI.

- Brush Piles
 - Brush will be piled at the edge of the ROW to provide additional runoff protection or additional wildlife habitat.
 - All brush will be removed from wetland areas.
- Chipping
 - Chips will not be left in wetlands or agricultural lands or stockpiled in such a location that they may be transported into a wetland or agricultural land.

- Off Site Disposal
 - Offsite disposal of removed trees and brush will be used when brush piles or chipping are not permitted.
 - Disposal facility must be an approved location

All invasive species will be disposed of in accordance with UI's methods outlined in its ISMP.

3.6 ACCESS ROADS AND WORK PADS

During construction, existing access roads within the ROW will typically be used as the principal means of accessing the work area. Access roads (for maintenance and for ingress/egress to existing transmission structures) already exist along portions of the existing overhead line ROWs. However, in selected locations along CDOT's ROW, new access roads will be created in order to reach new pole locations and remove/replace existing structures.

For new pole locations, permanent access roads are required for construction and ongoing maintenance. Some existing access roads will require maintenance or upgrades (e.g. widened, filled, or graded) to allow safe passage of the necessary equipment to install the new structures. UI intends for the width of temporary and existing access roads in upland areas to range from 12 to 16 feet. The locations of access roads which UI is proposing to use during construction are illustrated in the Plan Drawings in Appendix C. All temporary access roads will be removed at the end of the project.

Work pads will be required at each transmission line structure site, as well as at conductor and optical groundwire (OPGW) pulling sites. Work pads will be used to stage structure components for final on-site assembly, provide a safe, level base for the construction equipment used to install foundations and to erect the structure(s). UI will have two different sizes of work pads, 1) a **construction pad that will average approximately 30 feet by 50 feet** and 2) a **pull pad which will average approximately 25 feet by 100 feet**. These locations are depicted on the Plan Drawings in Appendix C. All work pad locations will be removed at the end of the project.

Any excess spoils generated from the construction of access roads and work pads will be managed in accordance with UI's Baird-Congress Soil & Groundwater Management Plan (Appendix H). Additionally, any rock generated from the development of access roads or work pads will be removed offsite.

Prior to the construction of both access roads and work pads UI will install sediment and erosion controls in order to mitigate any erosion or sediment runoff. The areas where erosion and sediment controls will be installed can be viewed in Appendix G, Baird-Congress Stormwater Pollution Control Plan (SWPCP).

3.7 WORKING IN AND AROUND SENSATIVE AREAS

3.7.1 *WETLANDS, WATERCOURSES AND VERNAL POOLS*

Along the project corridor there are segments where access across an upland area does not exist due to either wetlands or a watercourse (Appendix C). Therefore, either construction or timber matting will be used to provide temporary access and a work pad for both the removal and installation of the transmission structures. In addition to the construction or timber matting UI intends to provide additional protection to sensitive areas by the installation of erosion and sediment controls. The installation of these controls will provide the necessary measures to mitigate any primary or secondary impacts to sensitive areas. The erosion and sediment controls that will be used can be viewed in the Appendix G - UI's SWPCP.

3.7.2 *ENDANGERED, THREATENED AND SPEACIAL CONCERN SPECIES*

Based on correspondence received from the State of Connecticut Department of Energy and Environmental Protection Wildlife Division on April 22, 2016 there are no known listed species within the project area (Appendix I).

3.8 CONSTRUCTION METHODS

This portion of the Plan provides information on construction methods associated with the electric transmission line facilities. This includes the narrative that follows as well as associated Plan Drawings in Appendix C. The Project will be completed in accordance with good engineering practice, USACE's Category II permit (Appendix E), OLISP's Certificate of Permission (Appendix F), UI's Baird Congress SWPCP (Appendix G), *2002 Connecticut Guidelines for Soil Erosion and Sediment Guidelines*, Occupational Safety and Health Administration (OSHA) standards and will be in conformance with the conditions and stipulations of the CSC ruling and other permits and approvals.

The Project ROW traverses developed land including recreational, residential and commercial/industrial areas, as well as tidal and inland wetlands and watercourses. The construction methods described herein are designed to avoid substantial adverse environmental effects. Wetland and watercourse boundaries were delineated and marked along the entire Project corridor for identification and protection during construction. Site-specific plans detailing the locations of the identified wetland and watercourses areas, as well as the placement of sediment and erosion controls are provided in Appendix C and G.

3.8.1 *PRE-CONSTRUCTION PROCEDURES*

Prior to construction, the monumented line of corridor, ROW boundaries and future structure locations will be surveyed and staked. In addition both wetland and watercourse boundaries, along with any other sensitive environmental resource areas will be surveyed and marked so construction activities can do their best to avoid these areas. Refer to Section 5.0 and the drawings and details in Appendix C.

3.8.2 *INSTALLATION OF EROSION AND SEDIMENT CONTROLS*

All sediment and erosion control barriers will be installed prior to initial disturbance of soil and maintained throughout construction. During the Project UI will be required to maintain these controls confirming that everything has been done to reduce the migration of erosion and sediment offsite. The following outlines the inspection criteria for the sediment and erosion controls:

Inspections and Reporting

- UI/EI will conduct a plan implementation inspection of the project sites at least once and no more than three times during the first 90 days to confirm compliance with the General Permit and proper initial implementation of all controls measures designated in the Plan for the site for the initial phase of construction.
- UI/EI will inspect the construction sites at least once every seven calendar days for compliance with the SWPCP.
- UI/EI will inspect the construction sites in an immediate fashion after a qualifying storm which produces 0.5 inches or greater within a 24 hour period. It should be noted that for storms that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours but the following working day.
- When the construction sites have been finally stabilized, inspections shall be conducted at least once every month for three months to confirm compliance with the General Permit.
- Inspections reports will be included in the bi-weekly submissions to the CSC.

1. Stormwater Turbidity Monitoring and Reporting

- Sampling shall occur on a monthly basis, during storm events that generate a discharge of stormwater from the site while construction activity is ongoing and until final stabilization of the drainage areas associated with each outfall is

achieved. Outfall locations can be seen in Appendix G. If there is no formal outfall then sampling will be conducted at identified areas of concentrated runoff.

- Sampling shall continue on a monthly basis until final stabilization of the drainage area associated with each outfall is achieved.
- When applicable, the net DMR's forms for the turbidity monitoring will be provided to the CSC.

Erosion and sediment controls installed during construction will remain in place until that location has been restored, stabilized and signed off on by both UI/EI. During the restoration and stabilization of the work area, unless otherwise specified by the property, all controls will be removed. Any sediment deposits generated from construction activities will be removed at the time of observation or during the removal of the sediment and erosion controls. The excess sediment will be managed in accordance with UI's Soil & Groundwater Management Plan (Appendix H).

3.8.3 *DUST CONTROL*

Due to the nature of construction, certain operations may cause fugitive dust emissions. The extent of the dust will be based on either the type of construction activity and/or the weather conditions. Should dust emissions become an issue to the construction activities, pedestrians, abutting properties or motorists, UI will apply a dust suppressant at that time.

3.8.4 *NOISE CONTROL*

UI will comply with both The Town of Stratford and The City of Bridgeport's noise ordinances. UI will abide by the documents titled "TOWN OF STRATFORD NOICE CONTROL ORDINANCE (date approved July 28, 1981)" and "CITY OF BRIDGEPORT – AN ORDINANCE PROVIDING FOR THE REDUCTION AND ELIMINATION OF NOISE By ESTABLISHING MAXIMUM NOISE LEVELS UPON AND BETWEEN PREMISES, OFFENSES AND PENALTIES IN THE CITY OF BRIDGEPORT, CONN (date approved September 15, 1984)". UI will also comply with the general guidelines outlined by the Connecticut General Statutes Section 22a-69.1 through 22a-69.7. Any noise generated will be directly from construction activities. No permanent noise increase will result upon completion of the Project.

3.8.5 *SOIL AND GROUNDWATER MANAGEMENT*

Between December 2013 and January 2014 UI performed a pre-characterized event evaluating both the soil and groundwater conditions within the project footprint. The focus of this event was to determine how the spoils and groundwater will need to be managed in order to comply with the applicable State and Federal guidelines. Based on the outcome of the lab report UI developed a

project specific soil and groundwater management plan outlining the handling of the waste at each of the foundation locations. UI's Soil & Groundwater Management Plan can be viewed in Appendix H.

3.8.6 *SNOW AND ICE REMOVAL*

The removal of snow and ice from construction sites is critical to maintain a safe work environment. Snow and ice removal procedures shall be conducted in accordance with CT DEEP's Best Management Practices for Disposal of Snow Accumulations from Roadways and Parking Lots (Appendix J).

3.8.7 *CONSTRUCTION METHODS FOR 115-KV OVERHEAD LINES*

The general construction methods for the 115-kV overhead lines are as follows:

3.8.7.1 *Steel Pole and Concrete Foundation Installation Sequence*

- Foundation locations will be staked.
- Auger drilling will be used to perform the excavation for pier foundations. The size of the excavation will be six feet in diameter and vary from 12 to 28 feet deep. Temporary casings may be used in locations where the soil will not stand without support or where, because of ground water conditions, sloughing of the sides of piers may seriously delay or endanger the satisfactory completion of excavation and placement of concrete. The temporary casing will be removed from piers as concrete is placed or soon thereafter.
- Once the excavation is complete, steel reinforcing bars and anchor bolt cage will be placed in the excavation encased in concrete. The concrete will be conveyed from the mixer to the place of the final deposit by methods that will prevent the separation or loss of material.
- Field tests of concrete being placed will be conducted regularly. In general, as an indication of other physical properties the quality of the concrete being produced will be judged by the compressive strength developed within a given period.
- Once a foundation is in place and cured, the steel structure will be assembled and erected. Structures will not be erected on the concrete piers for a minimum of seven calendar days after the concrete has been poured and the compressive strength of the concrete has reached 3,000 psi.
- The structures may be assembled on the ground and erected as a complete unit or assembled in pieces with a crane.

- Once the structure is erected and framed with the support insulators and hardware, it will be ready for installation of the overhead lines.

3.8.7.2 *Conductor and Shield Wire Installation*

The wires will be pulled over rollers or sheaves mounted on the line structures using pulling and tensioning equipment. This equipment will typically consist of a reel trailer with a tensioner and puller located at dead ends or as needed.

The wires will be sagged, clipped in, spliced, dead ended and jumpered.

3.8.7.3 *Substations*

The Baird to Congress line conductor is being replaced with a larger conductor up to the line disconnect switch. Relay setting changes will be needed for the lines between Baird and Congress substations. In addition, for both lines, the existing static wire is being replaced with optical ground wire.

Without exception, all work will occur within the existing fenced portions of each substation, there will be no substantial adverse environmental effects from such work, and as these are one-for-one equipment replacements (or minor modifications), the height of the new equipment will not exceed the height of the highest piece of existing equipment in the applicable substation.

The specific work is outlined as follows:

A. Baird Substation

- Install two outdoor fiber optic (FO) splice enclosures within substation fence.
- Excavate and install below grade PVC conduits from FO splice enclosures to control room.
- Install two FO patch panels inside control room.

B. Congress Substation

- Excavate and install below grade PVC conduits from FO splice enclosures to control room.
- Install two FO patch panels inside control room.
- Install two outdoor FO splice enclosures within substation fence

3.9 FINAL RESTORATION

3.9.1 *RESTORATION REQUIREMENTS*

ROW cleanup and restoration activities will include the removal of construction debris, temporary access roads, and temporary work pads, followed by final re-grading of areas affected by construction and site stabilization using methods outlined in UI's SWPCP.

Any construction or timber mats used for temporary access roads or work pad construction will be cleaned of any nuisance or invasive vegetation prior to being removed from the ROW as outline in UI's ISMP.

After final grading, upland areas affected by construction will be seeded with either a contractor's or upland rye seed mix. In addition to the areas where seeding has taken place UI will spread a layer of mulch cover providing the means for stabilization. In areas where the spreading of mulch is not applicable UI will install more progressive methods such as erosion control blankets or sod. These methods will provide a more effective immediate stabilization means to the impacted areas until the natural vegetative communities can recolonize. In other locations where a more long term solution for stabilization is needed, UI will use such methods as water diversion bars, crushed stone swales, or diversionary drainage paths into upland areas allowing the cultivating of the seed and vegetation to take place in order to achieve stabilization.

Wetland areas affected by construction will be restored using a New England Wetland Seed Mix, along with straw (contains no invasive species) which will serve to as a temporary vegetative cover until wetland species become reestablished. No upland rye seed, fertilizer, lime, or hay mulch will be applied. A major concern regarding successful restoration of wetlands is growth of invasive plant species. Based on UI's restoration approach within wetlands by the use of the NE Wetland Seed Mix with a thin layer of straw UI anticipates that this method will impede the colonization of any invasive species and provide a stable environment for more dominant wetland plant species.

In addition to the seeding the sediment and erosion controls will be left in place and maintained until final stabilization is achieved. Once the restoration conditions outlined in either the property owner license agreements specific conditions or in the SWPCP have been met UI will remove all sediment and erosion controls.

Vegetative species compatible with the use of the ROWs for transmission line purposes are expected to regenerate naturally over time. UI will promote the re-growth of compatible species by implementing vegetation management practices to control tall-growing trees, and where practicable, undesirable invasive species, thereby enabling native plants to dominate the ROWs. Vegetation management practices along the ROWs also will conform to Project-specific ISMP

regarding habitat restoration and enhancement as may be included in approvals from the CSC, CT DEEP, and USACE.

3.9.1.1 *Clean-up*

UI shall make every effort to complete final cleanup of an area (including final grading and installation of more long term sediment and erosion control measures) after completing work within that area. All construction debris will be removed following the completion of construction activities. If this schedule cannot be met, final cleanup must be completed as soon as possible.

3.9.1.2 *Over Winter Site Stabilization*

In the event that the final phases of construction occur too late in the year for cleanup activities to proceed, the following procedures will be implemented along the disturbed ROW at those locations until final restoration measures can be completed:

- Install permanent interceptor dikes, water bars, diversionary swales, etc., at specified intervals on all slopes.
- Install and maintain temporary sediment barriers adjacent to stream and wetland crossings, as well as other critical areas.
- Seed upland work areas with winter rye (Aroostock or Balbo variety) or similar variety.
- Mulch non-paved work areas at 2.5 tons per acre with wheat straw, including areas adjacent to stream and wetland crossings.
- Seed segregated topsoil piles with annual ryegrass.

3.9.2 *RESIDENTIAL*

Every effort will be made to ensure that construction activities minimize impacts to residences and that cleanup is timely and thorough. UI will strive to accommodate special concerns regarding ornamental shrubs, trees, or structures by avoidance if such avoidance will not unduly interfere with construction and operation of the facilities. Measures will be taken to ensure that construction activities will not prevent emergency vehicles access to residential areas. Topsoil in landscaped lawns will either be segregated or topsoil will be imported. After backfilling, residential areas will be restored and all construction debris will be removed. Lawns will be raked, topsoil added as necessary and restored to pre-construction conditions. Fences, mailboxes, and other structures that have been removed will be restored. Sidewalks and driveways will be restored as soon as practical.

3.10 COMMISSIONING

Commissioning of the newly installed facilities will be performed according to standard UI procedures.

4.0 CONSTRUCTION SCHEDULE

4.1 CONSTRUCTION SCHEDULE

Project construction is scheduled to begin in August 2016 and end in March 2019.

Although the transmission lines and ancillary facilities will be constructed to meet this in-service date, full restoration of the disturbed areas (e.g., temporary access roads, laydown areas) may require additional time due to the completion of construction outside of the 2018 growing season. Such work (e.g., final site stabilization, reseeding) may be performed, as necessary, during the 2019 growing season, and thereafter as may be required to complete the restoration program. In addition, following the installation of the facilities, UI will monitor the route and will implement restoration and stabilization measures as appropriate. Overall, the construction of the Project is expected to require approximately 34 months, exclusive of the final restoration work that will be performed in the spring and/or summer of 2019.

Although electric transmission line construction typically will proceed in a linear fashion, UI anticipates that multiple construction crews will be working concurrently on different segments of the Project. For example, the structure replacement will be completed using a dedicated crew (or subcontractor) that specializes in overhead construction within existing ROW. While the construction is proceeding, work on other aspects of the line will be conducted concurrently.

4.2 WORK HOURS

Construction work hours will typically occur between 7:00 AM and 7:00 PM, five days per week (Monday through Friday), and sometimes require work on Saturdays and Sundays. Some construction activities will take place at night between 10:00 PM and 5:00 AM, Monday through Sunday. Construction workers may arrive for work and leave work outside of these times.

However, certain activities, such as those that must be performed during outages, may involve work during non-typical hours, in some cases on a continuous (24-hour) basis. The performance of these activities during non-typical work hours can be critical for completing the required work within the allowed outage durations.

4.3 SPECIAL CONSTRUCTION TIMING WINDOWS

Special timing windows have been established for certain activities associated with the construction of the Project. These special timing windows are described in Section 3.7.

5.0 SPECIALIZED CONSTRUCTION PROCEDURES AND PLANS

5.1 HIGHWAY AND UTILITY CROSSINGS

The majority of the Project will be located within the existing CTDOT ROW and will cross a eleven local roadways. Prior to construction over these roadway corridors, UI will notify and, as necessary, coordinate with the representatives of ConnDOT, the affected utilities and municipal highway departments to identify any utility lines to be crossed by the proposed facilities.

Notification will be given to affected highway departments and utilities before construction over the road or utilities.

5.2 CULTURAL RESOURCE PROTECTION PROCEDURES

5.2.1 *CULTURAL RESOURCE SURVEYS*

Based on a review of the project area, along with documentation from the Connecticut State Historic Preservation Officer received on March 13, 2015, no historical properties will be affected by the Baird Congress T-Line Project. See Appendix J.

5.2.2 *UNANTICIPATED DISCOVERIES PLAN*

In the event undocumented cultural resources are encountered during construction, the construction Contractor will stop all work in the immediate area and notify an EI. The EI will contact the appropriate party to perform the required investigation/evaluation. While the matter is being resolved with the appropriate agencies, the EI will isolate the area and instruct the Contractor that construction is not permitted in the immediate area of the find. Construction outside the immediate area of the find may continue.

6.0 ENVIRONMENTAL INSPECTION

6.1 UI'S ENVIRONMENTAL COMPLIANCE PROGRAM

The transmission line construction contractor(s) will be obligated to comply with all applicable State and Federal environmental requirements, as well as conditions outlined in UI's USACE CAT II Permit, OLISP's COP, CT DEEP General Permit DEEP-WPED-GP-015, and this D&M Plan. To verify compliance with this D&M Plan and the environmental requirements outlined in Appendices E through N, UI will perform a required Baird-Congress Environmental Orientation Training for all contractors working on the Project. In addition a UI Environmental Analyst has been assigned to oversee the execution of the Project. Along with the UI Environmental Analyst, UI will have an EI monitoring the following:

- 1) Adherence to USACE permit conditions,
- 2) Compliance with UI's ISMP
- 3) Adherence to OLISP COP conditions,
- 4) Compliance with CT DEEP General Permit DEEP-WPED-GP-015
- 5) Installation of erosion and sediment controls,
- 6) Maintenance of sediment and erosion controls,
- 7) Endangered, threatened and special concern species,
- 8) Management of soil and groundwater,

7.0 NOTICES AND REPORTS

7.1 NOTICES TO THE CSC: START AND COMPLETION OF CONSTRUCTION

UI will provide written notification to the CSC a minimum of two weeks in advance of each of the following:

- The commencement of vegetation clearing along the transmission line,
- The commencement of transmission line construction.
- The completion of transmission line construction (including site restoration/ rehabilitation).

UI will provide written notification to seek approval from the CSC regarding the location and size of all areas to be accessed or used for staging and not otherwise included in this D&M Plan.

A final report for the Project work will be provided to the CSC not later than 180 days after completion of all construction and rehabilitation work.

7.2 PROPOSED REVISIONS TO THE D&M PLAN

7.2.1 D&M PLAN CHANGES REQUIRING NOTICE TO THE CSC

Pursuant to RCSA Section 16-50j-62(b)(2), the CSC must pre-approve any significant changes to this D&M Plan. UI will identify, track, and submit all significant changes. *No significant changes to this D&M Plan will be implemented without such documented approvals.*

UI will provide the CSC with advance written notice whenever a significant change of the approved D&M Plan is necessary. If advance written notice is impractical, UI will provide immediate verbal notice to the CSC, followed by written notice no later than 48 hours after the verbal notice.

CSA Section 16-50j-62(b)(2) defines a “significant” change to the approved D&M Plan as including, but not limited to:

- The location of a wetland or watercourse crossing;
- The location of an access way or structure in a regulated wetland or watercourse area;
- The construction or placement of any temporary structures or equipment;

- A change in structure type, or location including, but not limited to, towers, guy wires, associated equipment or other facility structures; or
- Use of additional mitigation measures or elimination of mitigation measures.

In addition to the above criteria, UI proposes to define a “significant” Project change as one that would substantially reduce the amount of protection to the environment, substantially increase potential public concern, or would otherwise potentially result in a meaningful effect on the environment, the public, or other Project permits and approvals.

8.0 COMMUNITY OUTREACH

8.1 COMMUNITY OUTREACH PRIOR TO CONSTRUCTION

UI will provide notice to the property owners of record prior to construction. UI is in the process of consulting with the Chief Elected Officials (CEOs), or their designee, in the Town of Stratford and the City of Bridgeport. UI is providing a courtesy copy of the D&M Plan to officials of Stratford and Bridgeport. There are no parties to CSC's proceeding regarding the Project (CSC Petition No. 1176) other than UI as petitioner.