The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 11-51 February 27, 2012

Petition of NSTAR Electric Company and New England Power Company, d/b/a National Grid, pursuant to G.L. c. 164, § 72, for approval to construct and operate a 115 kV underground transmission line in the cities of Boston and Everett

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I. INTRODUCTION

A. Project Description

On July 5, 2011, the Petitioners, NSTAR Electric Company ("NSTAR") and New England Power Company, d/b/a National Grid ("NEP") (together, the "Companies"), filed a petition with the Department of Public Utilities ("Department") pursuant to G.L. c. 164, § 72, ("Section 72 Petition" or "Petition") seeking expedited approval to add a second cable to supplement the existing 0.5-mile underground section of 115 kV transmission line that runs from NSTAR's Mystic Substation No. 250 ("Mystic Substation") in Boston, Massachusetts to NEP's Riser Structure No. 24 ("Riser Structure") located in Everett, Massachusetts (the "Project"). The 0.5-mile underground section is part of the existing 2.0-mile O-167/423-515 transmission line[1] ("Existing Transmission Line" or "O-167 line") originally placed in service in 1964. The O-167 line also includes an overhead transmission portion that runs approximately 1.5 miles from the Riser Structure to NEP's Everett No. 37 Substation in Everett, Massachusetts (Exh. NSTAR/NEP-1, at 3). The matter was docketed as D.P.U. 11-51.

NSTAR owns the portion of the Existing Transmission Line located in Boston (all of which is located underground), and NEP owns the portion located in Everett (some of which is located underground and some of which is above ground) (Exh. NSTAR/NEP-CF-1, at 4). NSTAR is responsible for the operation and maintenance of the entire 0.5-mile underground portion of the Existing Transmission Line (Exh. NSTAR/NEP-CF-9, at 2, n. 2). The

[1] The O-167 designation derives from NEP (Exh. NSTAR/NEP-1, at 3). The 423-515 designation derives from NSTAR (Tr. at 78). Both designations denote the same transmission line and facilities, and we rely on the O-167 designation to describe the entire Existing Transmission Line.

Companies either own the Project's right-of-way ("ROW") and/or have already secured easements necessary for the Project.

The Project's primary focus is the installation of a new High Pressure Fluid Filled ("HPFF") pipe-type cable ("Supplemental Cable"), which would be laid in a newly-dug trench and which would run parallel to, and in proximity with, the Existing Transmission Line. The Supplemental Cable would be installed in a manner that would not interfere with existing utilities (Tr. at 28-29). The Supplemental Cable would be electrically connected to the Existing Transmission Line at the Mystic Substation in Boston and at the Riser Structure in Everett. The Supplemental Cable would be approximately 2,800 feet long and would be operated at 115 kilovolts ("kV"). The Supplemental Cable would consist of three 2,250 circular mil ("kcmil") insulated copper conductors installed in a nominal eight-inch diameter steel pipe (Exh. NSTAR/NEP-1, at 2). The pipe would be filled with a pressurized dielectric fluid, which serves as part of the cable insulation (Exh. NSTAR/NEP-CF-1, at 5).

The Supplemental Cable would exit the Mystic Substation below ground, cross the sidewalk on the east (Everett-bound) side of Alford Street, cross four travel lanes of Alford Street and follow the paved shoulder of the west (Boston-bound) side of Alford Street. Then, it would travel beneath the center of Horizon Way and then cross private easements to the Riser Structure adjacent to an MBTA bus parking lot where it would come above ground for its connection to the Existing Transmission Line (Exhs. DPU-LU-4; NSTAR/NEP-SD-1, at 6).[2]

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[2] The section of the Supplemental Cable laid beneath Alford Street would be approximately 1,400 feet long (Exh. NSTAR/NEP-CF-1, at 12). The length along the road alignment of Horizon Way/Chemical Lane would be approximately 500 feet

The Project includes the installation of the Supplemental Cable, as well as upgrades to the Mystic Substation, modifications to the Riser Structure, and operation of the upgraded O-167 line (Exhs. NSTAR/NEP-SD-1, at 7-8; NSTAR/NEP-1, at 7). In addition, the Project includes installation of related relay and control cables necessary for the protection of the Existing Transmission Line and the Supplemental Cable (Exh. NSTAR/NEP-CF-1, at 5). These relay and control cables would be encased within two nominal 4-inch diameter polyvinyl chloride ("PVC") conduits installed in the same trench with the Supplemental Cable (id.).

NEP also plans to upgrade its overhead transmission portion of the O-167 line (id. at 4). NEP will replace the existing conductor with an upgraded conductor that will allow for additional capacity but will be the same size and voltage (Exh. NSTAR/NEP-CF-9, at 6). NEP plans to reuse the existing support structures, with minor reinforcement of lattice towers (id.). NEP stated that the overhead portion needs additional capacity to address reliability problems identified in the Merrimack Valley/North Shore Transmission Reliability Study ("MV/NS Study"), which NEP commissioned (Exhs. NSTAR/NEP-JWM-1, at 7-9; NSTAR/NEP-JWM-2).

The Companies asserted that the upgrade to NEP's overhead transmission portion constitutes the replacement of the conductors on the overhead portion of the line with no change in voltage and without substantial alteration to the existing structures supporting those conductors (NSTAR/NEP-1, at 3). Therefore, they asserted that these activities do not require

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(Exh. NSTAR/NEP-CF-5 (rev.). The route continues approximately 600 feet on a private easement to NEP's Riser Structure (id.). The route also includes approximately 300 feet from the Mystic Substation to Alford Street (id.).

approval under G.L. c. 164, § 72 (id.). Consequently, the Companies filed a petition seeking Section 72 approval solely for the underground portion of the Existing Transmission Line (id.).

The Department has long held that the simple replacement of the conductors of a transmission line is not a substantial change to the line and therefore does not require approval under Section 72. See Boston Edison v. Sudbury, 356 Mass. 406, 416-417 (1969). Thus, we agree that the reconductoring of the overhead portion of the line does not require Section 72 approval.

B. Procedural History

In support of the Petition, the Companies presented the prefiled testimony of the following witnesses: (1) Christopher Fultz, Project Manager, Black & Veatch Corporation, on behalf of NEP, concerning costs, schedule and outreach activities; (2) Swapan Dey, Director of Substation and Transmission Line Engineering, NSTAR, regarding design and construction; (3) John W. Martin, Principal Engineer, National Grid, concerning need and alternatives; (4) Kevin McCune, Senior Environmental Engineer, NSTAR, regarding environmental impacts and permitting; and (5) Peter A. Valberg, Principal, Gradient Corporation, addressing electric and magnetic field ("EMF") impacts.

The Department conducted a site visit on August 25, 2011, and, pursuant to a Notice of Filing and Public Hearing, conducted a public hearing on August 25, 2011. On August 31, 2011, Constellation Energy Commodities Group, Inc. and Constellation NewEnergy, Inc. (together, "Constellation") filed a motion to intervene, which the Companies opposed. Constellation owns the rights to power generated at the Mystic 9 Generating Facility (Mystic Unit 9), and an affiliated entity owns the Mystic Unit 9 itself (Constellation Answer in Support of Petition to Intervene at 3, 4). Mystic Unit 9 interconnects to the grid at the Mystic

Substation, and some of the outages required to construct the Project would prevent Constellation from delivering power from the steam generator of Mystic Unit 9 to the grid. On October 4, 2011, the Department granted intervenor status to Constellation on the grounds that Constellation would be substantially and specifically affected by the Project.

On December 5, 2011, the Department conducted an evidentiary hearing. The evidentiary record consists of 122 exhibits including the Companies' petition and responses to information requests and record requests. On December 27, 2011, the Companies submitted their initial joint brief. Constellation did not submit an initial brief, and there were no reply briefs.

II. STANDARD OF REVIEW

G.L. c. 164, § 72, requires, in relevant part, that an electric company or other entity seeking approval to construct a transmission line must file with the Department a petition for:

> authority to construct and use ... a line for the transmission of electricity for distribution in some definite area or for supplying electricity to itself or to another electric company or to a municipal lighting plant for distribution and sale ... and shall represent that such line will or does serve the public convenience and is consistent with the public interest .... The [D]epartment, after notice and a public hearing in one or more of the towns affected, may determine that said line is necessary for the purpose alleged, and will serve the public convenience and is consistent with the public interest.[3]

The Department, in making a determination under G.L. c. 164, § 72, considers all aspects of the public interest. Boston Edison Company, 356 Mass. at 419. Section 72, for example, permits the Department to prescribe reasonable conditions for the protection of the

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[3] Pursuant to G.L. c. 164, § 72, the electric company must file with its petition a general description of the transmission line, a map or plan showing its general location, an estimate showing in reasonable detail the cost of the line, and such additional maps and information the Department requires. The Department finds that the Company complied with these requirements.

public safety. Id. at 419-420. All factors affecting any phase of the public interest and public convenience must be weighed fairly by the Department in a determination under G.L. c. 164, § 72. Town of Sudbury v. Department of Public Utilities, 343 Mass. 428, 430 (1962).

In evaluating petitions filed under G.L. c. 164, § 72, the Department examines: (1) the need for, or public benefits of, the present or proposed use (see Massachusetts Electric Company, D.P.U. 93-29/30, at 10-14, 22-23 (1995); New England Power Company, D.P.U. 92-278/279/280, at 19-22 (1994) ("NEPCo, D.P.U. 92-278/279/280"); Tennessee Gas Pipeline Company, D.P.U. 85-207, at 6-9 (1986) ("Tennessee")); (2) the environmental impacts or any other impacts of the present or proposed use (see NEPCo, D.P.U. 92-278/279/280, at 20-23; New England Power Company, D.P.U. 92-270, at 17-20 (1994) ("NEPCo, D.P.U. 92-270"); Tennessee, at 20-25); and (3) the present or proposed use and any alternatives identified (see NEPCo, D.P.U. 92-278/279/280, at 19; NEPCo, D.P.U. 92-270, at 17; Tennessee at 18-20). The Department then balances the interests of the general public against the local interests and determines whether the line is necessary for the purpose alleged and will serve the public convenience and is consistent with the public interest.

III. DESCRIPTION, ANALYSIS AND FINDINGS

A. Need for or Public Benefit of Use

1. Description of Existing System

The 115 kV O-167 line begins at NSTAR's Mystic Substation in Boston and terminates at Everett Substation (Exh. NSTAR/NEP-JWM-1, at 4-5). From Mystic Substation to the Riser Structure in Everett, the line is a three-phase HPFF pipe type underground cable (id.). North of the Riser Structure, the line is an overhead circuit. At the Everett Substation, the O-167 line serves three transformers supplying power to distribution facilities of Massachusetts

Electric Company ("Mass Electric"), and connects to another 115 kV line, line F-158S (id. at 5). Line F-158S directly serves two more transformers supplying power to Mass Electric distribution facilities, and terminates at NEP's Maplewood Substation in Malden, which serves a transformer supplying power to Mass Electric distribution facilities (id.). Beyond the Maplewood Substation, another 115 kV line, line F-158N, supplies Mass Electric distribution facilities and the Wakefield Municipal Gas and Light Department from three more substations (id.). Line F-158N connects to additional sources to the north, which ultimately connect to the 345 kV system.

2. Relevant Planning Standards

The Companies are required to maintain and operate the transmission system in accordance with reliability and planning standards and criteria established by the North American Electric Reliability Corporation ("NERC"), the Northeast Power Coordinating Council ("NPCC"), and the Independent System Operator – New England ("ISO-NE") (Exh. NSTAR/NEP-JWM-1, at 6). These criteria require the Companies to maintain system equipment within specific thermal and voltage criteria, under both normal conditions and under certain contingencies.

3. Thermal Overload Issues

In 2006, NEP studied its transmission system in the Merrimack Valley and North Shore regions and produced the MV/NS Study. The MV/NS Study identified several reliability issues for the studied region, including thermal overload problems on the O-167 line (Exh. NSTAR/NEP-JWM-1, at 8-9). The O-167 line has a Long-Term Emergency ("LTE") rating of 189 megavolt-amperes ("MVA") (id. at 10; Exh. DPU-N-2). Certain N-1 contingencies can interrupt or reduce the northern supplies to Maplewood and Everett

Substations.[4] The MV/NS Study identifies contingencies where the O-167 line would be the only line supplying the Everett and Maplewood Substations (Exh. NSTAR/NEP-JWM-1, at 9). During peak loads, following these N-1 contingencies, the combined load of those two substations would exceed the LTE rating of the conductors and the O-167 line would experience thermal overloads in the study years 2007 and 2012 (id.). These potential thermal overloads represent a violation of the applicable federal and regional planning standards, described above (id. at 6-7).

4. Analysis and Findings

The record shows that the Companies have identified that, under peak loads, given certain N-1 contingencies, the O-167 line could exceed its LTE rating, in violation of applicable national and local reliability standards (Exh. NSTAR/NEP-JWM-1, at 9). The Department recognizes that such a thermal overload could result in equipment damage and/or a local blackout.

Accordingly, the Department finds that there is a need for additional transmission to serve the Everett and Maplewood Substations to ensure reliable service to the customers served by those substations.

B. Alternatives Explored

In response to the thermal issue identified above, the MV/NS Study recommended reinforcement of the O-167 line (Exh. NSTAR/NEP-JWM-1, at 11-12). However, NEP determined that the existing underground configuration of the O-167 line would restrict the

[4] An N-1 transmission contingency is a circumstance in which there is an unexpected fault or loss of a single electric element. Transmission systems are generally designed to withstand any modeled N-1 contingency.

ability to reconductor the underground portion in such a way that the thermal issues would be addressed (id. at 12). As a result, NEP developed the proposed Project, which involves installation of a supplemental underground 115 kV cable, which will operate in parallel with the existing underground portion of the O-167 line, and allow the O-167 line to carry higher loads under normal as well as emergency conditions (id. at 12-13). The Companies also considered several conceptual solutions to the problem identified in the MV/NS Study. However, all but one of these solutions would fail to solve the thermal issue, and therefore only one additional alternative was evaluated as viable and considered along with the Project, as described below.

1. Project

The Project involves installing a 0.5 mile supplemental underground cable along the underground portion of the existing O-167 line (Exh. NSTAR/NEP-SD-1, at 4). This option would increase the LTE rating of the O-167 line by approximately 190 MVA (id. at 9). The Project would cost $7.5 million (Exh. NSTAR/NEP-CF-1, at 8).

The Project would have traffic impacts during construction along Alford Street for approximately half a mile. Construction noise would be prevalent along Alford Street, which is largely an industrial and commercial area. The Project would have no wetlands impacts and negligible visual and EMF impacts. The environmental impacts of the Project are discussed in further detail below, in Section III.C.

2. Alternative

The alternative project presented by the Companies ("Alternative Project") would involve the installation of a new two-mile underground 115 kV line spanning the entire distance between Mystic Substation and Everett Substation (Exh. NSTAR/NEP-SD-1, at 9).

The Alternative Project would increase the capability of the system supplying the region by approximately 190 MVA (id.). It would also involve work at Mystic Substation and cost approximately $17.1 million. The Companies indicated that no other alternative options were feasible or warranted additional review (Exh. NSTAR/NEP-JWM-1, at 13).

The Alternative Project would involve significant traffic impacts, as it would require excavation within roadways for over two miles (Exh. DPU-A-1, at 1). Construction of this alternative would also involve more significant noise impacts, as it would run beneath streets near neighborhoods and playgrounds (id. at 2). The Alternative Project would have no visual or wetland impacts, and the EMF impacts would be negligible (Exh. DPU-A-1).

3. Analysis and Findings

The record in this case supports the Companies' view that a limited range of feasible and practical project alternatives is available relating to the Project. The record also shows that while either the Project or the Alternative Project would meet the identified need, the Project would have less environmental impact and would also cost significantly less (Exhs. NSTAR/NEP-SD-1, at 9-10, DPU-A-1). Accordingly, the Department finds that the Companies have established that the Project would be preferable to the Alternative Project.

C. Impacts of the Project

In accordance with its responsibility to undertake a broad and balanced consideration of the general public interest and welfare, the Department examines the impacts associated with the Project to identify significant impacts that may occur during construction and operation.

1. Construction Methodology

The Project consists of modifications to the Mystic Substation and Riser Structure as well as installation of the Supplemental Cable. Project construction is currently scheduled to

occur between the spring of 2012 and the fall of 2012 subject to the outage availability of the O-167 line (Tr. at 27).

a. Modifications to the Mystic Substation and Riser Structure

The first phase of modifications to the Mystic Substation consists of installing the Supplemental Cable conduits, control conduits, foundations, and grounding devices (Exh. DPU-G-4). The first phase also includes installation of control and relay cabinets in the control room (id.). The second phase includes installing an extension of the gas insulated switchgear ("GIS") for terminating the Supplemental Cable and filling the closed pipe system with Pipe-Type Cable ("PTC") oil (id.).

The modifications at the Riser Structure will involve site grading, expanding the existing fence, installing a foundation for the cable termination pedestal, installing below-grade grounding and raceway, installing a cable termination structure, installing the Supplemental Cable conduits, and replacing a portion of the overhead conductor and fittings (id.).

b. Supplemental Cable

The Supplemental Cable will be installed beginning in the late summer of 2012, and installation will be completed in fall 2012 (Exh. NSTAR/NEP-CF-1, at 10). The reconductoring of NEP's 1.5-mile overhead line will occur in spring 2012 and must be completed prior to the configuration of a temporary three-terminal line arrangement with the O-167 and the P-168 lines (id.).[5] After the Supplemental Cable is installed, the temporary

[5] Line P-168 originates at the Mystic Substation and proceeds to the NSTAR Chelsea Substation (Exh. NSTAR/NEP-CF-1, at 10). The temporary connection between the O-167 and P-168 lines will reduce the possibility of an unplanned outage during the installation of the Supplemental Cable (id.).

connection between the O-167 and P-168 lines will be removed and the lines will be restored to their original configuration (id. at 10-11).

The estimated duration of the installation of the Supplemental Cable and sequencing include the following: (1) two weeks for the manhole construction; (2) eight weeks for the ductline construction; (3) one and a half weeks for cable pulling; and (4) three weeks for cable splicing, terminating, and filling the closed pipe system with PTC oil (id. at 11; Exh. DPU-G-13). The Companies stated that the selected contractor will arrange for off-site parking for workers' personal vehicles and use offsite facilities for primary laydown and staging areas (Exhs. DPU-G-6; DPU-G-7). Secondary laydown and staging locations include the areas near the Riser Structure as well as the Mystic Substation site (Exh. DPU-G-7).

Several transmission line outages would be required to execute the Project, subject to ISO-NE rules concerning system reliability and market efficiency (Exhs. DPU-G-10, DPU-G-15(1)).[6] The outages would be on lines that are part of the interconnected transmission system (Exh. DPU-G-10). The Everett and Maplewood Substations are connected to multiple transmission lines (id.). As a result, no customer outages are required for the Project (id.). The Companies indicated that they will attempt to schedule construction for the Project to overlap with the reconductoring of the overhead portion of the line to minimize the number of required outages (Exh. DPU-G-10). The Companies' proposed outages are listed in Table 1 below:

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[6] ISO Operating Procedure No. 3 describes the process and objectives for coordination and approval of outages; ISO-NE retains the ultimate authority to schedule outages (Exh. DPU-G-15(1)).

Table 1: Transmission Line Outages

NEP Transmission Line Nos.	Purpose of Outage	Duration (Days)
O-167	To expand the Mystic Substation GIS and modify the existing cable connections at the Riser Structure to prepare for Supplemental Cable pulling activities.	5
O-167 P-168	To construct a temporary three-line terminal operation.	4
O-167	May be required depending on final Project sequencing to pull the Supplemental Cable from the Riser Structure to the manhole on Horizon Way.	2-3
O-167 P-168	To remove the three-terminal configuration.	4
O-167	In addition to the four day outage to remove the three-terminal configuration listed above, the outage on the O-167 line will continue for an additional three days to allow for final testing and re-gassing of the Mystic Substation GIS.	3

Source: Exh. DPU-G-10

Constellation inquired via discovery as to the possible impacts to generation at Mystic Unit 9 resulting from planned outages required for construction of the Project (Companies' Brief at 9). For the simultaneous outage of the O-167 and P-168 lines, there is no transmission path from the Mystic Unit 9 steam turbine, idling the unit (Exh. CNE-3 (rev.)). The Companies anticipate that the restriction is unlikely to exceed four days (id.). The Companies will file their outage requests with ISO-NE prior to construction of the Project (Tr. at 43, 44). ISO-NE will evaluate the Companies' proposed outages to determine their impacts on system reliability, congestion costs, and generation (Exh. DPU-G-15(1)).

2. Pavement and Site Restoration

The Massachusetts Department of Transportation ("MADOT") Highway Division will be performing roadway construction and resurfacing along Alford Street during the same

timeframe as construction of the Project (Tr. 32, 33). Pursuant to communications between the Companies and MADOT officials, Project sequencing along Alford Street would proceed as follows: (1) contractors for MADOT will install a leveling coat of pavement; (2) the Companies will trench, install the pipe, and replace the pavement pursuant to MADOT specifications; and (3) MADOT will then apply the final coat of pavement (Tr. at 33).

The Companies indicated that city officials from Boston and Everett are concerned about the sequencing and timing of MADOT and the Companies' projects along Alford Street (Exh. NSTAR/NEP-CF-1, at 17). The Department's Street Restoration Standards state that: "The Municipality shall have jurisdiction to determine the pavement repair method to be utilized on all pavements which have been installed for less than five years." See Street Restoration Standards, D.T.E. 98-22-A (1999), at § 9.16. The Companies have agreed to coordinate the trenching and installation of the pipe with MADOT's construction and resurfacing project. If such coordination is unsuccessful, the Companies state that they would provide "curb to curb" repaving of the section of Alford Street impacted by the Project (Exh. NSTAR/NEP-CF-1, at 18).

In terms of site restoration from Horizon Way to the Riser Structure, NEP will restore the site in accordance with the terms of the original easement granted in 1964 (DPU-RR-1). This easement is currently in effect and will remain so after the pending easement amendment is recorded (id.). The original easement provides that NEP, as grantee, must promptly restore the surface area to substantially its former condition and leave the site in a neat and orderly manner following any work (id.).

3. Water Resources Impacts

Some portions of the Project will be located in formerly filled tidelands (Exh. NSTAR/NEP-KM-1, at 7). The Massachusetts Department of Environmental Protection ("MADEP") has determined that the Project constitutes a minor project modification under an existing Chapter 91 license and does not require a new Chapter 91 license (id.).

The Companies do not anticipate any wetland impacts, given that the Project is not located within an area designated as a Wetland Resource Area (Exh. NSTAR/NEP-KM-1, at 7). Straw wattles secured by stakes will be used as erosion control to protect catch basins from sedimentation (Tr. at 57). The Companies commit to keeping public roadways clean of debris and swept at least on a daily basis (Exh. DPU-G-11).

4. Land Use Impacts and Outreach Activities

a. Land Use Impacts

The Companies characterize the predominant land uses abutting the ROW as industrial and commercial (Exh. NSTAR/NEP-KM-1, at 4).[7] There are four commercial buildings within 20 feet of the centerline of the Supplemental Cable (Exh. DPU-LU-3). The nearest residences are over 400 feet from the Project (Exh. NSTAR/NEP-CF-5).

[7] The Project requires a new easement and an amended easement from private property owners for the Supplemental Cable and expansion of the footprint of the Riser Structure (Exh. DPU-LU-1). As for the amended easement, there is a title dispute between two parties pending in the Massachusetts Appeals Court (Exh. DPU-LU-2). To address the uncertainty associated with the appeal, NEP and the two parties have executed a Purchase and Sale Agreement for an Easement Amendment (Exh. DPU-LU-2 Supp. 2). In turn, NEP will issue nonrefundable deposits to each party, and NEP will hold the purchase price in escrow until a clear title has been established (Exh. DPU-LU-2 Supp.).

Also, the Companies do not anticipate impacts to protected species as the Project is not located within an Area of Critical Environmental Concern (Exh. NSTAR/NEP-KM-1, at 3). Based upon the Companies' review of the Massachusetts Historical Commission's ("MHC") records, there are no previously reported historic or archaeological sites within the alignment of the Project (Exh. NSTAR/NEP-KM-1, at 8). Accordingly, the Project does not require any permits from the Natural Heritage and Endangered Species Program or MHC (id.).

b. Companies' Outreach Activities

On March 9, 2011, the Companies conducted an outreach meeting with Everett's mayor and the chiefs of the Fire and Police Departments (Exh. NSTAR/NEP-CF-1, at 16). On April 15, 2011, NEP and NSTAR held an outreach meeting concerning the Project with several Boston officials, including the commissioner, the city engineer, and the chief engineer of the Department of Public Works ("DPW"), the chief of Environmental and Energy Services, and the highway construction manager at Boston City Hall (id.). On April 15, 2011, and May 4, 2011, representatives of NEP and NSTAR went door-to-door to meet with abutters to discuss the Project (id.). The Companies also mailed letters and fact sheets on May 9, 2010, to municipal officials in Everett and Boston as well as all abutters within 300 feet of the ROW (Exh. NSTAR/NEP-CF-1, at 16).[8] Approximately one to two weeks in advance of construction, the Companies will notify abutters and local officials of the construction schedule and hours of construction via a combination of mail, email, telephone and door-to-door

[8] During the Companies' outreach efforts, a business located at 20 Broadway in Everett expressed concerns about access to its parking lot abutting Alford Street (Exh. DPU-G-8). The abutter requested to be notified of the construction schedule so it could access its truck inventory (id.).

outreach and include both Companies' contact information (id. at 18; Exh. DPU-G-9; Tr. at 61).

5. Visual Impacts

Visual impacts from the Supplemental Cable will be minimal because the half mile transmission line primarily will be underground within public streets (Exh. NSTAR/NEP-KM-1, at 6). Visual impacts will be limited to modifications to the Riser Structure and upgrades to the Mystic Substation (Companies' Brief at 27, 28). The height of the new equipment adjacent to the Riser Structure will be designed so that the top of the new cable termination will be essentially the same height of the existing termination, which is approximately 18 feet, 5 inches above grade (Exh. DPU-V-1). The existing Riser Structure is 88 feet from ground level to its highest point (id.). The Riser Structure is located near an abandoned railroad bed in an area that is predominantly industrial and commercial (Exh. NSTAR/NEP-CF-5).

The only outdoor above-grade modification to the Mystic Substation is the additional GIS equipment, which will minimally alter the appearance of the existing substation (Exh. DPU-V-2). The Mystic Substation is situated in an industrial area adjacent to the Mystic Unit 9 (Exh. NSTAR/NEP-CF-5 (rev.)).

6. Traffic Impacts

With the exception of material deliveries, construction at the Mystic Substation and Riser Structure will occur out of the public way and the Companies do not anticipate traffic impacts (Exh. DPU-G-1). However, the Project will cause temporary traffic impacts associated with the trenching and installation of the pipe for the Supplemental Cable primarily along the 1,400-foot segment of Alford Street, which is a four lane roadway (Exh. NSTAR/

NEP-CF-1, at 13). During construction across Alford Street, sequencing would allow two-way traffic flow with one travel lane in each direction (Exh. DPU-T-6). The Companies stated that, under normal trenching conditions the duration of construction at any given location will be about ten days, and that construction will proceed at a rate averaging approximately 100 feet per day (Exh. DPU-G-13).

The typical width of the construction corridor will be 14-15 feet, consisting of one travel lane (i.e., twelve feet) plus an additional two to three feet for construction barriers such as cones, barrels, or jersey barriers (Exh. DPU-T-5). The Companies indicated that construction vehicles and construction workers' personal vehicles will be parked either on Horizon Way, the contractor's facilities, or a marshaling yard secured by the contractor (Tr. at 38). The Companies in coordination with MADOT, Boston DPW and Everett DPW will prepare a traffic management plan ("TMP") including measures such as police details, lane restrictions, speed limitations, and pedestrian restrictions (Exh. DPU-T-1).

According to the Companies, the decision as to whether to conduct nighttime construction to minimize traffic impacts on Alford Street will depend on the timing of the Companies' Project relative to MADOT's repaving project (Exh. DPU-T-3). The conduit installation on Alford Street may be performed outside of normal business hours if it is determined by MADOT, and/or the cities of Boston and Everett that the use of off-peak construction hours would minimize impacts to local traffic and businesses (Exh. DPU-G-1). If nighttime construction is performed, the Companies indicated that work hours would be on weekdays between 7:00 p.m. and 6:00 a.m. in order to avoid rush hour traffic (Exh DPU-T-3). The Companies stated that they will continue to coordinate with the MADOT and

officials from the cities of Everett and Boston to minimize traffic impacts relative to MADOT's repaving project and the Companies' Project (Exh. DPU-T-2).

7. Noise Impacts

The noise impacts will be limited to the construction phase of the Project because according to the Companies, the operation of the new conductors will not be a source of noise (Exh. NSTAR/NEP-KM-1, at 4-5). Most phases of Project construction will involve some noise with potential sources being construction vehicles, excavation activities, generators, air-compressors, and equipment associated with the repaving the roads (Exhs. NSTAR/NEP-CF-1, at 13; DPU-NO-1). Typical sound levels from construction equipment at a reference distance of 50 feet could range between 80 A-weighted sound level in decibels ("dBA") for a backhoe to 90 dBA for a mounted impact hammer (Exh. DPU-NO-2). Given the industrial and commercial nature along the ROW and abutting the Riser Structure and the Mystic Substation, noise impacts due to construction of the Project would be relatively minor and would not affect sensitive receptors (Exhs. NSTAR/NEP-KM-1, at 4; DPU-NO-1).

The Companies propose to perform construction at the Mystic Substation, the Riser Structure and the Supplemental Cable during normal business hours, Monday through Friday from 7:00 a.m. to 5:00 p.m. (Exh. DPU-G-1). The Companies stated that they will comply with all applicable noise requirements in the cities of Everett and Boston during construction (Exh. NSTAR/NEP-CF-1, at 14). According to the Companies, applicable noise requirements in Everett General Code Section 13-7 prohibit noise measured in excess of 50 dBA between the hours of 6:00 p.m. and 7:00 a.m. at any lot line (id.). The Regulations for the Control of Noise in the City of Boston prohibit the operation of construction devices (except for impact devices) that produce noise levels exceeding 86 dBA at a distance of 50 feet from the device

(id.). Exceptions to the Companies' proposed work hours for construction may include work that requires a transmission line outage because of transmission system constraints, special processes that must be completed once they are commenced, and off-peak hours to mitigate traffic impacts (id.). Certain work such as cable pulling, cable splicing, cable terminating, vacuum processing, and fluid filling cannot be stopped once started and therefore would need to be completed regardless of the time of day (Exh. DPU-G-1). These activities would occur at the Riser Structure, the Mystic Substation and the manhole on Horizon Way (id.).

In terms of mitigation, the Companies will require contractors to use modern equipment in good repair which generally has technology to minimize engine noise (Tr. at 60). The Companies maintained that equipment would be operated only as needed during construction (Exh. DPU-G-13). The Companies will limit vehicle idling to five minutes as required by M.G.L. c. 90, § 16A, and MADEP regulations (310 C.M.R. § 7.11(1)(b)), with exemptions for vehicles being serviced, vehicles that require their engines running while making deliveries, and vehicles that need to run their engines to operate accessories (id. at 14).

8. Air Impacts

a. General Air Impacts

Fugitive dust impacts should be minimal due to the short distance of the excavated area for the Supplemental Cable (Exh. DPU-G-11). In addition, water spray will be used for dust suppression in the Mystic Substation to control fugitive dust depositing on insulators (id.).

b. Construction Equipment Air Impacts

According to MADEP's Diesel Retrofit Guide, diesel engines produce significant amounts of particulate matter ("PM"), which are small solid and liquid particles composed primarily of carbon which can be easily inhaled and which pose a significant health risk to

humans (Exh. DPU-1, at 1). MADEP indicates that reducing PM pollution from all sources, including construction equipment, is important for the health of workers and communities (id.). MADEP has established a Massachusetts Diesel Retrofit Program ("MDRP") that uses contract specifications to require contractors working on state-funded projects to install retrofit pollution controls on their construction equipment engines to reduce PM, volatile organic compounds ("VOCs"), and carbon monoxide ("CO") (id. at 4).[9]

The Companies listed six types of non-road, diesel-powered construction equipment expected to be used during the construction of the Project (RR-DPU-3). The construction of the Project is estimated to take place from spring 2012 through fall 2012 (Tr. at 27). The Companies will mitigate air impacts by using only ultra-low sulfur diesel fuel in their diesel-powered construction equipment (Exh. NSTAR/NEP-CF-1, at 15).[10] Consistent with the recent Department and Energy Facilities Siting Board ("Siting Board") decisions, both Companies committed to retrofitting all diesel-powered non-road construction equipment rated 50 horsepower or above to be used for 30 or more days over the course of the Project with USEPA-verified (or equivalent) emission control devices, such as oxidation catalysts or other comparable technologies (to the extent that they are commercially available) installed on the exhaust system side of the diesel combustion engine (Exhs. DPU-AIR-1, RR-DPU-3).

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[9] Other strategies include (1) reducing idling; (2) replacing, repowering, or rebuilding older engines; and (3) using cleaner diesel fuels (Exh. DPU-1, at 4).

[10] Ultra-low sulfur diesel has a maximum sulfur content of 15 parts per million; low sulfur diesel fuel has a maximum sulfur content of 500 parts per million (Exh. NSTAR/NEP-CF-1, at 15). Therefore, use of ultra-low sulfur diesel reduces sulfur content by 97 percent (id.).

c. SF_6 Impacts

Sulfur hexafluoride ("SF_6") gas has been identified as a non-toxic but highly potent greenhouse gas ("GHG"). The Massachusetts Clean Energy's Energy and Climate Plan[11] adopts a 2020 statewide GHG emissions limit of 25 percent below 1990 emissions levels and sets forth an integrated portfolio of policies to reach the Commonwealth's clean energy and climate goals.[12] One of the policies set forth in the Plan is reducing SF_6 emissions by 2020 equivalent to a reduction of 0.2 million metric tons of CO_2, which would reduce state-wide GHG emissions by approximately 0.2 percent.

As of December 31, 2010, NSTAR's reported system-wide nameplate capacity is 67,207 pounds of SF_6 gas (Exh. DPU-AIR-6). For 2010, NSTAR reported the emission of 2,257 pounds of SF_6, for a leakage rate of 3.36 percent (id.). SF_6 is currently being used at NSTAR's Mystic Substation for gas-insulated circuit breakers, disconnect switches and bus duct (id.). NSTAR equipment at the Mystic Substation currently contains approximately 7,566 pounds of SF_6 with an additional 500 pounds stored in cylinders (id.). The new 115 kV GIS bus extension will contain approximately 266 pounds of SF_6 (id.). This will result in a total of approximately 8,332 pounds of SF_6 at the Mystic Substation (id.). NSTAR does not

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[11] On December 29, 2010, the Secretary of Energy and Environmental Affairs issued the Massachusetts Clean Energy and Climate Plan for 2020. See G.L. c. 21N.

[12] SF_6 is a GHG that is 23,900 times more potent than CO_2. One pound of SF_6 has the same global warming impact as eleven tons of CO_2. See the Massachusetts Clean Energy and Climate Plan for 2020, at 77.

track leakage rates on individual substations; however, the new equipment installed at the Mystic Substation is expected to have a leakage rate of less than 0.1 percent per year (id.).[13]

SF_6 equipment is filled by NSTAR or contractor personnel working under NSTAR supervision (id.). The equipment is typically filled once in its lifetime by NSTAR personnel who have been trained by the equipment manufacturer and follow the equipment filling instruction guide (id.). SF_6 is shipped in U.S. Department of Transportation ("USDOT") approved cylinders and is handled in accordance with the gas and equipment manufacturers' work practices (id.). NSTAR instituted a gas cylinder management program to control gas use and provide accurate tracking for reporting (id.). In addition, all gas breakers are constantly monitored for gas density (id.). When a gas loss is detected, NSTAR conducts appropriate maintenance (id.). When equipment is retired, the SF_6 gas is recovered and reclaimed by a specialty gas vendor, minimizing atmospheric releases (id.).

9. Potential Hazardous Materials Impacts

Hazardous substances associated with the construction process include oils, greases and equipment fuels (Exh. NSTAR/NEP-KM-1, at 4). Once the underground transmission system is installed, the closed pipe system will be filled with PTC oil which is a highly refined petroleum-based mineral oil also known as alkylbenzene (id.). The Companies maintain that alkylbenzene is less toxic than motor oil commonly used as a lubricant in passenger vehicles (id.). Procedures for the routine handling of oil and spill control devices are outlined in the

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[13] NSTAR is currently installing "Third Generation" SF_6 filled equipment with a leakage rate of less than 0.1 percent per year (Exh. DPU-AIR-6).

Companies' respective Spill Prevention, Control and Countermeasure ("SPCC") Plans (Exh. DPU-S-6).[14]

Some excavated materials may have the potential to be contaminated from historical releases or former industrial practices in the vicinity of the Project (Exh. DPU-S-4). Generally, the Companies will be excavating urban fill material (id.). A draft Environmental Due Diligence Report prepared for NEP by Coneco Engineers & Scientists, Inc. in December, 2008 investigated twelve parcels of private property that abut the ROW (Exh. DPU-W-2(1) at 4). According to the Environmental Due Diligence Report, there was a large parcel formerly occupied by the Monsanto Chemical Company ("Monsanto") in Everett with various structures and chemical bulk storage tanks (id. at 6) in the vicinity of the Project route.

On August 5, 1997, a Class A-3 Response Action Outcome and an Activity and Use Limitation were submitted to MADEP relating to the former Monsanto property (id. at 11). Subareas within the former Monsanto property were found to have several contaminants of concern including metals, naphthalene, polychlorinated byphenyls ("PCBs"), polycyclic aromatic hydrocarbon ("PAHs") and plasticizers (adipate and phthalate esters) (id.).

The Companies will conduct soil and groundwater assessment prior to initiation of construction activities and will prepare specific soil and groundwater sampling and management plans for utility construction sites pursuant to the Massachusetts Contingency Plan ("MCP") (Exh. DPU-S-2; RR-DPU-4). The Companies will engage the services of a Massachusetts Licensed Site Professional ("LSP") to perform pre-construction soil sampling

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[14] Other measures in the Companies' respective SPCC Plans include corrosion resistant coating on pipes, warning tape installed in the trench above the cable to notify future excavators, automatic alarms at the cable pressurizing plant to detect cable leaks, and contracts with environmental contractors specializing in PTC repairs (Exh. DPU-S-6).

by means of test pits or borings (Exh. DPU-S-3). NSTAR stated that soil sampling will be conducted every 200 feet, at a minimum, along the linear alignment for the Supplemental Cable (RR-DPU-4). NSTAR further stated that at least one groundwater sample at a proposed vault location will be collected and analyzed (id.). Pre-construction characterization data will be used to determine whether a Utility Related Abatement Measure filing pursuant to 310 C.M.R. 40.0460 of the MCP or other action under the MCP is required (RR-DPU-4). In addition, the pre-construction characterization data will be used to select offsite disposal options (id.).

The groundwater table along the Supplemental Cable route is approximately five to eight feet below grade (Exh. NSTAR/NEP-KM-1, at 3-4). The depth of the trench will be approximately 4.5 feet (Exh. DPU-W-1). Due to the presence of existing utilities, however, the Supplemental Cable may be installed deeper than 4.5 feet in some locations and dewatering of the trench may be necessary in those areas (id.). Furthermore, the excavation for the one required manhole will be approximately 14 feet deep, which may also require dewatering (id.). Groundwater from the manhole and/or trench dewatering will be discharged to a recharge pit close to the excavation or will be transported off site for disposal subject to all applicable laws and regulations (id.). The Companies will obtain a permit based on the results of the pre-characterization of the groundwater as required under the National Pollutant Discharge Elimination System ("NPDES") as regulated by the U.S. Environmental Protection Agency ("USEPA") (Exh. NSTAR/NEP-KM-1, at 4).

The Companies do not expect impacts to groundwater as a result of constructing the Project (Exh. DPU-W-3). However, in the event of an accidental release of oil, an immediate

response will be initiated in accordance with the Companies' Spill Notification and Response Policies which include measures such as employing emergency responders and maintaining on-site spill response materials (id.).

10. Magnetic Field Impacts

The Companies calculated the magnetic field levels for existing and post-Project conditions (Exh. NSTAR/NEP-PAV-4, at 11, 17).[15] Along Alford Street, the existing line and Supplemental Cable will be 50 to 80 feet apart, while along Horizon Way to the Riser Structure the cables will be as close as two feet from each other (id.). The ferromagnetic steel pipes enclosing each set of phase conductors diminish the magnetic fields produced by the phase conductors (id. at 18). According to the Companies, the steel pipes should reduce the magnetic fields from the bundled three phase cables by 25- to 30-fold (id.). Magnetic field levels presented in Table 2 below were derived using a more conservative steel-pipe shield factor of 10 (id.).

[15] Because the proposed transmission circuit will be installed underground, no above-ground electric fields will be produced and no changes in ambient electric field strengths will result from the Project (Exh. NSTAR/NEP-PAV-4, at 2). Accordingly, the Companies modeled existing and proposed magnetic field levels only (id.).

Table 2: Magnetic Field Levels for Existing and Proposed Configurations

Configuration	Magnetic Field Levels at ~3 feet above grade	
	At Location of Maximum Magnetic Field	20 Feet Laterally from Centerline of Existing Conductors
Existing Line	2.1 mG	0.23 mG
Existing Line and Supplemental Cable 50 feet apart (Alford St)	1.5 mG	0.12-0.19 mG
Existing Line and Supplemental Cable 2 feet apart (Horizon Way to Riser Structure)	2.3 mG	0.30 mG

Source: Exh. NSTAR/NEP-PAV-4, at 15

Project implementation would generally reduce modeled magnetic field levels along Alford Street, where the existing line and Supplemental Cable will be 50 or more feet apart, but minimally increase levels along Horizon Way to the Riser Structure, where the conductors would be as close as two feet apart (Exh. NSTAR/NEP-PAV-4, at 19). The magnetic field levels from the underground conductors decrease rapidly with lateral distance away from the cables (id.).

11. Analysis and Findings

The Department's review of the record in the case has identified a number of potential environmental impacts associated with the Project that must be evaluated in light of the Department's statutory authority under G.L. c. 164, § 72, and the Department's established standard of review. The Department finds that, with implementation of the Companies' specified mitigation measures, and the additional conditions directed by the Department as discussed below, the environmental impacts of the Project will be minimized, consistent with the public interest.

In terms of construction impacts, the Department agrees with the cities of Boston and Everett that pavement restoration is necessary to mitigate the Project's impacts. Thus, the Department directs the Companies to continue to collaborate with the MADOT and appropriate officials at the cities of Boston and Everett regarding the sequencing and extent of pavement restoration for the segment of Alford Street impacted by the Project. If such coordination is unsuccessful, the Companies must provide curb-to-curb repaving of the section of Alford Street impacted by the Project.

With respect to water resources impacts, the Companies do not expect impacts to Wellhead Protection, Drinking Water Supply Resource Areas, or to wetlands as the Project is not located in these designated areas (Exh. NSTAR/NEP-KM-1, at 3, 7). The Project is located in formerly filled tidelands. However, MADEP determined that the Project does not require a new license (id.). In terms of mitigation, the Companies will implement standard erosion controls (id. at 6).

Because the Supplemental Cable portion of the Project will be underground for half a mile, primarily under public streets within an industrial and commercial setting, land use and visual impacts will be minimal (Exh. DPU-LU-4). Specifically, the upgrades to NEP's existing Riser Structure will occur within an industrial area which lies near an abandoned railroad bed and the modifications to the Mystic Substation will occur within the existing footprint which is adjacent to the Mystic generation facilities (Exh. NSTAR/NEP-CF-5; Tr. at 60). With respect to impacts to historical and archeological resources, based upon the Companies' review of the MHC's records, there are no previously reported historic or archaeological sites within the alignment of the Project (Exh. NSTAR/NEP-KM-1, at 8).

If it is determined that the Project will require a permit pursuant to Section 106 of the National Historic Preservation Act, the Companies will submit a Project Notification form to the MHC to satisfy these requirements (id.). With respect to protected species, the Project is not located in an Area of Critical Environmental Concern, and, therefore, the Companies do not anticipate impacts to protected species (id. at 3).

The Companies will notify the direct abutters via a combination of mail, email, telephone and door-to-door outreach regarding construction schedule and hours and will include contact information for the companies' respective public relations liaisons to address abutters' concerns pertaining to the Project (Exhs. NSTAR/NEP-CF-1, at 18; DPU-G-9).

In terms of traffic impacts, the Department anticipates that the Companies will make every effort to avoid significant traffic impacts specifically along heavily traveled Alford Street while constructing the Project. The Companies must collaborate with MADOT and officials from the cities of Boston and Everett concerning their respective projects in order to minimize traffic impacts. The Companies, in coordination with MADOT, Boston DPW and Everett DPW, will prepare a TMP that details traffic management measures to be used during construction of the Project. In addition, should construction be necessary outside of the permitted construction hours as set forth by the cities of Boston and Everett to minimize traffic impacts, the Department directs NEP and NSTAR to obtain prior permission from the relevant municipal authority and to notify affected abutters at least 24 hours prior to commencing any work, whenever practicable. The Companies shall perform work safely and with respect for the needs of abutters and motorists and shall address any and all specific traffic concerns should they arise.

With respect to noise impacts, construction of the Project will occur over a relatively short duration within an area of industrial and commercial uses and not in close proximity to residential uses (Exhs. NSTAR/NEP-CF-1, at 4; DPU-G-13). The Companies will mitigate noise impacts by performing construction primarily during business hours (i.e., Monday through Friday from 7:00 a.m. to 5:00 p.m.), using equipment of the latest design and in compliance with all relevant requirements and noise ordinances, imposing idling restrictions, and operating equipment only as needed during construction (Exh. DPU-NO-4). As noted above, should the Companies need to extend construction beyond construction hours permitted by the cities of Boston and Everett, the Companies are directed to seek authority from the relevant municipalities and to notify abutters. Once the Project's construction is complete, there will be no noise generated from the operation of the Project (Exh. NSTAR/NEP-1, at 5).

Construction equipment air impacts will be limited to the nine months of Project construction (Exh. NSTAR/NEP-CF-1, at 10). In terms of mitigation of construction air impacts, the Companies have committed to using ultra-low sulfur diesel fuel in their diesel-powered construction equipment, limiting vehicle idling to five minutes pursuant to state regulations, and retrofitting all diesel-powered non-road construction equipment consistent with recent Department and Siting Board requirements (Exhs. NSTAR/NEP-CF-1, at 15; DPU-AIR-1). See Tennessee Gas Pipeline Company, D.P.U. 11-26, at 20, 21 (January 6, 2012); New England Power Company, D.P.U. 09-136/137, at 26, 27 (October 13, 2011); New England Power Company, D.P.U. 10-77, at, 37 (May 6, 2011). The Department directs the Companies to submit a joint list of retrofitted equipment within six months after completion of

construction detailing: type of equipment, make/model, model year, engine horsepower, and the type of emission control technology installed.

With respect to SF_6 impacts, the Department reviewed NSTAR's proposed use of SF_6 at the Mystic Substation to ensure that SF_6 emissions are being reduced to the maximum extent possible. The new equipment installed at the Mystic Substation will add approximately 266 pounds of SF_6 to the Mystic Substation with a leakage rate of less than 0.1 percent per year (Exh. DPU-AIR-6). Mitigation measures to minimize atmospheric releases of SF_6 include using equipment that has an emission rate of less than 0.1 percent per year, shipping SF_6 in MADOT approved cylinders, filling SF_6 equipment by NSTAR personnel trained by the equipment manufacturer, monitoring for SF_6 gas loss and using a specialty gas vendor when the equipment is retired (id.).

Prevention measures for potentially hazardous materials, such as oil, greases and equipment fuels will be outlined in the Companies' respective SPCC Plans and would include corrosion resistant coating on the pipe; warning tape above the cable to notify future excavators, cable leak detection alarms and contracts with environmental contractors specializing in PTC repairs (Exh. DPU-S-6). The groundwater is fairly high in this area and may require dewatering which would be discharged to a pit close to the excavation or transported off site for disposal subject to all applicable laws and regulations (Exh. DPU-W-1). In terms of mitigation, the Companies will implement Spill Notification and Response Policies (Exh. DPU-W-3).

Regarding excavated materials, the site history of the former Monsanto property in Everett used for chemical manufacturing may warrant a more extensive soil and groundwater

sampling plan than a standard urban protocol (Exh. DPU-W-2(1) at 8). The Companies have yet to prepare a site-specific soil and groundwater sampling plan and the Department has concerns regarding potential contaminants from historical releases or former industrial practices, specifically in the location from the end of Horizon Way to the Riser Structure (Exh. DPU-S-2). To protect public welfare, the Department directs the Companies to collect a sufficient number of soil and groundwater samples, as managed by an LSP, and ensure that they are analyzed for petroleum hydrocarbon, PAHs, phthalates and metals, at a minimum. With regard to the soil and groundwater sampling for the remainder of the Project, the Companies will follow the direction of the LSP and follow all requirements of the Massachusetts Contingency Plan (310 C.M.R. 40.0000).

With respect to magnetic field impacts, implementation of the Project will generally reduce modeled magnetic field levels where existing underground conductors and the Supplemental Cable will be 50 feet apart (Exh. NSTAR/NEP-PAV-4, at 19). In locations where the conductors are as close as two feet apart, there will be a slight increase in the magnetic field levels under peak loading conditions (id.). The magnetic field levels from the underground conductors decrease rapidly with lateral distance away from the cables (id.). In addition, potential EMF impacts are minimized due to the transmission line being underground and the limited number of industrial and commercial structures in close proximity to the transmission line, with no residences within 400 feet.

Overall, the Project will result in EMF levels that will be largely unchanged from those of the Existing Transmission Line. Furthermore, these levels are significantly below magnetic field levels in projects previously approved by both the Department and the Siting Board. See

Western Massachusetts Electric Company, D.P.U. 09-24/25, at 22-23 (2010); New England Power Company, D.P.U. 08-103, at 34 (2009); New England Power Company, EFSB 09-1/D.P.U. 09-52/53, at 59-62 (2011); Western Massachusetts Electric Company, EFSB 08-2/DPU 08-105/106, at 70-74 (2010).

12. Conclusion on the Impacts of the Project

The Department concludes that with the Project's compliance with: (1) all applicable federal, state and local laws and regulations; and (2) the mitigation measures proffered by the Companies, and as additionally directed by the Department herein, the Project would include feasible and reasonable measures to avoid or minimize environmental impacts.

D. Conclusion

Based on the foregoing analysis of: (i) the need for or public benefit of the proposed use; (ii) alternatives explored; and (iii) impacts of the proposed use, the Department finds that the benefits of the Project to the general public exceed the local impacts, and thus, that the proposed use is necessary for the purpose alleged, will serve the public convenience, and is consistent with the public interest.

IV. SECTION 61

MEPA provides that "[a]ny determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact" ("Section 61 findings"). G.L. c. 30, § 61. Pursuant to 301 C.M.R. 11.01 (3), Section 61 findings are necessary when an Environmental Impact Report ("EIR") is submitted to the Secretary of Energy and Environmental Affairs, and should be based on such EIR. Where an EIR is not required, Section 61 findings are not necessary. 301 C.M.R. 11.01 (3). According to the

Companies, the Project does not trigger the review thresholds set forth by the Massachusetts Environmental Policy Act that require the preparation of an EIR (Tr. at 26, 27). The Department concurs that Section 61 findings are not necessary in this case.[16]

V. ORDER

Accordingly, after due notice, hearing and consideration, it is hereby

ORDERED: That the petition of NSTAR Electric Company and New England Power Company, d/b/a National Grid, seeking approval to construct and operate a transmission line pursuant to G.L. c. 164, § 72, is granted; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, continue to collaborate with the Massachusetts Department of Transportation and appropriate officials at the cities of Boston and Everett regarding the sequencing and extent of pavement restoration for the segment of Alford Street impacted by the Project. If such coordination is unsuccessful, the Companies must provide curb-to-curb repaving of the section of Alford Street impacted by the Project; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, in consultation with the municipalities develop and implement

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[16] The Department notes the requirements set forth in G.L. c. 30A, § 61, effective November 5, 2008, regarding findings related to climate change impacts. The Department further notes that this Project will have minimal greenhouse gas emissions, as it is an underground transmission line that will be constructed primarily beneath public streets. The new GIS bus equipment at the Mystic Substation will have a SF_6 leakage rate of less than 0.1 percent per year with mitigation measures to minimize releases from equipment and filling (Exh. DPU-AIR-6). As such, the Project will not have direct emissions from a stationary source or indirect emissions from energy consumption and will have minimal indirect emissions from transportation sources limited to construction, occasional repair or maintenance activities. The Department addresses temporary emissions from off-road construction vehicles in Section III.C.9.a, above.

a Traffic Management Plan that will detail traffic management measures to be used during construction of the Project; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, obtain prior permission from the relevant municipal authority and, whenever practicable, notify affected abutters at least 24 hours prior to commencing work outside of regular construction hours as permitted by the cities of Everett and Boston; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, submit a joint list to the Department of the retrofitted equipment within six months after completion of construction detailing: type of equipment, make/model, model year, engine horsepower, and the type of emission control technology installed; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, work cooperatively with municipal and state officials and affected property owners in the cities of Boston and Everett to minimize traffic, noise, construction, and other local impacts associated with the Project; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power, d/b/a National Grid, collect a sufficient number of soil and groundwater samples, as managed by a Licensed Site Professional, and ensure that they are analyzed for petroleum hydrocarbon, PAHs, phthalates and metals, at a minimum. In regards to the soil and groundwater sampling for the remainder of the Project, the Companies shall follow the direction of the Licensed Site Professional and follow all requirements of the Massachusetts Contingency Plan (310 C.M.R. 40.0000).

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, shall obtain all other governmental approvals necessary for this Project; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, shall construct and operate the Project in accordance with this Order; and it is

FURTHER ORDERED: That NSTAR Electric Company and New England Power Company, d/b/a National Grid, and its successors in interest notify the Department of any significant changes in the planned timing, design or environmental impacts of the Project so that the Department may decide whether to inquire further into a particular issue; and it is

FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the cities of Boston and Everett and that NSTAR Electric Company and New England Power Company, d/b/a National Grid, shall serve a copy of this Order on the City Councils, Departments of Public Works and Planning Departments of the cities of Everett and Boston, and the Highway Division of the Massachusetts Department of Transportation within five business days of its issuance and shall certify to the Secretary of the Department

within ten business days of its issuance that such service has been accomplished.

By Order of the Department:

/s/
Ann G. Berwick, Chair

/s/
Jolette A. Westbrook, Commissioner

/s/
David W. Cash, Commissioner

An appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part. Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of the twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. G.L. c. 25