The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 13-126/127 September 26, 2014

NSTAR Electric Company petition pursuant to Section 6 of Chapter 665 of the Acts of 1956 for Exemptions from the Boston Zoning Code for a substation at Electric Avenue in Boston and Approval Pursuant to G.L. c. 164, § 72 to construct and operate two 115 kV transmission lines in Boston.

APPEARANCE: David S. Rosenzweig, Esq.
Michael J. Koehler, Esq.
Keegan Werlin LLP
265 Franklin Street
Boston, MA 02110
FOR: NSTAR Electric Company
Petitioner

TABLE OF CONTENTS

I. INTRODUCTION

A. Description of the Proposed Project

On August 9, 2013, NSTAR Electric Company ("NSTAR" or the "Company") filed with the Department of Public Utilities (the "Department"): (1) a request for exemption from the Boston Zoning Code pursuant to Section 6 of Chapter 665 of the Acts of 1956 ("Zoning Petition"); and (2) a petition for approval of two transmission lines pursuant to G.L. c. 164, § 72 ("Section 72 Petition"). The Company indicated that the exemption and approval are needed for the Company's proposal to construct and operate: (1) a new 115/14 kV substation on Electric Avenue in the North Brighton neighborhood of Boston; (2) two new 115 kV underground pipe-type transmission cables totaling approximately 2,900 feet in North Brighton; and (3) underground distribution conduit in approximately 16,500 feet of road in Boston and Watertown (together, the "Project") (Exh. NSTAR-1, at 1-6). The matters were docketed as D.P.U. 13-126 and D.P.U. 13-127.

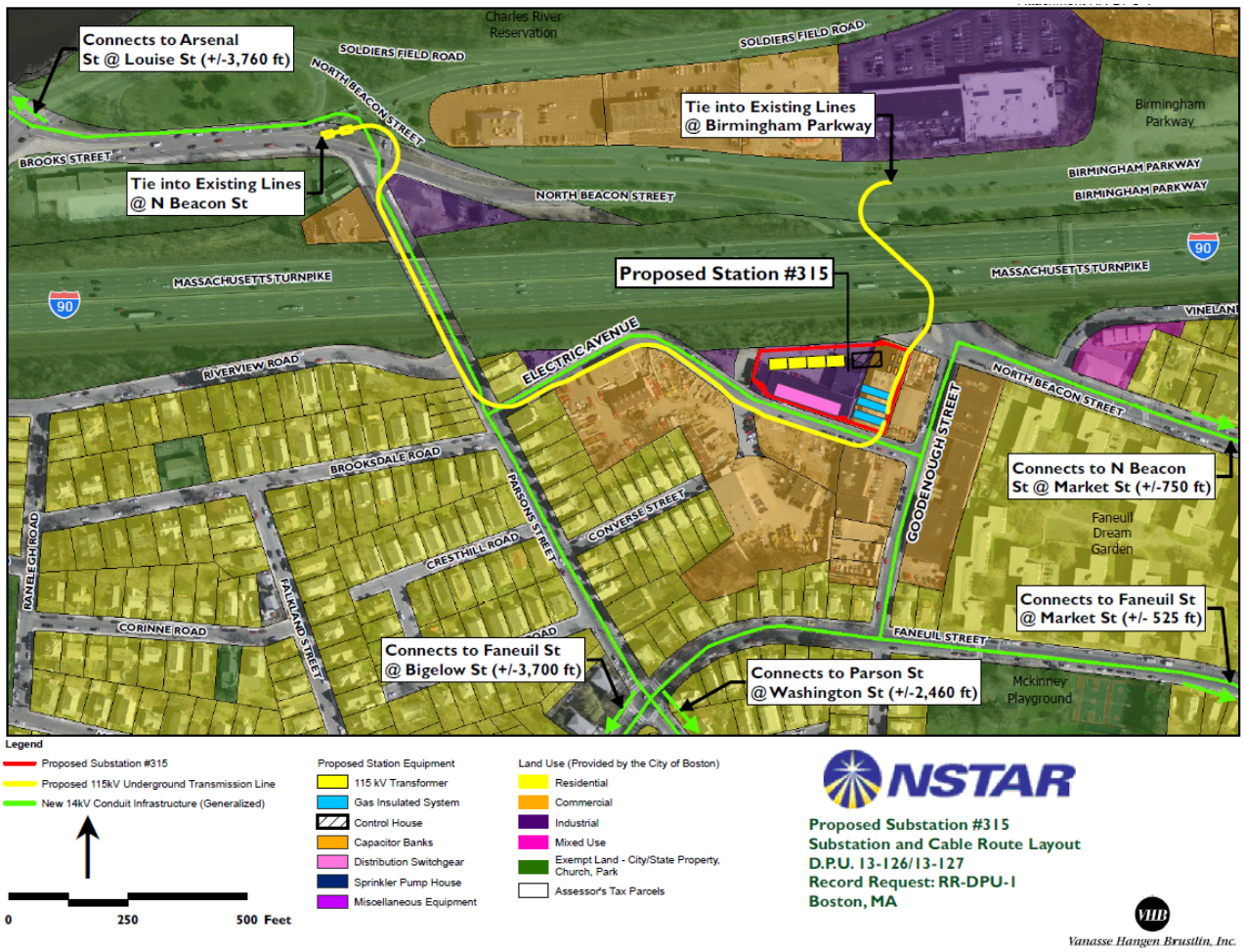
Electric Avenue extends between Parsons Street and Goodenough Street near North Beacon Street. The Project includes construction of a new substation ("Substation") on the north side of Electric Avenue and immediately south of the Massachusetts Bay Transportation Authority ("MBTA") rail lines that run next to the Mass Turnpike (id. at 5-6). Equipment at the Substation would include three 115/14 kV 37/50/62.5 MVA transformers,[1] with space for future expansion for a fourth transformer; 115 kV gas-insulated switchgear with twelve circuit

[1] The three numbers serially portrayed in "37/50/62.5 MVA" represent the nameplate capacity of each transformer with three levels of cooling: no fans operating, with a single stage of fans, and with all fans operating (Exh. DPU-1-10).

breakers in a breaker-and-a-half configuration; a control building 60 feet by 30 feet by twelve feet high; three 15 kV 9.6 MVAR capacitor banks; and six sections of distribution switchgear in metal housing (id.). The Company would also construct barriers between the transformers, install a high awning along the railroad side of the Substation, install site lighting, and erect a fence and include plantings on the Electric Avenue side of the Substation (id. at 7 and exh. 6(b)). Figure 1, below, shows the central part of the Project area, including the Substation, the transmission line, and parts of the distribution lines.

The Project's transmission facilities consist of: (1) 1,800 feet of pipe-type cable from North Beacon Street south and east to the Substation via Parsons Street and Electric Avenue; and (2) 1,100 feet of the same type of pipe-type cable from the Substation north to Birmingham Parkway via North Beacon Street (Exhs. NSTAR-1, at 6; DPU-1-22(1); Tr. at 4). The pipe for the cable would be made of coated steel with an outside diameter of 5 5/8 inches (Exh. NSTAR-1, at 6). Each of the two new sections would have two manholes at each end for pulling and splicing cable (id. at 2, 6). These cable segments would bisect the existing 115 kV 282-520 and 282-522 lines, which currently connect both Waltham Substation and Watertown Substation through to Brighton Substation (Exh. DPU-1-9). The existing pipe-type cable between the two connection points would come out of service; the cable would be recycled or otherwise disposed of and the oil would be stored for later re-use (Exh. DPU-1-82).

Figure 1. Project Area



Source: RR-DPU-1(1)

Distribution installations would be located in approximately 16,500 linear feet of road, mostly along North Beacon Street, Parsons Street, and Faneuil Street and extending as far as Arsenal Street in Watertown and Market and Washington Streets and Oak Square in Brighton, consisting of 95,000 feet of cable in 30,000 linear feet of new duct banks (Exh. NSTAR-1, exh.4).

According to the Company, the Project is needed to serve significant load growth in an area including Watertown, Newton, Brighton, Allston, and the Longwood Medical Area

(Exh. NSTAR-1, at 8). The Company's conceptual grade cost estimate (-25%/+50%) for the Project is $120 million, including transmission, distribution, and Substation work (id., exh.7; Exh. DPU 1-62(1)). According to the Company, the required in-service date is June 1, 2015, to relieve other substations and to enable support for certain anticipated economic development projects (Exh. NSTAR-1, at 13). The latest schedule in the record would have Substation construction continuing from August 12, 2014, to June 28, 2016; with underground distribution cable construction running from August 20, 2014 to May 10, 2016; and the underground transmission cable construction encompassing the more limited period of August 20, 2014 to April 28, 2015 (Exhs. DPU-1-8; DPU-1-8(1)).

B. Procedural History

NSTAR filed its Petition with the Department on August 9, 2013. On October 3, 2013, the Department conducted a site visit in North Brighton followed by a duly-noticed public hearing at the Jackson/Mann Community Center, in Allston. No person or entity filed a petition to be admitted to these proceedings as a party or as a limited participant. The Company sponsored the following witnesses: (1) John Zicko, Manager of Substation Design Engineering; (2) Richard Zbikowski, Senior Planning Engineer; and (3) Kevin McCune, Licensing and Permitting Project Manager.

The Department conducted an evidentiary hearing at its offices in Boston on February 7, 2014. The evidentiary record of the proceeding, in addition to the Company's Petition and accompanying exhibits, includes the Company's responses to 118 information requests and three record requests. The Company filed a brief on February 27, 2014.

II. REQUEST FOR INDIVIDUAL ZONING EXEMPTIONS PURSUANT TO SECTION 6 OF CHAPTER 665 OF THE ACTS OF 1956

A. Standard of Review

The provisions of G.L. c. 40A do not apply to the City of Boston, although they do apply to other cities and towns in the Commonwealth. Emerson College v. City of Boston, 393 Mass. 303 (1984). However, by Special Act of the Legislature, Boston's Zoning Code is subject to the Department's authority for granting zoning exemptions to public service corporations in the same manner as G.L. c. 40A § 3 applies to other municipalities. Boston Edison Company, 14 DOMSB 233, at 392, n.91 (2005) ("NSTAR Stoughton-Boston"). Specifically, Section 6 of Chapter 665 of the Acts of 1956 provides that:

> A building, structure, or land used or to be used by a public service corporation may be exempted from the operation of a zoning regulation or amendment if, upon petition of the corporation, the [Department] shall, after public notice and hearing, decide that the present or proposed situation of the building, structure, or land in question is reasonably necessary for the convenience or welfare of the public.

In evaluating a company's petition for zoning relief pursuant to Section 6 of Chapter 665 of the Acts of 1956, the Department uses the same standard of review as has been established for G.L. c. 40A, § 3 petitions. Thus, a petitioner seeking exemption from a zoning bylaw under Chapter 665 of the Acts of 1956 must meet three criteria. First, the petitioner must qualify as a public service corporation. Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975) ("Save the Bay"). Second, the petitioner must demonstrate that the proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public. Massachusetts Electric Company, D.T.E. 01-77, at 4 (2002); Tennessee Gas Pipeline Company, D.T.E. 01-57, at 3-4 (2002). Third, the petitioner must establish that

it requires exemption from the zoning ordinance or bylaw. Boston Gas Company, D.T.E. 00-24, at 3 (2001).

1. Public Service Corporation

In determining whether a petitioner qualifies as a "public service corporation" ("PSC") for the purposes of G.L. c. 40A, § 3, the Massachusetts Supreme Judicial Court has stated:

> [A]mong the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided. Save the Bay at 680. See also D.T.E. 00-24, at 3-4; Berkshire Power Development, Inc., D.P.U. 96-104, at 26-36 (1997).

The Department interprets this list not as a test, but rather, as guidance to ensure that the intent of G.L. c. 40A, § 3, will be realized, i.e., that a present or proposed use of land or structure that is determined by the Department to be "reasonably necessary for the convenience or welfare of the public" not be foreclosed due to local opposition. See D.P.U. 96-104, at 30; Save the Bay at 685-686; Town of Truro v. Department of Public Utilities, 365 Mass. 407, at 410 (1974). The Department has interpreted the "pertinent considerations" as a "flexible set of criteria which allow the Department to respond to changes in the environment in which the industries it regulates operate and still provide for the public welfare." D.P.U. 96-104, at 30; see also Dispatch Communications of New England d/b/a Nextel Communications, Inc., D.P.U./D.T.E. 95-59-B/95-80/95-112/96-113, at 6 (1998). The Department has determined that it is not necessary for a petitioner to demonstrate the existence of "an appropriate franchise" in order to establish PSC status. D.P.U. 96-104, at 31.

2. Public Convenience and Welfare

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. Save the Bay, 366 Mass. at 680; Town of Truro, 365 Mass. at 410. Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make an] examination of the local and individual interests which might be affected." New York Central Railroad v. Department of Public Utilities, 347 Mass. 586, 592 (1964). When reviewing a petition for a zoning exemption under G.L. c. 40A, § 3, the Department is empowered and required to consider the public effects of the requested exemption in the state as a whole and upon the territory served by the applicant. Save the Bay, 366 Mass. at 685; New York Central Railroad, 347 Mass. at 592.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3, does not require the petitioner to demonstrate that its primary site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the primary site is reasonably necessary for the convenience or welfare of the public. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, 347 Mass. at 591.

Therefore, when making a determination as to whether a petitioner's present or proposed use is reasonably necessary for the public convenience or welfare, the Department

examines: (1) the present or proposed use and any alternatives or alternative sites identified; (2) the need for, or public benefits of, the present or proposed use; and (3) the environmental impacts or any other impacts of the present or proposed use. The Department then balances the interests of the general public against the local interest, and determines whether the present or proposed use of the land or structures is reasonably necessary for the convenience or welfare of the public. D.T.E. 00-24, at 2-6; D.T.E. 01-77, at 5-6; D.T.E. 01-57, at 5-6; Tennessee Gas Pipeline Company, D.T.E. 98-33, at 4-5 (1998).

3. Exemption Required

In determining whether exemption from a particular provision of a zoning bylaw is "required" for purposes of G.L. c. 40A, § 3, the Department makes a determination whether the exemption is necessary to allow construction or operation of the petitioner's project. See D.T.E. 01-77, at 4-5; D.T.E. 01-57, at 5; Western Massachusetts Electric Company, D.P.U./D.T.E. 99-35, at 4, 6-8 (1999); Tennessee Gas Company, D.P.U. 92-261, at 20-21 (1993). It is a petitioner's burden to identify the individual zoning provisions applicable to the project and then to establish on the record that exemption from each of those provisions is required:

> The Company is both in a better position to identify its needs, and has the responsibility to fully plead its own case . . . The Department fully expects that, henceforth, all public service corporations seeking exemptions under c. 40A, § 3 will identify fully and in a timely manner all exemptions that are necessary for the corporation to proceed with its proposed activities, so that the Department is provided ample opportunity to investigate the need for the required exemptions.

New York Cellular Geographic Service Area, Inc., D.P.U. 94-44, at 18 (1995).

B. Public Service Corporation Status

NSTAR is an electric company as defined by G.L. c. 164, § 1, and, as such, is a public service corporation. NSTAR Electric Company, D.P.U. 11-80, at 7 (2012). Accordingly, the Department finds that NSTAR qualifies as a public service corporation for the purposes of Chapter 665 of the Acts of 1956.

C. Public Convenience and Welfare

1. Need for or Public Benefit of Use

a. Existing Loads Approach the Firm Capacity of Area Substations

NSTAR stated that load in the area of Brighton, Allston, the Longwood Medical Area, Newton, and Watertown is approaching the firm capacity of the four substations serving this area (Exh. NSTAR-1, at 8).[2] The Company indicated that the four substations – Watertown, Colburn Street, Brighton, and Newton Highlands – serve the Allston, Brighton, Fenway, Symphony, Mission Hill, and Jamaica Plain neighborhoods of Boston, as well as all of Watertown, most of Brookline and Newton, part of Waltham, and additional customers in Needham and Wellesley (id. at 8-12; Exhs. DPU-1-20(1); DPU-1-85). Among these, Colburn Street Substation was built recently, in 2004-2005 (Exh. NSTAR-1, at 9). According to the Company, summer 2012 loadings on the four existing substations in the area, as a proportion of firm capacity (i.e., capacity following loss of the most critical input or transformer), were: Watertown, 93 percent; Colburn Street, 89 percent; Brighton, 74 percent;

[2] The firm capacity of a substation is based on the long-term emergency ("LTE") rating of its transformers with one transformer unavailable, or station performance with the loss of transmission line serving the substation, whichever value is lower (Exh. DPU 1-14).

and Newton Highlands, 89 percent (id. at 8-11). Capacities of these substations, and their respective recent loads, are shown in Table 1, below.

Table 1. Area Substation Capacities and 2012 Peak Loads

Substation	Transformers	Customers	Firm Capacity (MVA)	2012 Peak (MVA)
Watertown	Two, 75/100/125 MVA each (w/ LTE of 150 MVA)	37,600	150	139.9
Colburn St.	Four, 62.5 MVA each (w/ LTE of 75 MVA)	34,900	212	189.2
Brighton	Three: 90 MVA, 100 MVA, 112 MVA	35,400	190	141
Newton Highlands	Four, w/ a total of 275 MVA	22,200	185*	170.6

Source: Exh. NSTAR-1, at 8-12.
* The firm capacity of Newton Highlands Substation is limited by the line-out capacity of the 115 kV lines serving the station which, together with emergency switching capability, provides the indicated firm capacity of 185 MVA.

b. Significant Load Growth is Expected

NSTAR indicated that there has been and is expected to be continuing significant load growth in the area of Brighton, Allston, the Longwood Medical Area, Newton, and Watertown (Exh. NSTAR-1, at 8). The Company expects load served by the Watertown Substation (139.9 MVA in 2012, firm capacity 150 MVA) to grow 2.7 percent annually, with increased loads from an AT&T internet/data center in Watertown of nine to 20 MVA (id.). Colburn Street Substation load (189.2 MVA in 2012, firm capacity 212 MVA) is expected to grow 2.1 percent annually, with an additional 10 MVA from 2013-2014 developments at Beth Israel and Brigham and Women's hospitals and a Mass Eye and Ear facility in the Longwood

Medical Area, 5 MVA of additional load in 2013-2014 from a development complex at 1325 Boylston Street in the Fenway and, also in 2013-2014, redevelopment at Jackson Square in Roxbury (id. at 9; Exh. DPU-1-87). Brighton Substation load (141 MVA in 2012, firm capacity 190 MVA) is expected to grow 7.4 percent annually from 2013 to 2017, with planned developments by Boston University, Boston College, Harvard University, and New Balance Athletic Shoe, Inc. In addition, Harvard University may pursue plans to develop an area of Allston, which would require an additional 30 to 50 MVA of capacity (Exh. NSTAR-1, at 10-11). Newton Highlands Substation load (170.6 MVA in 2012, total capacity of 185 MVA) is expected to grow 5.5 percent annually, with an 8.5 to 18.5 MVA internet/data center expansion, commercial development by 2015 at Chestnut Hill Square along Route 9, and expansion at Boston College (id. at 11-12).

Overall, NSTAR's prediction for load growth in the area served by Watertown, Colburn Street, Brighton, and Newton Highlands Substations is 132 MVA by 2015 and up to 171 MVA by 2020 (id. at 36). If additional load materializes as forecast by the Company, load at Watertown and Colburn Street Substations would exceed firm capacity as early as 2014 and load at Newton Highlands would exceed firm capacity in 2015 (id. at 22). The Company maintains that there is a need for the Project to be completed by June 1, 2015 (id. at 13).

c. Benefit of the Proposed Project

The Project would bisect two existing 115 kV lines numbered 282-520 and 282-522, which run from Waltham Substation and Watertown Substation to Brighton Substation, resulting in four 115 kV connections to the Substation (Exh. DPU-1-9). With these four ties and three initial transformers, each with LTE ratings of 75 MVA, the Substation would have a

firm capacity of 150 MVA (representing capacity after a single contingency outage of one transformer) (Exhs. NSTAR-1, at 5; DPU-1-5). Connecting the proposed new distribution feeders to existing distribution lines in the area, the Company proposes to shift load from existing substations to the Substation as follows (Exh. NSTAR-1, at 32):

From Watertown Substation	50 MVA
From Colburn Street Substation	30 MVA
From Brighton Substation	50 MVA
From Newton Highlands Substation	10 MVA

NSTAR asserted that the Project would provide a long-term solution to local capacity because it would increase the area's capability by 150 MVA (id. at 33). This increase would allow existing equipment to operate within normal loading parameters once the Project is completed (id. at 32). The Company estimated that the Project can be completed by June 28, 2016 (Exh. DPU-1-84). NSTAR stated that the additional capacity would support anticipated load growth into the mid-to-late 2020s (Exhs. NSTAR-1, at 34; DPU-1-90). The Company also indicated that the Project would reduce the average physical length of distribution feeders in the immediate area, which would provide an improvement in service reliability (Exh. NSTAR-1, at 33). Further, the Company stated that the Project would enable the addition of 14 kV feeders that would allow for completion of the conversion in Brookline from the older 4 kV local distribution service (id. at 31, 34).

NSTAR indicated that a further benefit of the Project is the addition of switches within the 115 kV transmission lines between Waltham and Brighton Stations (Exh. DPU-1-9;

Tr. at 18-23). According to the Company, the ability to isolate parts of these 115 kV lines helps to address some overloads following regional N-1 and N-1-1 contingencies[3] that would otherwise have the potential to impair service to the Greater Boston load pocket, depending on generator dispatch and other factors (Exh. DPU-1-17; Tr. at 18-23).

d. Analysis and Findings

The evidence described above shows that large development projects in Boston neighborhoods west of downtown, in Watertown, and at Chestnut Hill – including new commercial projects, expansion at medical and educational facilities, and data centers – would require a significant increase in deliverable electric power. The identified projects that are either anticipated or already under construction would, in combination, exceed the capacity of area substations by (or before) June 2015. On this basis, the Department finds that there is a need for the Project, and that by meeting this need and providing other electric system benefits, the construction and operation of the Project would result in public benefits.

2. Alternatives Explored

a. Description

NSTAR evaluated the potential to meet the need for additional resources using alternatives including installation of additional 115 kV/14 kV transformation at two locations ("two-substation alternative") instead of at one new location, energy efficiency ("EE"), demand response ("DR") and distributed generation ("DG") (Exh. NSTAR-1, at 33).

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[3] An N-1 contingency is a circumstance in which there is an unexpected fault or loss of a single electric element. An N-1-1 transmission consists of the loss of such an element, followed by non-simultaneous loss of an additional element.

The Company examined a two-substation alternative in which two existing NSTAR sites would be expanded with the addition of 115/14 kV transformers. Two transformers would be installed at the existing Allston Station 36 on Commonwealth Avenue in Allston and two transformers would be installed at an existing substation on Boylston Street in Brookline called PNU 25 (id. at 36). The Company stated that the available land at both locations is limited so that only 75 MVA of firm capacity could be installed at each site (id. at 37). With a total of four transformers, the two-substation alternative, like the Project, would provide the needed 150 MVA increase in regional capacity (id. at 36). As with the Project, load from the Brighton and Colburn Street Substations would be reduced by transfer to the alternative facilities (id. at 37). Load also could be transferred from Watertown Substation by the installation of what the Company characterized as very long underground feeders from Allston Station 36 and Brookline PNU 25 (id.).

The Company maintains that the two-substation alternative would be inferior to the Project in several ways. Distribution lines needed to relieve load from Watertown Substation would be several miles long, potentially introducing voltage regulation issues at Watertown Substation (id.). Also, NSTAR contends that there would not be space available for an additional transformer, while the Project site has ample space (id.). According to NSTAR, the two-substation alternative locations are not along the Waltham to Brighton 115 kV corridors, so such an alternative project would not provide the switching abilities afforded by the Project, and therefore would not contribute to solving the transmission line contingency issues affecting the region (Tr. at 23).

NSTAR suggests that the two-substation alternative would have greater community impacts because the aboveground locations for the two-substation alternative are largely residential (compared to the commercial/industrial uses immediately adjacent to the Project), and because approximately 27,000 linear feet of road would be affected (versus 16,500 linear feet of road for the Project) (Exhs. NSTAR-1, at 39-43; DPU-1-18). Finally, the two-substation alternative is estimated to cost $131.2 million, or about $11 million more than the Project (Exh. NSTAR-1, at 36-37).

NSTAR stated that it offers EE programs to the commercial and industrial ("C&I"), residential, and low-income sectors (id. at 35). However, the Company asserts that EE programs would not be able to provide the magnitude and timing of load reductions in the appropriate locations to meet the need for the Project (Exh. NSTAR-1, at 35). The Company stated that over a span of five years, EE had reduced growth in summer peak loads in the area served by the Watertown, Colburn Street, Brighton, and Newton Highlands Substations by a cumulative total of five MW (Exh. DPU-1-96). With respect to real-time DR, the Company stated that is not aware of any real-time DR resources responsive within 30 minutes in this area (id.; Exh. NSTAR-1, at 35). With respect to DG, the Company stated that it has received 21 applications to interconnect DG in the Newton-Watertown-Brighton area, with a total anticipated output of 1.757 MW (Exh. NSTAR-1, at 36). Considering this total compared to projected loads, the Company concluded that DG would be ineffective in serving load requirements (id.).

b. Analysis

The evidence described above shows that compared to the Project, the two-substation alternative would involve construction in almost two more miles of street, would not provide the reliability benefit of sectionalizing the Waltham to Brighton 115 kV line, would result in longer feeders serving load areas, and could potentially cost an additional $11 million. The evidence described above also shows that EE, DR, and DG would be insufficient to supply the large incremental loads associated with development projects planned and under way in Allston/Brighton and surrounding communities. Nonetheless, NSTAR should strongly encourage its customers, both existing and new, to take full advantage of its energy efficiency programs. This is of particular concern for large C&I customers, especially in areas where their load requirements directly contribute to the need for system upgrades, but our observation in this regard applies to all customers.

Accordingly, the Department finds that the Company's decision to pursue the Project rather than the alternatives is reasonable.

3. Impacts of the Proposed Use

In accordance with its statutory responsibility to consider the general public interest and welfare, the Department examines the impacts associated with construction and operation of the Substation to identify those of significance that may occur during construction and operation. This section includes evaluation of the impacts of construction and operation of transmission and distribution lines that are part of the Project.

NSTAR stated it expects construction to last one to one-and-one-half weeks at most street locations, with a total construction time of 16 months for the entire Project (Exh. DPU-

1-4). Work at splice locations could take several weeks (id.). The hours of construction in streets would depend on direction from the Boston and Watertown traffic management agencies (id.). The Company would notify the police and direct abutters along the transmission line of upcoming scheduled construction by a combination of mail, e-mail, telephone, and door-to-door outreach (Exh. DPU-1-2). Construction at the Substation site would occur six days per week, from 7:00 a.m. to 6:00 p.m. over the course of 16 months, with continuous work being required for filling transformers (id.; Exh. DPU-1-6).

For the in-street construction, crews would work in sequence, beginning with marking of existing utilities by DigSafe, cutting pavement, and excavation of pavement and soil (Exh. DPU-1-81). Next, pipe would be laid, with steel for 115 kV and plastic ductwork for 14 kV circuits (id.). Following this, the trench would be backfilled and repaved (id.). Typically, the sequence would operate along 200 feet of street at any particular time, such that work would continue for approximately a week and a half at any one location (id.; Exh. DPU-1-4). The Company would place steel plates over the trench once construction is concluded for the day (Exh. DPU-1-81).

a. Land Use Resources

The Substation site, now owned by NSTAR, was previously a truck body installation shop. NSTAR has razed the former buildings and the site is now cleared (Exhs. NSTAR-1, at 47; DPU-1-23). The site is located next to MBTA tracks, an auto repair facility, and public streets (Exhs. NSTAR-1, at 47; DPU-1-22(1)). Across the streets and train tracks are the Mass Turnpike and additional industrial/commercial facilities (Exh. DPU-1-22(1)). The

closest residences are 215 feet to the southwest,[4] 350 feet to the south, and 265 feet to the east (Exhs. DPU-1-105; DPU-1-105(1)). The transmission and distribution lines to be constructed for the Project would be located beneath paved roadways in areas that are primarily residential (with some commercial properties), as well as under streets intersected by an overpass for the Massachusetts Turnpike and MBTA commuter rail rights of way, under the edge of the Birmingham Parkway, and on the underside of a bridge crossing over the Charles River to Watertown (Exhs. NSTAR-1, at 47 and exh.10, at 2; DPU-1-79(1)). The transmission line routes pass by eleven residential units, while the distribution line routes run past a total of 580 residential units (Exh. NSTAR-1, at 47).

The Company stated that there are no recorded historic or archeological resources within the Substation site or in the vicinity of the transmission lines (id. at 51). The distribution lines would go by 19 buildings inventoried by the Massachusetts Historical Commission, but none listed in the state or national registers (id.). There is virtually no vegetation at the Substation site to be disturbed, as a result of its prior industrial use (Exh. DPU-1-105(1)). Further, the Company stated that there are no areas of either Priority or Estimated Habitat of State-listed Rare or Endangered Species in the vicinity of the Substation site, according to Natural Heritage and Endangered Species Program mapping available from Massachusetts Geographic Information System ("MassGIS") (Exh. DPU-1-108).

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[4] There is a commercial facility located between the Substation site and these closest residences, as shown above in Figure 1.

b. Visual Impacts

The new equipment and structures within the Substation would have the following heights: fixtures on top of transformers, 20 feet; walls between transformers, 25 feet; the shed roof above the transformers, 34 feet; switchgear, twelve to 15 feet; control house, 13 feet; and boundary fence and pillars, seven and eight feet (Exhs. DPU-1-54; DPU-1-55; DPU-1-107). Some or all of these features would be visible at least from the upper floors of the closest residences, and from the MBTA commuter rail and Mass Turnpike (Exh. DPU-1-106). Facility lighting would be turned on only when needed and would be downward-facing with the exception of lighting to illuminate electrical buses in the transformer area only (Exh. DPU-1-53). Low plantings selected for an ability to survive in an urban environment would be installed along the boundary fence, along with eight-foot tall decorative brick pillars, as recommended by the Boston Redevelopment Authority (Exhs. NSTAR-1, at 48; DPU-1-54; DPU-1-56).

c. Traffic

The Company stated that during Substation construction, construction vehicles would be located within the property boundary (Exh. NSTAR-1, at 49). Up to 20 people would be working at the Substation (Exh. DPU-1-3). During operation of the completed Substation, the Company anticipates performing weekly surveillance visits, with no appreciable traffic-related impacts (Exh. NSTAR-1, at 49).

Construction of the underground transmission and distribution lines would have more extensive traffic impacts. The Company stated that it would develop a Traffic Management Plan "as appropriate," and in consultation with the Boston Transportation Department and the

Town of Watertown (id. at 50). NSTAR would hire a registered engineer with experience working in the City of Boston to prepare temporary traffic control plans in conformance with federal, state, and local standards (Exh. DPU-1-99). The Company anticipates that in order to minimize traffic impacts in the streets north of the Mass Turnpike, the Massachusetts Department of Transportation ("MassDOT"), the Massachusetts Department of Conservation and Recreation ("DCR"), and the municipal agencies would prohibit work in these areas during peak traffic hours, but potentially allow work afterwards, during evening hours (Exhs. DPU-1-29; DPU-1-100).

Neighbors at the public hearing on October 23, 2013, expressed particular interest in whether area parking would be reduced during the construction period, and what mitigation would be available. According to the Company, it has been able to work with neighbors of similar projects in Boston to help mitigate the temporary loss of parking (Tr. at 52-54). Also, the construction trench would be covered with steel plates at the end of the workday, which according to the Company, would allow for overnight parking (id.).

d. Noise Impacts

NSTAR proposes to minimize the length of the Project construction period by using a six-day per week schedule, generally from 7:00 a.m. to 6:00 p.m., but increasing as longer periods of daylight allow (Exh. NSTAR-1, exh.10, at 1). The City of Boston Municipal Code allows building-related construction activities to occur from 7:00 a.m. to 6:00 p.m. on weekdays; the Company would petition Boston's Inspectional Services Department ("ISD") for

a permit for Saturday work (Exh. DPU-1-67).[5] The Company indicates that it would reduce Saturday morning disturbance by postponing the operation of equipment one-half hour after a 7:00 a.m. crew arrival (Exh. DPU-1-5). Activities such as filling transformers with oil, splicing cables, and activities requiring outages of operational lines, may require work to be performed outside of those hours (id.; Exhs. NSTAR-1, exh.12, at 18; DPU-1-6). The Company stated that limiting construction to 8:00 a.m. to 6:00 p.m., Monday through Friday, would reduce flexibility and would have a negative impact on an already compressed construction schedule (Exhs. DPU-1-101; DPU-1-102; DPU-1-103).

The Company provided maximum noise levels for various types of equipment that would be used during construction. Typical maximum sound levels from construction equipment at a reference distance of 50 feet would range between 71 A-weighted decibels ("dBA") for pumps to 98 dBA for jack hammers and rock drills (Exh. NSTAR-1, exh.12, at 19). The City of Boston under its Air Pollution Control Commission limits L_{10}[6] construction noise to 85 dBA at an affected industrial property, 80 dBA at a commercial or recreational property, and 75 dBA at a residential property (id., exh.12, at 9). NSTAR acknowledged that despite its best efforts, there may be times when the City's noise limits are exceeded (Exh. DPU-1-35). The Company stated that if it receives complaints of excessive noise, it will

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[5] The Boston Municipal Code, Section 16-26.5, limits nighttime construction noise from the Substation to 50 dBA at residential lot lines between the hours of 6:00 p.m. and 7:00 a.m. (Exh. NSTAR-1, exh.12, at 9).

[6] An L_{10} sound level is the level that is exceeded during ten percent of a measurement period (i.e., ambient sound is louder only ten percent of the time period). The parameter includes all but the short-term or sporadically increased noises.

measure noise levels and address any exceedance of City of Boston ordinances. Measures could include installing temporary barriers around the work zone or using equipment with lower noise ratings (Exh. DPU-1-40).

Substation transformers would produce continuous noise once the facility is in operation (Exh. NSTAR-1, at 49). Local ambient sound levels were measured three times during periods from midnight to 2:00 a.m. and from 6:00 a.m. to 8:00 a.m. in March 2013 at five locations near the Substation site including residential areas. This monitoring found that L_{90}[7] sound levels near the Substation site ranged from 46 to 67 dBA, with the lowest ambient levels measured from midnight to 2:00 a.m. (id., exh.12, at 10-16). Highway traffic noise was noted by sound technicians at each location for each of the periods (id., exh.12, at 13). The new transformers would have advanced noise attenuation features, and are predicted to have noise levels at the same locations of 18 to 34 dBA (id., exh.12, at 15; Exh. DPU 1-36). Due to the high ambient noise levels, the noise modeling shows that the new transformers would increase ambient noise levels by less than one dBA at the modeled locations (Exhs. NSTAR-1, at 49 and exh.12, at 15). Additionally, the Company indicated that operation of the proposed transformer would not cause any "pure tones" as defined by the Massachusetts Department of Environmental Protection ("MassDEP") noise policy (id., exh.12, at 16).[8]

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[7] An L_{90} sound level is the level that is exceeded during 90 percent of a measurement period (i.e., ambient sound is quieter only ten percent of the time period). The parameter represents background noise excluding most or all periodic or intermittent noises.

[8] MassDEP states that a pure tone condition exists where any one octave band sound pressure level exceeds the two adjacent frequency bands by three dBA or more.

e. Air Impacts

NSTAR would mitigate construction air impacts by using only ultra-low sulfur diesel fuel in its diesel-powered construction equipment and by limiting vehicle idling to five minutes, excepting vehicles being serviced, vehicles making deliveries that need to keep their engines running, and vehicles that need to run their engines to power accessories (Exh. NSTAR-1, at 49) [in accordance with 310 CMR 7.11(1)(b) (Exh. AMD-3, at 6)].[9] The Company stated it is 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 (id.).

Sulfur hexafluoride ("SF_6") gas has been identified as a non-toxic but highly potent greenhouse gas ("GHG").[10,11] NSTAR reported a calendar year 2012 nameplate capacity of 94,256 pounds in Massachusetts, and emissions of 1,360 pounds of SF_6, for a leakage rate of

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9 The Company stated specifically that it would allow idling when vehicles are being used to power hydraulics, electric tools, or warning lights, or when running the engine is necessary for a repair of a vehicle (Exh. DPU-1-45).

10 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.

11 Massachusetts Clean Energy and Climate Plan issued by the Secretary of Energy and Environmental Affairs on December 29, 2010 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. Reduction of an amount of SF_6 equivalent to a reduction of 0.2 million metric tons of CO_2 is one of the policies set forth in the Plan. See G.L. c. 21N and the Massachusetts Clean Energy and Climate Plan.

1.44 percent (Exh. DPU-1-44). The Substation design is not complete, but the Company estimates that the 115 kV switching equipment would contain approximately 6,500 pounds of SF_6 in gas-insulated switchgear (id.). The Company reported that the new equipment would be designed for an emission rate of less than 0.1 percent per year (id.).[12, 13] The Company reports to the U.S. Environmental Protection Agency's SF_6 Emissions Reductions Partnership for Electric Power Systems (id.).

f. Rodent Control

Residents inquired about rodent control at the October 3, 2013 public hearing. The Company stated that it would file a rodent control plan with the City of Boston (Exh. DPU-1-52). Exterminators would identify conditions and areas conducive to rodent activity and make recommendations of actions to mitigate such conditions, such as setting baited traps around the perimeter of the Substation site, and the City of Boston would determine whether the Company's plan for rodent control is suitable (id.; DPU-1-112).

g. Magnetic Fields

The Company modeled magnetic fields from Project operation, assuming peak loads (Exh. DPU-1-57(1), at 11). According to the Company, the steel pipes enclosing the three

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12 For context, the 0.1 percent leakage rate would equal emissions of about 6.5 pounds of SF_6 per year, which is the GHG-equivalent of 77.675 tons of CO_2 (the annual CO_2 emissions of about 20 average passenger vehicles).

13 In April 2014, MassDEP promulgated final regulations that require companies to purchase new gas-insulated switchgear with a manufacturer's guaranteed SF_6 emission rate of one percent or less. The new regulations also include requirements for maintenance and handling of SF_6, and require that NSTAR and National Grid comply with a declining SF_6 emission rate standard by 2020 (see 310 CMR 7.72).

phase transmission conductors reduce magnetic fields by a factor of 25 to 30, compared to an arrangement without the steel pipes (id. at 12). The modeling showed the highest magnetic field levels outside the Substation would be above a distribution line duct bank in Electric Avenue, with a maximum value three feet above the ground of 32.1 milligauss ("mG") located above a cluster of distribution lines. The highest level in Parsons Avenue would be 21.2 mG (id. at 14-18). The Company contends that further mitigation, such as greater cable burial depths, would be costly and not warranted (Exh. DPU-1-109).

h. Site Contamination Issues

NSTAR stated that the property had been used for assembly of truck bodies and that when it acquired the site in 2010 it included buildings constructed during the 1920s and 1930s, as well as underground storage tanks (Exh. DPU-1-23). The Company stated that the site has been designated by the MassDEP for brownfields eligibility (id.). The site was listed by MassDEP under the Massachusetts Contingency Plan ("MCP") due to the presence of separate phase hydrocarbons in the soil and groundwater, following earlier releases of hydraulic fluid (id.). The Company removed approximately 10,000 gallons of separate phase hydrocarbons from the site and added oil-degrading microbes to the soil (id.). A Class A-2 Response Action Outcome was submitted to MassDEP for most of the site in November 2013 (id.).[14] According to the Company, a small area of contamination in the southeast corner of the lot is too close to

[14] A Class A-2 Remedial Action Outcome applies to a site under the Massachusetts Contingency Plan when a permanent solution has been achieved, the level of oil and hazardous material in the environment has not been reduced to background, and one or more Activity and Use Limitations are not required to maintain a level of No Significant Risk. 310 CMR 40.1036.

a structure on the abutting property to excavate, and the Company is using a belt skimmer to extract the remaining oil (id.). The Company stated that Substation construction would not interfere with this final element of site cleanup, and it estimated that MassDEP's evaluation of potential site remediation requirements can be "closed" under the MCP in 2014 (id.).

i. Public Safety

NSTAR stated that it would build the proposed project consistent with requirements and standards of the American National Standards Institute ("ANSI"), the Occupational Safety and Health Administration ("OSHA"), and the National Electrical Safety Code (Exhs. NSTAR-1, at 50; DPU-1-27). NSTAR would design underground transmission and distribution system elements to provide minimum clearances (including minimum depths) with provisions for the ability to work underground in manholes and at riser sections within the Substation (Exh. NSTAR-1, at 73). OSHA work plans would be in place as required during construction (id.). The Company stated that it would work closely with local public safety personnel throughout the construction process to ensure the safety of the public (Exhs. DPU-1-2; DPU-1-27).

The Company stated that marking tape and concrete caps would be installed to reduce the risk of inadvertent dig-ins by third-party contractors following cable installation (Exh. NSTAR-1, at 73). The underground cables would have provisions for electrical protection in which power flow would trip off in the event of cable or splice failure (id.). In addition, provisions would be made to allow for switching, tagging, and grounding of the line for worker safety during maintenance or repair of the line (id.).

j. Analysis and Findings

The proposed Substation is reasonably compatible with the surrounding light industrial, commercial, and transportation land uses. Visually, the Substation would have an industrial appearance, with the highest point being a shed roof placed against the slope up to the adjoining MBTA and Mass Turnpike. The facility would normally be unlit. Following the request of the City of Boston, the Substation would have decorative brick pillars along the site security fence. In addition, the Company would install hardy vegetation along the street edge of the Substation.

In order to ensure that that information about construction and operation of the Project is disseminated to the community, the Department directs the Company to develop a community outreach plan for the Project's construction and operation. This outreach plan should, at a minimum, lay out procedures for providing prior notification to affected residents of: (1) the scheduled start, duration, and hours of construction near their homes; (2) any construction the Company intends to conduct that must take place outside normal hours near their homes; (3) any operation the Company intends to conduct that could result in unexpected community impacts due to unusual circumstances; and (4) complaint and response procedures, including contact information.

NSTAR proposes to use a six-day per week Project construction schedule, generally from 7:00 a.m. to 6:00 p.m. As noted by the Company, it would also seek a permit from the City of Boston ISD for Saturday work hours. To allow the Project to proceed expeditiously, without undue noise and traffic impacts to the surrounding community, the Department approves construction from 7:00 a.m. to 6:00 p.m. Monday – Friday and, with approval of

ISD, from 9:00 am to 5:00 p.m. on Saturdays, excepting public holidays. Should the Company need to extend construction work beyond those hours and days, the Company is directed to seek written permission from the relevant Boston or Watertown authorities prior to the commencement of such work and to provide the Department with a copy of such permission. If the Company and city or town officials are not able to agree on whether such extended construction hours should occur, the Company may request prior authorization from the Department. The Company shall provide the City of Boston and/or Town of Watertown with a copy of any such request. Construction hours prescribed in the paragraph may be further limited by the Traffic Management Plans described in section II.C.3.c, above.

To assist residents with substitute parking, the Company would attempt to identify alternative parking locations during Project construction. The Department directs the Company to provide information on alternative parking locations for neighbors as part of its community outreach. In order to mitigate adverse parking impacts from Substation construction, the Company shall provide to the Department a plan for Substation construction worker parking that would avoid residential streets.

With regard to noise, the potential Project noise impacts consist of construction and operational noise. For the installation of transmission and distribution lines, the Company would be doing typical in-street construction, which can be noisy for area residents given the proximity of residences. Construction of the Substation itself is farther from residential receptors, but the construction activity would continue for a longer period of time, at a single location. For these reasons, the Department directs the Company to minimize construction

noise by using best construction practices (e.g., use of well-maintained mufflers), by constructing elements off site as much as is feasible, and by using the smallest size of construction equipment appropriate for Project tasks, and, further, to report to the Department any noise complaints and their resolution. Additionally, the Department directs the Company to comply with City of Boston restrictions on noise emitted from construction sites, or to obtain the necessary waivers therefrom. Operational noise is not expected to be significant, due to the low-noise transformers that would be selected and the relatively high level of ambient noise at the Substation location.

Air emissions associated with the Project include exhaust from construction equipment and fugitive emissions of SF_6 over time from Substation equipment. The Project is subject to idling restrictions imposed by MassDEP, and the Company has agreed that 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 would be retrofitted. In terms of mitigation of construction air impacts, consistent with recent Department and Siting Board requirements, the Department directs the Company to limit vehicle idling to five minutes pursuant to state regulations, and retrofit 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. NSTAR Electric Company, D.P.U. 13-64, at 24-25 (2014); New England Power Company d/b/a National Grid, D.P.U 12-02, at 26-27 2012); New England Power Company, D.P.U. 10-77, at 37 (2011).

NSTAR is subject to U.S. Environmental Protection Agency reporting and MassDEP statewide limits for SF_6 emissions. NSTAR has proposed installing circuit breakers at the new Substation with a design annual SF_6 leakage rate of less than 0.1 percent. In addition, the

Department directs NSTAR to inform the Department if it adds SF_6 to any equipment at the new Substation or replaces any equipment at the new Substation due to SF_6 loss within five years of the completion and initial operation of the Project, after which time the Company will consult with the Department to determine whether the Department will require continuing reporting, as deemed appropriate.

Additional issues that may be of concern to residents include rodent control, minimization of magnetic fields, and completion of the cleanup of contaminants from the site. The Company has indicated that it would work with the City of Boston to address rodent control at the Substation site. Magnetic fields from the transmission lines would be minimized by enclosure in steel ducts and by burial at an appropriate depth. To document completion of site cleanup, the Department directs the Company to file with the Department notice that a permanent Response Action Outcome has been achieved for the entire site, under the MCP, when the final Response Action Outcome is filed with MassDEP.

The Department concludes that with the Project's compliance with: (1) all applicable federal, state, and local laws and regulations; (2) the avoidance, minimization and mitigation measures that NSTAR has stated it will implement during Project construction; and (3) the Department's conditions as discussed above and set forth blow, the impacts of the Project will be minimized.

4. Conclusion on Public Convenience and Welfare

Based on the foregoing analysis of: (1) need for or public benefit of use; (2) alternatives explored; and (3) impacts of the proposed use, the Department finds that the

benefits of the Project exceed adverse local impacts and, thus, that the proposed use is reasonably necessary for the public convenience or welfare.

D. Exemptions Required

1. Introduction

The Company is seeking two individual exemptions as well as a comprehensive exemption from the Boston Zoning Code (Exh. NSTAR-1, at 54-57). NSTAR asserted that the construction and operation of certain components of the Project may be construed to be inconsistent with certain provisions in the Zoning Code (id. at 54). The Company is seeking zoning relief from the Department because, according to the Company, the Project is needed immediately (id.).

2. Individual Exemptions

a. The Company's Position

In addition to the general reasons cited above, Table 2, below, summarizes the provisions of the zoning code from which the Company seeks exemptions, the relief available from the City, and the Company's argument as to why the Project cannot comply with the identified zoning provisions.

Table 2. Company Position: Boston Zoning Code Exemptions

Individual Zoning Exemption Requested	**Available Relief from Boston**	**Why Project Cannot Comply: Company's Position**
Article 51, Table B, Footnote 5	Conditional Use Permit	There is legal uncertainty and the potential for adverse interpretations, delay, burden and undue expense associated with the subjective nature of the conditions that must be met to obtain the relevant conditional use permit (Company Brief at 31).
Article 51 Section 51-21	Use Variance	It is difficult, if not impossible, to demonstrate the existence of unique conditions relating to soil, shape or topography of a particular parcel of land or structure. Moreover, variances are a legally disfavored form of relief, and even if granted, can be susceptible to appeal (Company Brief at 33).

b. Analysis and Finding

According to Table B of Article 51, substations are allowed as-of-right in the Goodenough Street Local Industrial Subdistrict (Exh. NSTAR-1, at 54-55). However, Footnote 5 contains a proviso stating that where such use is located in an area where residential uses are existing, the use is conditional, meaning that a conditional use permit would be required from the Board of Appeal of the City of Boston. According to the Company, it is unclear whether it would be able to meet the five conditions of obtaining a conditional use permit, which are: (1) the specific site is an appropriate location for such use; (2) the use will not adversely affect the neighborhood; (3) there will be no serious hazard to vehicles or pedestrians from the use; (4) no nuisance will be created by the use; and (5) adequate and

appropriate facilities will be provided for the proper operation of the use (Exh. NSTAR-1, at 55-56).

The Department concurs with the Company that the acquisition of a conditional use permit involves legal uncertainty and could delay or jeopardize the Project. Obtaining a conditional use permit may be uncertain given the requirement that the Substation not "adversely affect the neighborhood." The conditions included in this Order are intended to mitigate adverse impacts to the surrounding neighborhood – which should satisfy the requirements for issuance of the conditional use permit. Nevertheless, the determination by the City of Boston regarding this permit is inherently a subjective one, and issuance of the permit is not assured. Accordingly, the Department finds that the Company requires exemption from Article 51, Table B, Footnote 5 of the Boston Zoning Code.

Section 51-21 of Article 51 provides that the following effects shall not be allowed from any use within a Local Industrial Subdistrict: (1) any emission of any air, water, or other pollutants or of radiation or any release of toxic or biohazardous material in violation of federal, state, or local standards or regulations; and (2) any noise, air pollutant, vibration, dust, odor, change of temperature, or direct glare of lighting, which emanates more than 50 feet beyond the boundaries of the lot upon which the use is located (or more than 20 feet if the abutting lot into which such emanation occurs is within a Residential Subdistrict), is detectable at such distance by human senses without aid of instruments, and is of sufficient quantity or duration to cause significant annoyance or interference with normal activities (Exh. NSTAR-1, at 56-57).

NSTAR maintains that the Building Commissioner could opine that the Project would violate this provision because EMF and sound may be produced by the Project beyond levels contemplated by the Zoning Code (Company Brief at 32). As a result, a variance would be required to comply with this provision. NSTAR contends that variances are a legally disfavored form of relief, and even if granted, can be susceptible to appeal (Company Brief at 33). Accordingly, the Company seeks an exemption from Section 51-21 because of the legal uncertainty in obtaining variances, and the potential for adverse interpretations, delay, burden and undue expense associated with the permitting process and appeals therefrom (id.).

The Department notes that currently there are no federal, state, or local standards or regulations that govern acceptable magnetic field levels in the context of the proposed Project. To the extent that such regulations are properly promulgated and established by law at some time in the future, NSTAR would be subject to them independent of the provisions of the Boston Zoning Code.

The regulation of noise falls within the responsibilities of MassDEP, the City of Boston Air Pollution Control Commission, and the Boston Inspectional Services Department, Chapter 16, § 26) (Exh. NSTAR-1, exh.12, at 7). Section 51-21 also governs noise issues in Boston (Exh. NSTAR-1, exh.12, at 9).

Regarding these four different noise regulatory standards, NSTAR maintains that it should receive an exemption from Section 51-21 for essentially two reasons: (1) the standards are subjective and not necessarily subject to measurement; and (2) variances are a legally disfavored form of relief, and even if granted, can be susceptible to appeal (Exh. DPU-1-76;

Company Brief at 33). As described above, Section 51-21 regulates not only the nature and characteristics of the facility to be constructed, but also the on-going operation of the proposed facility. The City's ability to regulate air pollutants, vibration, dust, odor, etc. by using its zoning authority appears to be confined to Section 51-21. Were the Department to grant an exemption from Section 51-21, the City of Boston could not exercise local control over the on-going operation of the proposed facility with respect to environmental considerations covered by Section 51-21. NSTAR Electric Company, D.P.U. 13-64, at 32 (2014); Tennessee Gas Pipeline Company, D.P.U. 11-26, at 28-29 (2013); New England Power Company Amesbury, D.P.U. 09-27/09-28, at 52-53 (2010); NSTAR Electric Company, at 100 (2012); Braintree Electric Light Department, 16 DOMSB at 186-187 (2008).

Although the Department grants the requests for zoning exemptions to facilitate construction and avoid unnecessary delay or adverse zoning outcomes, the Department believes that once such facilities are operational they should comply with local environmental performance requirements, such as those included in Section 51-21.

Accordingly, the Department finds that with the exception of the operational requirements included in Section 51-21, NSTAR has demonstrated that the requested zoning exemptions listed above in Table 2 are required pursuant to Section 6 of Chapter 665 of the Acts of 1956.

3. Consultation with Municipality

a. Introduction

NSTAR met with a number of different City of Boston representatives on multiple occasions (Exh. DPU-1-74). The Company also undertook an extensive community outreach

plan that includes not only city and state officials, but also a wide cross section of individual residents, organizations and businesses in the neighborhood of the Project (Exh. NSTAR-1, at 60-61). With respect to the Company's request for individual and comprehensive zoning exemptions, the Company met on multiple occasions with representatives of Boston's ISD (id. at 15-17; Exh. DPU-1-74).

The City of Boston did not seek to intervene in this proceeding. ISD Commissioner Bryan Glascock provided a letter expressing the City's support for the Department's approval of individual and comprehensive zoning exemptions to the Company (Exh. NSTAR-1, exh.15).

b. Analysis and Findings

The Department continues to favor the resolution of local issues on a local level whenever possible to reduce concern regarding any intrusion on home rule. Russell Biomass LLC/Western Massachusetts Electric Company, EFSB 07-4/D.P.U. 07-35/07-36, at 60-65 (2009). The Department believes that it is important for applicants to consult with local officials regarding their projects before seeking zoning exemptions pursuant to G.L. c. 40A, § 3. See Barnstable at 34; Westborough at 33-34. Thereafter, the Department makes decisions about zoning exemptions with attention to the details of the particular case and to the importance of not intruding on home rule.

In this case, prior to seeking zoning relief from the Department, the Company had contact with various Boston authorities regarding the Project. The record shows that Boston supports both individual and comprehensive exemption from the Boston Zoning Code. Consequently, we find that the Company made a good faith effort to consult with municipal

authorities and that the Company's communications were consistent with the spirit and intent of Russell.

4. Conclusion on Request for Individual Zoning Exemptions

As described above, the Department finds that: (1) NSTAR is a public service corporation; (2) the proposed use is reasonably necessary for the public convenience or welfare; and (3) the specifically requested zoning exemptions, as limited above, are required for purposes of Section 6 of Chapter 665 of the Acts of 1956. Additionally, we find that the Company engaged in good faith consultations with the City of Boston. Accordingly, we grant the Company's request for the individual zoning exemptions listed above in Table 2, with the exceptions noted herein.

III. REQUEST FOR A COMPREHENSIVE EXEMPTION

A. Standard of Review

The Department has granted requests for a comprehensive zoning exemption on a case-by-case basis. NSTAR Electric Company, D.P.U. 07-60/07-61, at 50-51 (2008), citing Princeton Municipal Light Department, D.T.E./D.P.U. 06-11, at 37 (2007); NSTAR Electric Company, D.T.E./D.P.U. 07-9/07-10, at 37 (2007). The Department will not consider the number of exemptions required as a sole basis for granting a comprehensive exemption. Princeton at 37 (2007). Rather, the Department will consider a request for comprehensive zoning relief only when issuance of a comprehensive exemption would avoid substantial public harm. Id.; see also NSTAR Electric Company, D.P.U. 07-60/07-61, at 51-52 (2008).

B. The Company's Position

In addition to the individual exemptions discussed above, NSTAR also requests a comprehensive exemption from the Boston Zoning Code (Company Brief at 35). The Company asserted that granting a comprehensive exemption is appropriate because the Project is "necessary immediately for system reliability" since load growth in the area is increasing at a rate that would soon force equipment (i.e., transformers and associated lines) to operate beyond its capabilities during a contingency that occurs on peak load (id.). Additionally, the Company notes Boston's support for the granting of such an exemption (Company Brief at 36, *citing* Exh. DPU-1-74). In short, NSTAR asserts that a comprehensive zoning exemption would ensure "the timely construction of this important [p]roject" (Company Brief at 36).

C. Analysis and Findings

The grant of a comprehensive exemption is based on the specifics of each case. Compared to the grant of individual zoning exemptions, which is tailored to meet the construction requirements of a particular project, the grant of a comprehensive exemption serves to nullify a municipality's zoning code in its entirety with respect to the project under review. Thus, compared to the grant of individual zoning exemptions, a comprehensive zoning exemption constitutes a broader incursion upon municipal home rule authority. In the absence of a showing that substantial public harm may be avoided by granting a comprehensive exemption, the granting of such extraordinary relief is not justified. New England Power Company Westborough, D.P.U. 12-02, at 35-37 (2012); D.P.U. 11-80, at 43, 44 (2012); D.P.U. 11-26, at 31; NSTAR Electric Company Waltham, D.P.U. 08-1, at 35-37 (2009).

Department and Siting Board cases that have considered and granted comprehensive exemptions have typically involved projects that were time sensitive and that dealt with the zoning ordinances of multiple municipalities, where conflicting interpretations could arise. NGrid Worcester, EFSB 09-1/D.P.U. 09-131/09-132 (2011); Western Massachusetts Electric Company, EFSB 08-2/D.P.U. 08-105/08-106 (2010); New England Power Company Millbury, D.P.U. 09-136/09-137 (2011).

As discussed in Section II.C.1, above, the Project is needed to address the long-term capacity needs of the surrounding area under certain contingency conditions at peak periods of demand. However, the Company has not persuaded us, especially in light of the fact that the zoning exemption request involves only one municipality, that this is an appropriate case in which to grant a comprehensive zoning exemption.

Accordingly, the Department denies the Company's request for a comprehensive exemption from the Boston Zoning Code.

IV. REQUEST FOR AUTHORITY TO CONSTRUCT AND USE TRANSMISSION LINE PURSUANT TO G.L. c. 164, § 72

A. Standard of Review

General Laws c. 164, § 72, requires, in relevant part, that an electric company 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.[15]

The Department, in making a determination under G.L. c. 164, § 72, considers all aspects of the public interest. Boston Edison Company v. Town of Sudbury, 356 Mass. 406, 419 (1969). Among other things, Section 72 permits the Department to prescribe reasonable conditions for the protection of the public safety. Id. at 419-420.

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; (2) the environmental impacts or any other impacts of the present or proposed use; and (3) the present or proposed use and any alternatives identified. New England Power Company d/b/a National Grid, D.P.U. 12-02, at 37-38 (2012) ("Westborough"); NSTAR Electric Company/New England Power Company d/b/a National Grid, D.P.U. 11-51, at 6 (2012); Boston Edison Company, D.T.E. 99-57, at 3-4 (1999). 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.

B. Analysis and Findings

In evaluating petitions filed pursuant to G.L. c. 164, § 72, the Department relies on the standard of review established for G.L. c. 40A, § 3 used above for the analogous Section 6 of Chapter 665 of the Acts of 1956 for determining whether the Project is reasonably necessary

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[15] 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 as the Department requires.

for the convenience or welfare of the public. Based on the record in this proceeding and compliance with the directives and mitigation discussed in Section II.C.3.j, above, and compliance with applicable state and local regulations, the Department finds pursuant to G.L. c. 164, § 72, that the proposed transmission line is necessary for the purpose alleged, will serve the public convenience, and is consistent with the public interest.

V. SECTION 61 FINDINGS

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 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). NSTAR submitted the affidavit of David S. Rosenzweig in which he asserts that the Project does not require the filing of an Environmental Notification Form with the Secretary of the Executive Office of Energy and Environmental Affairs (Exh. NSTAR-1, at exh. 14). Accordingly, Section 61 findings are not necessary in this case.[16]

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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. Since Section 61 findings are not required in this case, the Project is not subject to the Greenhouse Gas Emissions Policy and Protocol. The Department nonetheless notes that this Project would have low greenhouse gas emissions because it does not itself generate power and because the new switchgear equipment has reduced leakage rates, less than MassDEP standards. As such, the Project would have minimal direct emissions from a stationary source under normal operations and would have minimal indirect emissions from

VI. ORDER

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

ORDERED: That the petition of NSTAR seeking the specific exemptions set forth in Table 2, from the operation of City of Boston Zoning Code is granted with the exception of the operational requirements of Section 51-21; and it is

FURTHER ORDERED: That the petition of NSTAR seeking comprehensive exemption from the operation of the City of Boston Zoning Code is denied; and it is

FURTHER ORDERED: That the petition of NSTAR, seeking approval to construct and operate a transmission line pursuant to G.L. c. 164, § 72, is granted; and it is

FURTHER ORDERED: That to help mitigate noise and construction impacts, NSTAR work Monday through Friday from 7:00 a.m. to 6:00 p.m. and, with approval of ISD, from 9:00 a.m. to 5:00 p.m. on Saturdays, excepting public holidays. Should the Company need to extend construction work beyond those hours and days, the Company is directed to seek written permission from the relevant Boston or Watertown authorities prior to the commencement of such work and to provide the Department with a copy of such permission. If NSTAR and city or town officials are not able to agree on whether such extended construction hours should occur, NSTAR may request prior authorization from the Department; and it is

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transportation sources limited to construction, occasional repair, or maintenance activities. The Department addresses Project SF_6 emissions in more detail in Section II.C.3.e, above.

FURTHER ORDERED: That the Company shall minimize construction noise by using best construction practices (e.g., use of well-maintained mufflers), by constructing elements off site as much as is feasible, and by using the smallest size of construction equipment appropriate for Project tasks; and it is

FURTHER ORDERED: That the Company shall comply with City of Boston restrictions on noise emitted from construction sites, or obtain the necessary waivers therefrom; and it is

FURTHER ORDERED: That the Company report to the Department any noise complaints and their resolution; and it is

FURTHER ORDERED: That to ensure that information about construction and operation of the Project is disseminated widely within the community, the Department directs the Company, in consultation with the City of Boston and the Town of Watertown, to develop a community outreach plan for the Project's construction and operation. The outreach plan should, at a minimum, lay out procedures for providing prior notification to affected residents of: (1) the scheduled start, duration, and hours of construction near their homes; (2) any construction the Company intends to conduct that must take place outside normal hours near their homes; (3) any operation the Company intends to conduct that could result in unexpected community impacts due to unusual circumstances; and (4) complaint and response procedures including contact information; and it is

FURTHER ORDERED: that NSTAR provide information on/arrangements for alternative parking locations to neighbors as part of its community outreach. In order to mitigate adverse parking impacts from Substation construction, the Company shall provide to

the Department a plan for Substation construction worker parking that would avoid residential streets; and it is

FURTHER ORDERED: That NSTAR inform the Department if it adds SF_6 to any equipment at the new Substation or replaces any equipment at the new Substation due to SF_6 loss within five years of the completion and initial operation of the Project; and it is

FURTHER ORDERED: That NSTAR shall ensure that (1) all diesel-powered non-road construction equipment with engine horsepower ratings of 50 and above to be used for 30 or more days over the course of the Project construction will have USEPA-verified or equivalent emission control devices installed; and (2) that all vehicle idling be limited, generally to five minutes, in accordance with the MassDEP regulations; and it is

FURTHER ORDERED: That NSTAR file with the Department notice that a permanent Response Action Outcome has been achieved for the entire site, under the MCP, when the final Response Action Outcome is filed with MassDEP.

FURTHER ORDERED: That NSTAR and its contractors and subcontractors comply with all applicable federal, state and local laws, regulations, and ordinances for which the Company has not received an exemption, including those pertaining to noise, emissions, herbicides, and hazardous materials; and it is

FURTHER ORDERED: That NSTAR obtain all other governmental approvals necessary for the Project; and it is

FURTHER ORDERED: That NSTAR 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 within 90 days of Project completion, NSTAR shall submit a report to the Department documenting compliance with all conditions contained in this Order, noting any outstanding conditions yet to be satisfied and the expected date and status of such resolution; and it is

FURTHER ORDERED: That because the issues addressed in this Order relative to this Project are subject to change over time, construction of the Project must commence within three years of the date of this Order; and it is

FURTHER ORDERED: That the Secretary of the Department transmit a certified copy of this Order to the City of Boston Clerk's Office and to the Town of Watertown's Town Clerk, and that NSTAR serve a copy of this Order on the Mayor of Boston, the Boston City Council, the Boston Public Works Department, the Boston Transportation Department, the Boston Inspectional Services Department, the Watertown Board of Selectmen, and the Watertown Department of Public Works within five business days of its issuance and 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:

Ann G. Berwick, Chair

Jolette A. Westbrook, Commissioner

Kate McKeever, 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, § 5.