The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.T.E/D.P.U. 07-9/07-10

Petition of NSTAR Electric Company For Zoning Exemption Pursuant to G.L. c. 40A, § 3 to Construct and Operate a Proposed Expanded Electric Switching Station in the Town of Plympton and Petition of NSTAR Electric Company pursuant to G.L. c. 164, § 72 to Construct an Electric Transmission Line in the Town of Plympton

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I. INTRODUCTION

On February 23, 2007, NSTAR Electric Company ("NSTAR" or the "Company") filed a petition for a zoning exemption from the Town of Plympton ("Town" or "Plympton") zoning bylaws pursuant to G.L. c. 40A, § 3, and a petition for approval to construct and operate a transmission line pursuant to G.L. c. 164, § 72. These petitions were filed in connection with NSTAR's plan to expand its existing Brook Street substation and related facilities located in Plympton, Massachusetts ("proposed project") (Exh. NSTAR-1, at 1). NSTAR asserts that the proposed project is necessary in order to provide a secure and reliable supply of electricity to its customers in the towns surrounding the Brook Street substation and to increase the power import capability to the Southeastern Massachusetts area (Exh. NSTAR-1, at 9-10).

The Brook Street substation consists of a 115 kV electric transmission switching station located on a 3.47 acre site off Brook Street in Plympton (Exh. NSTAR-1, at 1). The existing switching station is connected with two 115 kV transmission lines that supply the area, and associated tap lines extending to a nearby substation in Plymouth, MA. These 115 kV transmission lines include: NSTAR's Line 116 extending south along a right-of-way ("ROW") to Carver, MA; NSTAR's Line 117, extending north along a ROW to Kingston, MA; and two tap sections of Lines 116 and 117, both extending east along a ROW to West Pond substation in Plymouth.

The existing switching station also abuts a fourth ROW occupied by double-circuit steel towers which support one 345 kV circuit and a set of spare line conductors (Exh. NSTAR-1, at 9-13, App. C(1), App. C(2), App. C(3)). The existing double-circuit facilities extend from National Grid's Auburn Street substation in Whitman, MA, past the Brook Street substation, to

Plymouth (id.). The Company plans to energize the spare line conductors as a new 115 kV circuit (Line 194) from Auburn Street substation to Brook Street substation (id. at 11). Related to this plan, the proposed project would entail equipment additions in and near Brook Street substation, including a connection of new Line 194 to the switching station and an expansion of the switching station, so as to terminate existing Line 116 and Line 117 and planned Line 194 circuits in a new "breaker and one half" bus (id.).

The proposed project would include the following specific elements: seven 115 kV circuit breakers with associated disconnect switches, bus work and concrete foundations; three 200-foot tap line conductors and two associated supporting structures; bridge terminations (relocated or new) and supporting structures for the four existing transmission lines and a new, three-phase 115 kV transmission tap line; a single-story control house; and relay and metering equipment incidental to the proposed project, along with control wiring and ancillary equipment (id. at 10). In addition, the proposed project would require a seven-foot-high chain link fence enclosure, and temporary switching station equipment, as needed, to allow NSTAR to provide electricity with minimal disruption to its customers during proposed project construction (id.). The proposed project would also include allocation of space for two future 115 kV circuit breakers to terminate a potential future 115 kV transmission line and concrete foundations associated with the two future 115 kV circuit breakers (id.).

II. PROCEDURAL HISTORY

On April 26, 2007, after notice duly issued, the Department conducted a public hearing at the Plympton Town House in Plympton. The Department received no petitions to intervene or to otherwise participate in the proceeding. The Department conducted an evidentiary hearing on the

Company's petition on July 31, 2007.

In support of its petition, the Company presented the testimony of the following witnesses: (1) John M. Zicko, Professional Engineer and Manager of Substation Design Engineering at NSTAR; and (2) Gregory Sullivan, the Director of System Planning at NSTAR. On August 14, 2007, the Company filed a brief.

III. STANDARD OF REVIEW

NSTAR has filed both a petition for a zoning exemption from the Town of Plympton zoning bylaws pursuant to G.L. c. 40A, § 3, and a petition for approval to construct and operate a transmission line pursuant to G.L. c. 164, § 72.

G.L. c. 40A, § 3 provides, in relevant part, that:

> Land or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the [Department] shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public....

Thus, a petitioner seeking exemption from a local zoning bylaw under G.L. c. 40A, § 3 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 establish that it requires exemption from the zoning ordinance or bylaw. Boston Gas Company, D.T.E. 00-24, at 3 (2001) ("Boston Gas"). Finally, the petitioner must demonstrate that its present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare. Massachusetts Electric Company, D.T.E. 01-77, at 4 (2002) ("MECo (2002)"); Tennessee Gas Pipeline Company, D.T.E. 01-57, at 3-4 (2002) ("Tennessee

Gas (2002)").

A. 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 ("SJC") has stated:

> among 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, 366 Mass. 667, 680. See also, Boston Gas, D.T.E. 00-24, at 3-4; Berkshire Power Development, Inc., D.P.U. 96-104, at 26-36 (1997) ("Berkshire Power").

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 Berkshire Power at 30; Save the Bay at 685-686; Town of Truro at 407. 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." Berkshire Power 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) ("Nextel"). 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.

See Berkshire Power at 31.

B. 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 looks to whether the exemption is necessary to allow construction or operation of the petitioner's project as proposed. See MECo (2002), D.T.E. 01-77, at 4-5; Tennessee Gas (2002), 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 the 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).

C. Public Convenience or 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 v. Department of Public Utilities, 365 Mass. 407 (1974). 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) ("New York Central Railroad"). 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 at 685; New York Central Railroad 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 preferred 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 preferred 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. Boston Gas, D.T.E. 00-24, at 2-6; MECo (2002), D.T.E. 01-77, at 5-6; Tennessee Gas (2002),

D.T.E. 01-57, at 5-6; Tennessee Gas Company, D.T.E. 98-33, at 4-5 (1998).[1]

D. G.L. c. 164, § 72

G.L. 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.[2]

The Department, in making a determination under G.L. c. 164, § 72, is to consider all aspects of the public interest. Boston Edison Company v. Town of Sudbury, 356 Mass. 406, 419 (1969). Section 72, for example, permits the Department to prescribe reasonable conditions for the protection of the 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

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[1] In addition, the Massachusetts Environmental Policy Act 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. § 11.12(5), Section 61 findings are required if the Secretary of Environmental Affairs has required an Environmental Impact Report ("EIR") for the project. No EIR was required for the proposed project (Exh. DPU 1-18). Consequently, the Project has not undergone MEPA review, and therefore no Section 61 findings are required.

[2] 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.

(1962).

As the Department has noted in previous cases, the public interest analysis required by G.L. c. 164, § 72, is analogous to the Department's analysis for the "reasonably necessary for the convenience of the or welfare of the public" standard under G.L. c. 40A, § 3. See New England Power Company, D.P. U. 89-163, at 6 (1993); New England Power Company, D.P.U. 91-117/118, at 4 (1991); Massachusetts Electric Company, D.P.U. 89-135/136/137, at 8 (1990). Accordingly, in evaluating petitions filed under G.L. c. 164, § 72, the Department relies on the standard of review for determining whether the proposed project is reasonably necessary for the convenience or welfare of the public under G.L. c. 40A, § 3, as set forth above.

IV. ANALYSIS AND FINDINGS

A. Public Service Corporation Status

NSTAR is an "electric company" as defined by G.L. c. 164, § 1. Commonwealth Electric Company d/b/a NSTAR, D.T.E. 03-7, at 5 (2003). Accordingly, the Siting Board finds that NSTAR qualifies as a public service corporation for the purposes of G.L. c. 40A, § 3.

B. Need for the Requested Exemptions

1. Business Zone

The Company states that the Brook Street substation is located in an area zoned as Business (B) (Exh. NSTAR-1 at 13). The Company further asserts that a switching substation is not an allowed use on the site under sections 4.1 and 4.2 of the Town of Plympton Zoning and Municipal Bylaws ("Bylaws") (id. at 13-14). In addition, the Company represents that the Bylaws prohibit the Board of Appeals from issuing use variances (id.).

According to the record, the Schedule of Uses does not include a switching station, an

electrical utility facility, or any use that could be construed to encompass the proposed project. Therefore, the proposed project appears to conflict with Sections 4.1 and 4.2 of the Bylaws. Accordingly, the Department finds that NSTAR requires an exemption from Section 4.1 and 4.2 of the Bylaws, within the meaning of G.L. c. 40A, § 3.

2. Yard Dimensional Requirements

The Company asserts that section 5.1.2 of the Bylaws imposes minimum "front yard," "side yard," and "rear yard" dimensional requirements (Exh. NSTAR-1, Attachment A at 12). The Company further represents that the switching station will include towers, which may be determined to constitute separate buildings (Exh. NSTAR-1 at 14). If such a determination is made, the Company asserts, the placement of the towers on the lot "could be deemed" to violate the front, side, and rear yard dimensional requirements (id.). Consequently, the Company seeks an exemption from this section (id. at 15).

The record supports the Company's assertions regarding front, side, and rear yard dimensional requirements. It is unclear whether the Town would interpret the towers to be constructed by the Company as separate buildings and, therefore, to be in violation of Bylaw Section 5.1.2. Because of this uncertainty, the Department finds that NSTAR requires an exemption from Section 5.1.2 of the Bylaws, within the meaning of G.L. c. 40A, § 3.

3. Signs

The Company represents that it plans to place at least two unlighted signs on the property to identify it as an NSTAR electric switching station and to provide notice of high-voltage facilities on the property (Exh. NSTAR-1 at 15). Section 6.1.2.2 of the Bylaws allows the display of signs to identify a permitted non-residential use within the Business district (Exh.

NSTAR-1, Attachment A at 16). As mentioned above, however, the switching station is not a permitted use in the Business district (id. at 7 - 11). Consequently, the Company seeks an exemption from this section (id. at 15).

The Department agrees with the Company's inference that by placing signs on the property that give notice of the presence of project elements that constitute a non-permitted use, the Company could be deemed to violate Bylaws section 6.1.2.2. Consequently, the Department finds that NSTAR requires an exemption from Section 6.1.2.2 of the Bylaws, within the meaning of G.L. c. 40A, § 3.

4. Trailers and Sanitary Facilities

The Company states that section 6.3 of the Bylaws prohibits trailers from being placed on private property for a period of more than 60 days if the trailer is to be used "as a dwelling, storage, sales, or office space" (Exh. NSTAR-1, Att. A at 18). The Company represents that, during construction, it will need to place temporary trailers and portable sanitary facilities on site (id. at 15). The Company also represents that construction will take more than 60 days to finish (id.). Consequently, the Company seeks an exemption from this section of the Bylaws (id.).

Although the Company does not state how the trailers will be used, it appears likely that they would be needed for one or more of the prohibited purposes. Therefore, the presence of trailers on the construction site during the construction period, which will be longer than 60 days, would likely violate Bylaw section 6.3. Accordingly, the Department finds that NSTAR requires an exemption from Section 6.3 of the Bylaws within the meaning of G.L. c. 40A, § 3.

5. Parking Requirements

The Company indicates that section 6.4 of the Bylaws governs off-street parking and

requires that every parking space must be marked, and furthermore, that section 6.4.2 of the Bylaws sets forth a list of permitted uses and corresponding parking requirements (Exh. NSTAR-1, at 15-16 and Att. A at 18-21). The Company asserts that it would not be possible for the Company to comply with section 6.4.2 because a switching station is not a permitted use, and indicates, furthermore, that it does not anticipate providing marked parking spaces on site during construction or during operation of its proposed facility (id. at 15-16). Consequently, the Company seeks an exemption from section 6.4 of the Bylaws.

As the Company asserts, the Bylaw's list of permitted uses does not include a switching station or any similar use. Therefore, it is not clear how the Company could comply with the Bylaws in the construction and operation of the proposed project. Furthermore, the Company plans to use an area for parking, but not to mark specific spaces. The Department notes the project will be an unmanned facility entailing only occasional parking during operation; thus marked spaces may well be unwarranted. However, these plans conflict with the requirements of the Bylaws. Consequently, the Department finds that NSTAR requires an exemption from section 6.4 of the Bylaws within the meaning of G.L. c. 40A, § 3.

6. Site Plan

The record shows that Section 6.7.1 of the Bylaws requires that the Planning Board must first approve a site plan before a building permit may issue (Exh. NSTAR-1, Att. A at 21). The Company, however, asserts that it must have the discretion to design the switching station and the site layout "in a manner that is consistent with established utility standards in order to ensure its reliable operation" (Exh. NSTAR-1, at 16). The Company asserts that the technical engineering and electrical issues that must be addressed in such a design are "typically beyond

the scope of Planning Board reviews" (id.).

As the Company argues, the goals of safety, reliability, and efficiency may require that the switching station include design measures to meet established utility standards. The Department notes that here, as in past zoning exemption reviews, site plan review generally entails discretionary considerations without precise or prescriptive standards; as such, the extent and outcome of review are uncertain. Therefore, the Department finds that NSTAR requires an exemption from Section 6.7.1 within the meaning of G.L. c. 40A, § 3.

7. Outdoor Lighting

The record shows that section 6.9 of the Bylaws contains detailed regulations regarding outdoor lighting (Exh. NSTAR-1, Att. A at 24 - 27). The Company seeks an exemption from these regulations on the grounds that it must comply with a different set of regulations, the National Electric Safety ("NES") Code (Exh. NSTAR-1, at 16-17).

The Company represents that, for safety reasons, operators must, as maintenance for reliability dictates, be able to see equipment that is located "well above ground level" (id. at 16). Consequently, the Company asserts that the proposed substation must be illuminated with a combination of fixtures that direct light up and down (id.). The Company is concerned that this level of illumination may exceed the limitations on the use of outdoor light set forth in the Bylaws (id. at 16-17). The Company asserts, for example, that the NES Code "specifies a level of 2 foot candles" (id. at 16). Bylaws section 6.9.9, however, requires that "at no point along the property line shall the measured light exceed two-tenths (0.2) of a foot candle" (Exh. NSTAR-1, Att. A at 26).

The Department notes that, as the Company argues, there is a possible conflict between

the Bylaws and the NES Code. It appears likely that these two requirements could conflict, especially if the 2 foot candle illumination is near the property line. Although the use may be occasional, nevertheless the record shows that the Company may at times need to use illumination in a manner inconsistent with the Bylaws. Accordingly, the Department finds that NSTAR requires an exemption from section 6.9 of the Bylaws within the meaning of G.L. c. 40A, § 3.

8. Groundwater Protection District Regulations

The Company represents that the switching station will be located in an area designated as a Groundwater Protection District - Type 1 ("GPD") (Exh. NSTAR-1, at 17). Section 8.3.4 of the Bylaws provides that, with some exceptions, only the uses permitted in the underlying zoning district are permitted uses within a GPD (id. at Att. A at 37). Consequently, the Company seeks an exemption from section 8.3.4 of the Bylaws (id. at 17).

The Company also seeks an exemption from section 8.3.5 of the Bylaws, which prohibits a wide range of uses within GPD-1 (id. at 17). For example, section 8.3.5(2) prohibits the storage of petroleum products within a GPD-1 area, unless said products will be used for heat (id. at Att. A at 37). The Company asserts that the switching station will, however, use a limited amount of petroleum-based electric insulating fluid in certain of its equipment (id. at 17). Further, section 8.3.5(6) prohibits the use of toxic or hazardous substances, unless used for agriculture (id. at Att. A at 38). The Company, however, intends to use lead acid batteries in the switching station control house (id. at 18).

Furthermore, the Company states that Bylaws section 8.3.5(11) prohibits regrading "the existing soil cover" if the regrading would result in "a finished grade within ten (10) feet of the

spring high water level" (id. at Att. A at 39). The Company represents that it may need to remove or regrade the existing soil cover in a manner inconsistent with the restraints imposed by the Bylaws (id. at 18).

The record shows section 8.3.4 references restrictions providing that property cannot be used in a manner that is inconsistent with the underlying zoning. As noted above, the switching station is not a permitted use within the underlying zoning district. Therefore, it is not a permitted use in the GPD. Consequently, the Department finds that NSTAR requires an exemption from section 8.3.4 of the Bylaws within the meaning of G.L. c. 40A, § 3.

Regarding Bylaws section 8.3.5, the Department finds that in order to operate properly certain of its equipment, the Company will need to use and, therefore, store certain petroleum products. Furthermore, the petroleum products in question will be used for insulation, and not for heat. The storing of petroleum products to be used for a purpose other than heat is proscribed by Bylaws section 8.3.5(2). In addition, the Company intends to use lead acid batteries in the control house of the proposed switching station. Bylaws section 8.3.5(6) prohibits the use of toxic or hazardous substances, unless used for agriculture. The Company may also need to remove or regrade the existing soil cover in violation of Bylaws section 8.3.5(11).

For the reasons discussed above, the Department concludes that whether the Company would be allowed to construct and operate the proposed facility under Bylaws 8.3.5 (2), (6), and (11), specifically, and under Bylaw 8.3.5, generally, is uncertain. Consequently, the Department finds that NSTAR requires an exemption from section 8.3.5 of the Bylaws within the meaning of G.L. c. 40A, § 3.

C. Public Convenience and Welfare

1. Need or Public Benefit of Use

The Company stated that the existing Brook Street switching station consists of a straight-through connection between 115 kV transmission Lines 116 and 117, controlled by a single breaker and a switch, and connections of both lines via transmission taps to West Pond substation (Exhs. NSTAR-1, at 10-11; DPU 1-14). The Company indicated that the combination of Line 116 and Line 117, connected via the Brook Street switching station, forms the "backbone" for the transmission system in the area running from the Carver substation, to the south, to the Kingston substation, to the north, and on to the Auburn Street substation in Whitman (Exh. DPU 1-14).

However, the Company indicated that the present design at the Brook Street switching station lacks the ability to isolate the connecting lines and tap lines from one another (1) in the event of a fault, or (2) during maintenance (id.). The Company asserted that the switching station design therefore is deficient, and improvements are required.

The Company indicated that the proposed improvements of Brook Street switching station also are needed as part of addressing capacity shortfalls on its overall transmission system (Exh. NSTAR-1, at 18-19). First, the proposed project is required in order to provide added electric transmission capacity to supply substations in Plymouth and surrounding towns under contingency conditions (id.). Second, the proposed project is needed to provide added power import capability for the overall Southeast Massachusetts area during normal, single-contingency and double-contingency (N-2) transmission system conditions (id.).

With respect to supply to area distribution substations, the Company stated that for a

single-contingency outage of Line 116, which runs from Carver to the existing Brook Street switching station, it is necessary for all customer load in the communities of Marshfield, Duxbury, Kingston, Plympton and much of Plymouth to be supplied by NSTAR 115 kV Line 191, which runs from Whitman to Kingston (Exh. NSTAR-1, at 19). The Company further stated that in heavy load conditions, the above contingency would cause Line 191 to be overloaded, above its Short Term Emergency ("STE") rating of 168 megavoltamperes ("MVA") (id. at 20; Exh. DPU 1-1). The Company indicated that it would need to use load transfers on area distribution lines to bring load on Line 191 marginally within its STE (Exh. NSTAR-1, at 19-20). The Company indicated, however, that its ability to use load transfer on area distribution lines to meet the contingency requirement was rapidly diminishing as a result of area load growth (id.).

In support, the Company provided a load flow simulation of the contingency loss of Line 116 under actual 2006 summer peak load, showing load flow on Line 191 at 109 percent of its summer STE rating (Exh. NSTAR-1, Fig. 1). The Company reported, based on information from ISO New England, that 2005 load also had reached levels wherein the STE rating had been exceeded for contingency loss of Line 116 (Exh. DPU 1-4). The Company stated that, to date, there had not been a Line 116 outage that caused load flow to exceed the STE rating on Line 191 (id.). The Company indicated, however, that since 2005, load growth in southeastern Massachusetts has continued and therefore it is increasingly likely a future contingency under peak conditions would cause power flows in excess of the STE rating on Line 191 (id.).

With respect to overall system supply for the southeastern Massachusetts area, the Company further stated that it relies on two 345 kV transmission lines and the two 560 MW generators at Canal Station in Sandwich, Massachusetts to serve over 1,200 MW of customer load (Exh. NSTAR-1, at 20). Additional supply is possible via a single 115 kV line between Dartmouth and Somerset to the west, and via the 115 kV path from Brook Street to Kingston and on to Whitman (id.). The Company stated that by themselves, these 115 kV paths can support an area load of approximately 400 MW, or roughly one-third of the area load (id.).

The Company indicated that ISO New England, which controls and operates the area transmission network, manages the system to sustain an N-2 level of contingency protection (id.). The Company stated that, for load conditions when the Canal Station generators are not economic and not otherwise dispatched, the N-2 contingency analysis evaluates the loss of the two 345 kV lines (id.). The Company stated that currently, the ability of the area transmission system to import power when 345 kV Lines 331 and 342 are out of service is limited to about 35 percent of the area peak load, and that this load level is exceeded every day of the year (Exh. DPU 1-3). The Company provided analysis showing that, with only the above-referenced 115 kV lines remaining, the system cannot fully support the area load (Exh. NSTAR-1, at 20, Fig. 2, Fig. 3, Fig. 4). The Company indicated that ISO New England has had to keep the Canal Station

generators in operation in order to maintain system support even when their output would not otherwise be dispatched given market-clearing prices, creating "millions of dollars of" additional wholesale market costs (id.).[3,4]

The Company stated that its proposed changes at its existing Brook Street switching station, together with the addition of Line 194, would address constraints on its ability to serve customers (Exh. DPU 1-8). Chief among these changes would be the replacement of existing switching equipment at Brook Street with a breaker-and-one-half bus (id.). The Company stated that, in choosing to install a breaker-and-one-half bus, it followed the recommendation of a working group of ISO New England and transmission owners with respect to optimal design for transmission station operation, maintenance, and expansion, and overall system reliability (id.).

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[3] The Company further indicated that the southeastern Massachusetts area does not have much generating capacity beyond that produced at the Canal Station (Exh. DPU 1-3). The Company explained that the next biggest plant is Pilgrim Station, tied to two transmission lines, one of which, Line 342, also feeds the Cape Cod area (id.). The Company stated that the contingency evaluated in the context of the proposed project is the loss of Line 342, which would result in the inability of Pilgrim Station to feed Cape Cod (id.). The Company indicated that line two from Pilgrim Station, Line 355, runs to Bridgewater, outside the lower southeastern Massachusetts area (id.). The Company stated that the 115 kV transmission line from National Grid's Bridgewater Station does not feed lower southeastern Massachusetts except indirectly through Somerset over a line already at high capacity loading (id.).

[4] The Company indicated that under Reliability Standards for the New England Area Bulk Power Supply System, ISO New England must manage the bulk power supply system to have sufficient transmission capacity to integrate all resources and serve loads under N-1 conditions (*i.e.*, loss of a generator, transmission line, or transformer) (Exh. DPU 1-2). The Company stated that the same requirements apply after any critical generator, transmission line, or auto-transformer has already been lost (an N-2 condition) (id.).

As additional system improvements, the Company plans to energize, as new Line 194, an existing spare set of conductors opposite a 345 kV circuit on double-circuit structures from Whitman to Plymouth (Exh. NSTAR-1, at 11). The Company indicated that the existing double-circuit facilities are located in a right-of-way adjacent to the existing Brook Street switching station (id.). The Company stated that with installation of the proposed 200-foot tap line the newly energized Line 194 from National Grid's Auburn Street substation in Whitman, would terminate at the proposed breaker-and-one-half bus at the Brook Street switching station (id.). The Company indicated that, together with reinforcing the Brook Street bus, energizing Line 194 (a) would enable its transmission system to supply the substations in Plymouth and surrounding areas under single contingency loss of the 116 Line, and (b) would enable its transmission system in southeastern Massachusetts to support upwards of 150 MW or more of additional power (id., at 21). The Company provided load flow simulations of the single-contingency loss of the 116 Line, and of the N-2 contingency loss of 345 kV Lines 331 and 342, illustrating the reliability and capacity constraints and the relief to be provided by the proposed project (Exh. NSTAR-1, Fig. 2, Fig. 3, Fig. 4).

2. Alternatives Explored

The Company asserts that its preferred alternative, which is the proposed project, will address three separate, but related, problems. They are: (1) that the present design of the Brook Street switching station is not adequate to support the "backbone" of the area's transmission

system; (2) that the system, as it is now configured, is vulnerable to the failure of Line 116; and (3) that the system needs new capacity to import additional power into the southeast Massachusetts area (id. at 19, 24, 25).

To address the issue of inadequate switching station design the Company's preferred alternative is to convert the facility to a breaker-and-one-half configuration (the "Breaker-and-One-Half Alternative") (id. at 22). The Company considered two non-preferred alternatives, the first being to construct a completely new and essentially parallel system (the "Parallel System Alternative") (id. at 22). The second non-preferred alternative is to reduce reliance on the Brook Street switching station by shifting some of the area load now supplied via lines connected there to an alternative transmission path (id. at 23). Specifically, under this alternative, the Company considers expanding the existing Manomet substation and reconnecting the 70 MVA of West Pond substation customer load over to Manomet substation ("Manomet Alternative") (id.).

According to the Company, the Parallel System Alternative was rejected as being both time-consuming and expensive (id. at 23). The Manomet Alternative was deemed less desirable than the Breaker-and-One-Half Alternative because it would require considerable new construction, it would take significantly longer to accomplish, and it would not provide the same degree of system improvement (id. at 23-24).

To address the issue of the vulnerability to a failure of Line 116, the Company's preferred alternative is to reconfigure the spare conductors passing immediately adjacent to the Brook Street switching station into a new 115 kV circuit connected to the switching station (id. at 23). The Company refers to this as the "Line 194 Alternative" (id.). Two other alternatives to address such vulnerabilities were examined and rejected: the first would involve the addition of a second

115 kV circuit on the double-circuit tower from Carver substation to Brook Street (the "Carver-to-Brook Street Alternative") (id.); the second would involve the upgrade of conductors of the existing 115 kV lines between Auburn Street and Kingston substation (the "Auburn Street-to-Kingston Alternative") (id. at 24-25).

The Carver-to-Brook Street Alternative and the Auburn Street-to-Kingston Alternative would require significant new construction and would, therefore, be much more expensive than the Line 194 Alternative (id. at 25). Specifically, the Line 194 Alternative is projected to cost approximately $1.5 million; the Carver-to-Brook Street Alternative is projected to cost approximately $2.5 million; and the Auburn Street-to-Kingston Alternative is projected to cost $4.5 million (id. at n. 7).

With respect to the separate need for new system capacity in order to be able to import additional power into the Southeast Massachusetts area, the Company asserts that both the Line 194 Alternative and the Auburn Street-to-Kingston Alternative provide such import capacity (id. at 26). The Company stated the Line 194 Alternative is preferable as it would increase the import capacity by approximately 200 MW (id.), while the Auburn Street-to-Kingston Alternative would increase power import capability by only 100 MW (id.).

3. Impacts of the Proposed Use

a. Land Use and Water Resource Impacts

The Company stated that the location of the proposed project is proximate to existing transmission lines and to a 115 kV transmission switching station (Exh. NSTAR-1, at 27-28). The Company indicated that the proposed project would expand the approximately 16,000 square feet now fenced for the switching station to approximately 31,000 square feet (id.). The

Company stated that transmission taps for the proposed project would add approximately 200 linear feet to existing land use for that purpose (id.). The Company asserted that, with the proposed project, site land use and its compatibility with the surrounding area would be consistent with current conditions (id.).

The Company indicated that the proposed project would be located outside zones regulated by the state under the Wetland Protection Act (G.L. c. 131, § 40); Wetland Protection Regulations (310 CMR 10.00); and MA DEP Zone II Wellhead Protection, Interim Wellhead Protection Areas, or Zone A, B, or C Surface Water Supply Protection Areas (Exhs. DPU 1-30, Att., DPU 1-31, Att.). The Company has indicated, however, that the proposed project would be within the Town of Plympton Groundwater Protection Overlay District, "GPD Type 1" (Exh. NSTAR-1, at 29). [5,6]

The Company indicated that there are no historic landmarks or districts, areas of critical environmental concern, or areas designated as flood, velocity, or over-wash zones within the proposed project site or footprint (Exh. DPU 1-37). The Company also stated that the Natural Heritage and Endangered Species Program has reviewed the proposed project and determined that it will not result in a prohibited "take" of state-listed rare species (RR-DPU-4, Att.).

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[5] The Company has requested an exemption from the applicable sections, Sections 8.3.4 and 8.3.5, of the Bylaws (Exh. NSTAR-1, at 17-18). The Department addresses the Company's request in Section IV.B, above.

[6] In this Section, below, the Department lists measures taken by the Company to minimize impacts to groundwater resources. These include preparation and use of a stormwater pollution prevention plan, recharge of stormwater on site during proposed facility operation, and limiting of on-site cut and fill. The Company also indicated that it would take measures to prevent spills of potential groundwater pollutants (see Section Hazardous Materials, below).

The Company stated that it would remove approximately 2,600 square feet of trees in conjunction with the proposed project (Exh. DPU 2-6). The Company anticipated that maintaining clearance for power lines at station access points might prevent one-to-one replacement of trees (id.). The Company stated that it would plant trees where practical along Brook Street, primarily to maintain vegetative screening at this location (id.).

The Company stated that the area to be cleared of trees consists of three sub-areas, and that the three sub-areas presently contain, in total, approximately 50 trees, predominantly white pine (RR-DPU-1). The Company stated that two of these areas, one along the east border of the Company's Brook Street property and another at the northeast corner, could be replanted at least in part with tree plantings (id.). The Company indicated that trees planted at these locations would be of lower maximum height than white pine to avoid future entanglement with overhead power lines (id.). The Company stated that in some portions of the two identified areas, and in a third area on the south property line, it could not plant trees, but would use grasses or ground cover to stabilize soil from erosion (id.).

The Company stated that its present practice regarding herbicide use is to use a back-pack sprayer to spot-apply herbicide to problem plants invasive to the Company's facilities, including at substations and under transmission lines (Exh. DPU-1-20). The Company stated that it anticipated continuing its present practices with regard to herbicide application in the vicinity of the Brook Street switching station (id.). The Company explained that it anticipated no change in its practices at the Brook Street switching station because the proposed project involves pre-existing ROWs and an area already used for a switching station (id.).

The Company stated that the proposed project would require a storm water pollution

prevention plan during construction (Exh. DPU 2-10). The Company stated that during construction, and as part of long-term project design, it would incorporate the best management practices ("BMP") of the "EPA Storm Water at Construction Sites" guide wherever practicable, including on-site recharge of stormwater (Exh. NSTAR-1, at 29; RR-DPU-5). The Company indicated that the goal of the referenced BMPs is to limit disturbance to vegetation and soils, to stabilize areas where disturbance is unavoidable, to minimize the addition of new paved surface in the area of construction, and to manage waste streams appropriately (id.). Consistent with the BMP to limit disturbance to vegetation and soils, the Company stated that it could not avoid all regrading of the proposed project site, but would, to the extent possible, limit cut and fill (Exhs. NSTAR-1, at 29; DPU 1-24; DPU 2-8).

b. Visual Impacts

The Company stated that the maximum height of new structures for the proposed project would not exceed the maximum height of existing structures at the Brook Street switching station (Exhs. DPU 1-21; DPU 1-21, Att.). The Company also stated that there would be no disturbance to the tree line between the existing station and Brook Street, and therefore no visual impacts to residences on the opposite side of Brook Street from the station (id.). The Company indicated that it would add an estimated six arborvitae plants, each approximately 15 feet high at planting, to the north of the existing station entrance to further reduce any chance of visual impacts from the proposed project (Exh. DPU 1-21; RR DPU-2).

With respect to lighting for the proposed project, the Company stated that the only lighting fixtures facing upward would be those used to illuminate overhead buswork as necessary for maintenance: they would not be lit at night on a business-as-usual basis (Tr. 1, at 35-37). The

Company stated that it would illuminate the switching station exterior after dark only to ensure staff safety in the event of a problem requiring night work (id. at 36). The Company indicated that it would not use continuous night lighting except in coordination with local law-enforcement authorities in the event of a security threat (id. at 36-37).

c. Hazardous Materials

The Company indicated that an accidental release of contaminants would trigger immediate implementation of procedures in accordance with the Company's plan for spill notification and response, "Environmental Affairs Department Policy #4: Oil and Hazardous Material (OHM) Release Notification/Contingency Plan Policy & Procedure" ("OHM Plan") (Exhs. DPU 1-29; DPU 2-11, Att.). The Company stated that as part of its response procedure, it employs a Licensed Site Professional for 24 hour on-call response to any spill of hazardous material (Exh. DPU 1-29).

With respect to potentially hazardous materials used on site for construction or operation of the proposed project, the Company stated that some construction equipment would use gasoline and diesel fuel, as well as hydraulic fluid (Exh. DPU 1-39). The Company stated that the new switching facilities would use lead acid batteries, electrical insulating fluid, and sulfur hexafluoride gas, materials also used in the existing facility (id.). The Company indicated that during construction it would rely on standard practices to safeguard against spills, as outlined in its OHM Plan (id.; Exh. DPU 2-11, Att.). The Company also indicated that it would install the battery for the proposed switching facility on a floor with an acid-resistant coating, within a containment berm (Exh. DPU 1-39).

The Company stated that the proposed project would increase the quantity of capacitive

voltage devices at the Company's Brook Street switching station from six to twenty one (Exh. DPU 1-38). The Company explained that the capacitive voltage devices are hermetically sealed at the time of manufacture (id.). The Company indicated that failure of a capacitive device sounds an alarm in the Company's operations center (id.). The Company stated that its operations center is staffed on a round-the-clock basis and that cleanup would be promptly instituted in the event of an alarm (id.).

d. Noise

With respect to noise from operation, the Company indicated that circuit breakers and capacitive voltage devices would be the primary sources of sound at the proposed Brook Street switching station (Exh. DPU-1-33). The Company stated that sound from the breakers at the proposed facility would be no greater than that from the breakers at the existing Brook Street switching station (id.).[7] The Company indicated that, based on the Company's experience, the proposed capacitive voltage devices contain a small transformer that would generate continuous sound, but that the sound would be inaudible at the fence line of the proposed switching station (id.). The Company indicated that other sources of sound would be package heating, ventilation, and air conditioning ("HVAC") units, which would produce intermittent sound (Exh. DPU-1-34). The Company stated that sound from the HVAC units would be similar to that of a residential air conditioning condenser (id.).

With respect to noise from construction, the Company stated that it expected the first phase of construction, involving extensive earth moving and facility construction, to affect

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[7] The Company stated that it has not received complaints about noise from abutters in the last 10 years with respect to the existing Brook Street switching station (Exh. DPU-2-12).

abutters more than the subsequent installation of electrical components in the yard of the proposed switching station (Exh. DPU 1-36). The Company indicated that installing control cable and wiring would require no heavy equipment and would therefore involve no noise impacts to abutters (id.). The Company stated it would prefer a six-day per week construction schedule of 7:00 a.m. to 6:00 p.m. to minimize the length of the overall construction process (id.). The Company stated that it would maximize the daylight hours for outside construction activities over a standard Monday through Friday work week (id.). The Company indicated that it would use Saturdays primarily for activities requiring particular system conditions available on a Saturday, *e.g.* low load to minimize the effect of planned equipment outages, or for work delayed or postponed by scheduling issues or problematic weather (id.; Exh. DPU 2-13).

The Company indicated that it would endeavor to minimize the noise impact of construction on Saturday mornings and that it would be willing to address any construction impacts relating to Saturday construction activities with abutters on a case-by-case basis (Exh. DPU 1-36). With respect to the effort to minimize the noise impact of construction on Saturday mornings, the Company stated that it would make every effort to schedule noisy activities on a Monday to Friday basis, or after 8:00 a.m. on Saturday (RR-DPU-6). The Company indicated, however, that it proposes to retain the ability to start overall construction activity, between 7:00 and 8:00 a.m. on Saturday (id.). The Company stated that the earlier start time for construction not involving noisy activity would allow the Company the flexibility it needed to complete its proposed project on schedule (id.).

The Company indicated that there would be an NSTAR construction supervisor on the proposed project site for the majority of the construction period and that a direct abutter, or an

abutter of a direct abutter, would be welcome to speak to the construction supervisor directly (RR-DPU-7). The Company stated that it would notify abutters by letter of the option to speak with the Company's construction supervisor about construction-related concerns (id.). The Company indicated that in the same letter, most likely delivered by hand, it would provide the telephone number of its community relations manager for the area (id.).

e. Traffic

The Company stated that all construction for the proposed project would occur off public roadways (Tr. 1, at 40). The Company indicated that it would use police details as required by state and local regulations; however, the Company had no written traffic control plan to ensure safe delivery of large items, including building materials (*e.g.*, steel), the control enclosure, and circuit breakers (Exh. DPU 1-27). The Company stated that the existing driveway from its Brook Street switching station property to Brook Street would serve as the vehicular access point for construction activity associated with the relocation of 115 kV Lines 116, 132, and 133 (Exh. DPU 1-25, Tr. 1, at 41). The Company indicated that for the work involved to relocate existing Line 117 and install taps for proposed Line 194, it would use a combination of the existing Brook Street switching station driveway and the existing ROW access on Brook Street approximately 300 feet to the northeast of the existing Brook Street switching station entrance (Exh. DPU 1-26).

The Company stated that traffic in and out of the proposed project site would most likely be limited to vehicle trips for access by fewer than 50 people, assuming a day with a site meeting in addition to on-going construction work (Tr. 1, at 46). The Company further stated that most individuals involved with construction of the proposed project would work a 7:00 a.m. to 3:00 p.m. shift and would arrive and depart from the proposed project site accordingly (id. at 47). The

Company also stated that it would make an effort to ensure that those involved with proposed project construction parked their vehicles off public streets, on the Company's property (id.). The Company indicated that if any problem arose prior to the shift start, with noise from early morning presence of anyone associated with construction, it would be the responsibility of the Company's contractor in the first instance and then the Company's responsibility to deal with the disturbance (id. at 48).

The Company stated that it had taken, and continues to take, security measures to prevent unauthorized access and use of its ROWs in the area of the proposed project, including the placement of barriers and gates across the ROW at certain road crossings (Exh. DPU 1-26).

f. EMF

The Company provided a study of power lines and magnetic fields ("EMF Study") associated with the existing and proposed Brook Street switching station (Exh. NSTAR-2). The Company indicated that the maximum measured[8] magnetic field along the fence perimeter of the existing Brook Street switching station was approximately 58 milligauss ("mG"), and average measured magnetic fields along the fence line were 23 mG (id. at 10). The Company anticipated that, with the proposed expanded Brook Street switching station in operation and Line 194 in place, peak magnetic field strengths would be approximately 100 mG, occuring where Line 116 crossed into the proposed facility over its southern fence line (id.; Exhs. DPU 1-40, DPU 1-41, DPU 1-42). The Company projected that peak magnetic field strengths within the proposed expanded Brook Street switching station would be about 122 mG (Exh. NSTAR-2, at 3).

The Company stated that the closest residential abutter would be to the northeast,

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[8] Measurement occurred on March 14, 2007 (Exh. NSTAR-2, at 2).

approximately 235 feet from the proposed switching station (Exh. NSTAR-2, at 3). The Company stated that consistent with the rapid decrease of magnetic field strengths with increasing distance from their source, the highest projected magnetic field strength at the property line of the closest residential abutter to the proposed switching station site would be about 6.5 mG (id.).

The Company also indicated that, with appropriate phasing, the energization of Line 194 to the ROW with Line 342 would reduce magnetic field levels at the edges of the ROW by 7 percent (east ROW edge) or 23 percent (west ROW edge) (Exh. DPU 1-42).

The Company indicated in its EMF study that electric fields in the vicinity of its proposed project are presently dominated by existing 115 kV transmission lines and by the adjacent, existing 345 kV circuit (Line 342) (id. at 7). The Company stated that the largest electric fields, approximately 10.3 kV/m, are now at the circuit centerline (maximum point of sag) immediately below Line 342 (id.). The Company stated that at the nearest ROW edge for Line 342, approximately 75 feet from the circuit centerline, electric field levels drop to about 0.8 kV/m (id.). The Company stated that because the proposed project would not change the voltages on the identified transmission lines, it anticipated no increase in electric field levels (id. at 2, 7). The Company further indicated that because electric fields along Brook Street are below 0.8 kV/m, electric field levels would be considerably lower at the residential property closest to the proposed Brook Street switching station (id. at 3).

4. Analysis

The Company has established that the switching station design is deficient, and improvements are required.

NSTAR has presented documentation showing that, under existing peak load conditions, power flow on a portion of its 115 kV transmission system would exceed short term emergency ratings for a single-contingency outage of a transmission circuit in that system. The Company has shown that the reliability of the existing system would decline further with projected increases in load. The Company's analysis shows that the proposed expansion would serve to provide added electric transmission capacity sufficient to supply the substations in Plymouth and surrounding area towns under contingency conditions.

The documentation shows that, absent operation of Canal Station generators that otherwise would not be dispatched based on their operation cost, system capacity to southeastern Massachusetts currently is inadequate for a range of assumed load and operating conditions. The Company's analysis shows the expansion would serve to help increase Southeast Massachusetts area power import capability during normal, single-contingency and double-contingency operations, thereby significantly reducing out-of-merit operation of Canal Station generation.

Consequently, the Department finds that construction of the proposed project would serve energy needs and provide energy benefits, including providing sufficient transmission capacity consistent with system operations reliability criteria to supply area substations, and providing added transmission capacity to enhance import capability, thereby reducing system costs related to out-of-merit operation of generation reserves.

With respect to consideration of alternatives, the record shows that each of the combined elements of the Company's preferred approach – the Breaker-and-One-Half Alternative and the Line 194 Alternative – have the attribute that they would make maximum use of the existing system configuration and existing elements therein. The breaker-and-one-half approach at Brook

Street switching station has the advantage that it would retain and build on the facility's established function within the larger transmission system, entailing construction at that single location to upgrade the bus design as well as add a supply connection from new Line 194. The Line 194 approach has the advantage that it would return a previously used circuit to service to meet current system requirement, with construction limited to new or altered substation connections at the circuit end-points.

The record further shows that the Company considered two alternatives, each, for the two above-mentioned elements of its preferred approach. The Company showed that the identified alternatives to improving Brook Street switching station would entail broader changes to the system configuration in the area, likely requiring more extensive construction with higher costs and impacts and a longer construction period. The Company established that the identified alternatives to new Line 194 similarly would require greater construction, occurring along the full length of their affected transmission routes rather than at endpoints only, with added costs estimated at 67 percent and 200 percent. The record further shows that while both of the non-preferred alternatives to new Line 194 would meet the need related to the single-contingency loss of Line 116, they would not equally serve the need for added import capability and reduced reliance on out-of-merit generation, compared to that provided by the preferred Line 194 Alternative, and instead would provide only half the added import capability, in one instance, and no added import capability in the other.

The Department finds that the Company reasonably established, as siting attributes, that the proposed project would allow it to make maximum use of the existing system configuration and existing elements therein, and, by comparison with identified alternatives, would be more

cost effective to develop, based both on lesser construction requirements for meeting overall identified needs and greater benefits with respect to the specific need to increase import capability.

With respect to land use and water resource impacts, the record shows that the proposed project would be outside zones regulated for wetland, wellhead, or groundwater protection. The record further shows that there would be no impacts to designated rare species, or to historic landmarks, historic districts, areas of critical environmental concern, or areas designated as flood, velocity, or over-wash zones within the proposed project site. The record shows that the proposed project would require a storm water pollution prevention plan during construction.

The record shows that the proposed project would likely result in the loss, from three locations, of a total of approximately 50 trees, predominantly white pine. The record also shows that plantings of shorter trees in two of the locations and grasses or ground cover in the third would partially compensate for tree loss. The record shows that, to the extent possible, the Company would limit disturbance to vegetation and soils, stabilize area where disturbance is unavoidable, minimize the addition of new paved surface area, and manage waste streams appropriately. The record shows that present methods of controlling vegetation at the Brook Street switching station and associated ROWs would continue.

With respect to visual impacts of the proposed project, the record shows that there would be no disturbance to the tree line between the existing station and Brook Street. The record further shows that the Company would add six arborvitae plants, each approximately 15 feet high at planting, to the north of the existing station entrance to reduce further any chance of visual impacts from the proposed project. The record also shows that upward lighting would be

available should there be a problem requiring night maintenance of overhead buswork. The record further shows that there would be no continuous lighting of the Brook Street facilities except in coordination with local law-enforcement authorities in the event of a security threat. The record shows that the proposed project is essentially an expansion of a comparable use at the same location and will not reduce the quality of views available to residences in its vicinity.

With respect to impacts of hazardous materials, the record shows that the Company has appropriate insulation and containment devices in place as preventative measures, and an OHM plan, alarm system, and an operations center staffed round-the-clock to respond to emergency spills or equipment failure.

With respect to traffic impacts, the record shows that during construction, 50 vehicles at most would likely come and go from the project, most before 7:00 a.m. or after 3:00 p.m., when construction shifts would normally begin and end. The record shows that the Company would make every effort to have workers park off public streets. The record also shows that the Company's contractor, in the first instance, and otherwise the Company, would be responsible for preventing noise impacts before 7:00 a.m. due to the arrival or other activities of workers associated with the proposed project.

The record shows that the fact that all construction for the proposed project would occur off public roadways would limit traffic impacts of the proposed project, as would the use of existing driveways for access to construction areas. The record also shows that the Company has no written traffic plan for delivery of large items, but that the Company would communicate with local authorities and use police details as required. The record shows that the Company would continue existing security measures to prevent unauthorized access and use of its ROWs in the

area of the proposed project.

With respect to noise impacts from proposed facility operation, the record shows that the proposed project would not result in increased noise impacts in the vicinity of the Brook Street switching station. With respect to noise impacts from construction, the record shows that the initial phase of construction, involving heavy equipment for earth moving and facility construction, would have the greatest impacts on abutters. The record shows that the Company would maximize daylight hours for outside construction activities over a standard Monday through Friday work week, 7:00 a.m. to 6:00 p.m. The record also shows, however, that the Company anticipates undertaking construction during the same hours on Saturdays to shorten the length of the overall construction process. The record shows that the Company would schedule noisy activities Monday through Friday or on Saturdays after 8:00 a.m. to the extent possible. The record shows that the Company would be willing to address any noise impacts relating to Saturday construction activities with abutters on a case-by-case basis. The record further shows that, with respect to noise and other project-related concerns, abutters would have access to an NSTAR construction supervisor on site and to the Company's community relations manager for the area by telephone.

The record shows no increase in projected magnetic field strength at the property line of the closest residential abutter. The record shows no anticipated increase in electric field levels in the vicinity of the Brook Street switching station as a result of the proposed project.

The record shows that the impacts of the proposed project on the community, discussed above, would be minimal, with the exception of possible noise impacts, which have the potential to cause undue disturbance in the neighborhood of the proposed site. To help mitigate noise

impacts from construction, the Department requires that the Company ensure quiet at its construction site before 7:00 a.m., Monday through Friday, and before 8:00 a.m. on Saturday. The Department further requires that no construction activities occur before 8:00 a.m. on Saturdays.

The Department finds that the proposed project, with the proposed and other identified mitigation described herein, would likely result in minimal impacts on the local community, consisting primarily of noise impacts of construction.

In sum, the proposed project will allow the Company to make maximum use of the existing system configuration and elements, thereby providing advantages over identified alternatives. The Department review shows that the proposed project would address a near-term energy need, in that it would provide added transmission capacity necessary to supply customers consistent with applicable reliability criteria, at existing and expected load levels. The proposed project would, in addition, help provide important economic benefits, in that it would displace costly out-of-merit operation of generation resources. The Department's review also identified few adverse local impacts, and showed that with use of required mitigation of construction noise impact, local impacts would be minimal.

Based on the foregoing, the Department finds that the public interest in the construction of the proposed project on the proposed site would outweigh the impacts of the project. Consequently, the Department finds that the proposed project is reasonably necessary for the convenience and welfare of the public.

V. SCOPE OF ZONING EXEMPTION

A. Comprehensive Exemption

In addition to the exemptions stated above, NSTAR seeks comprehensive relief from the Zoning By-laws as a whole (Exh. NSTAR-1, at 13-18). NSTAR argues that comprehensive relief is appropriate in this instance because numerous individual exemptions would be required to construct the project (id.). NSTAR also states that it is seeking a comprehensive exemption because there is an acute need for the project: it must be completed as quickly as possible in order for the system's capacity to keep pace with the growing demand (id. at 18).

B. Analysis and Findings

In prior cases, the Department considered the issuance of comprehensive relief where numerous exemptions are required or where the issuance of a comprehensive exemption could avoid substantial public harm by serving to prevent a delay in the construction and operation of the proposed use. New England Power Company, D.T. E. 04-4 at 32-33 (2004); US Gen New England, D.T.E. 03-83, at 34 (2004); Tennessee Gas Pipeline Company, D.T.E. 01-57, at 11 (2002).

The Department notes that petitions for comprehensive exemptions must be evaluated on a case-by-case basis. Furthermore, the demonstration of a need for numerous exemptions may not be a sufficient basis for granting comprehensive relief. The mere number of exemptions required does not necessarily reflect the distinct circumstances for which comprehensive relief is warranted. Therefore, in future cases, the Department will not consider the number of exemptions required as a sole basis for granting a comprehensive exemption.

The Department, however, will continue to use its standard for granting comprehensive

relief when construction of a proposed facility would avoid substantial public harm. Tennessee Gas Pipeline Company, D.T.E. 01-57, at 11 (2002). This allows the Department to examine whether a comprehensive exemption would support the goal of granting relief that is in the public interest.

In the instant case, the Department's review shows that the proposed project would address a near-term energy need, in that it would provide added transmission capacity necessary to supply customers consistent with applicable reliability criteria, at existing and expected load levels. The proposed project would, in addition, help provide important economic benefits consisting of considerable savings in generation costs. Therefore, moving the project forward without delay is in the public interest, and further supports issuance of a comprehensive exemption.

Based on all the above circumstances, and the minimal impacts of the proposed project on the local community, the Department finds that a comprehensive zoning exemption to construct and operate the proposed facility is in the public interest. Accordingly, the Department grants NSTAR's request for a comprehensive exemption from the Zoning By-laws of the Town of Plympton for the proposed facility. This comprehensive exemption shall apply to the construction and operation of the proposed facility as described herein to the extent applicable. See Planning Bd. of Braintree v. Department of Public Utilities, 420 Mass. 22 (1995).

C. Conclusion

As set forth in Section IV.A, above, NSTAR has established that it is a public service corporation. As set forth in Section IV.C, above, NSTAR has established that, on compliance

with the noise condition, the proposed project is reasonably necessary for the convenience and welfare of the public. As set forth in Section IV.B, above, NSTAR requires an exemption from Sections 4, 4.1, 4.2, 5.1.2, 6.1.2.2, 6.3, 6.4, 6.7.1, 6.9, 8.3.4, and 8.3.5 of the Town of Plympton Zoning and Municipal Bylaws, as well as a comprehensive exemption from the Town of Plympton Zoning and Municipal Bylaws.

VI. G.L. c. 164, § 72

As stated above, 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 for determining whether the proposed project is reasonably necessary for the convenience or welfare of the public. Based on the record in this proceeding and the above analysis, and with the implementation of mitigation measures proposed by the Company and directed by the Department, the Department finds pursuant to G.L. c. 164, § 72, that the proposed transmission lines are necessary for the purpose alleged, will serve the public convenience, and are consistent with the public interest.

The Siting Board directs NSTAR to serve a copy of this decision on the Town of Plympton Board of Selectmen, the Town of Plympton Planning Board, and the Town of Plympton Zoning Board of Appeals within five business days of its issuance. The Department further directs NSTAR to certify to the Secretary of the Department within ten business days of its issuance that such service has been made.

VII. ORDER

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

ORDERED: That the petition of NSTAR Electric Company seeking numerous specific zoning exemption from the Town of Plympton Zoning and Municipal Bylaws pursuant to G.L. c. 40A, § 3, is allowed; and it is

FURTHER ORDERED: That the petition of NSTAR Electric Company seeking a comprehensive exemption from the Town of Plympton Zoning and Municipal Bylaws is allowed; and it is

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

FURTHER ORDERED: That, to help mitigate noise impacts from construction, the Company is required to ensure quiet at its construction site before 7:00 a.m., Monday through Friday, and before 8:00 a.m. on Saturday, and that no construction activities occur before 8:00 a.m. on Saturdays; and it is

FURTHER ORDERED: That NSTAR Electric Company notify the Department of any significant changes in the planned timing, design, or environmental impacts of the proposed project; and it is

FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the Town of Plympton, and that NSTAR Electric Company shall serve a copy of this Order on the Town of Plympton Board of Selectmen, Town of Plympton Planning Board, and the Plympton Zoning Board of Appeals 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,

_____
Paul J. Hibbard, Chairman

_____
Tim Woolf, Commissioner

_____
W. Robert Keating, 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.