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I. INTRODUCTION

On April 25, 1995, New England Power Company ("NEPCo" or "Company") filed a petition with the Department of Public Utilities ("Department") for an exemption from the operation of the zoning by-laws of the Town of Millbury. In its petition, the Company stated that it seeks a zoning exemption in order to construct, maintain, and operate modifications to the existing Millbury electric substation facilities, which are located on 20 acres of land owned by NEPCo between Grafton and Providence Streets in Millbury, Massachusetts. These modifications include the relocation of a substation and related equipment, a 115 kV capacitor bank, seven 69 kV transmission lines, and three 115 kV lines out of their present location within the Blackstone River flood plain. The petition was docketed as D.P.U. 95-58.

The Company is requesting, pursuant to G.L. c. 40A, § 3, exemptions from the following sections and subsections of the Millbury zoning by-laws: (1) Section 35.22 (Water Protection By-law); (2) Section 35.23 (Wetlands By-law); (3) Section 36.3 (Floodplain By-law); and (4) Section 42 (Earth Removal By-law) (Exh. NEP-1, at 6; Tr. at 9-12). The petitioner is an electric company as defined under G.L. c. 164, § 1, and is authorized to generate, transmit, purchase, sell, and distribute electricity (Exh. NEP-1, at 1, 6).

II. PROCEDURAL HISTORY

Pursuant to notice duly issued, the Department conducted a public hearing in Millbury on August 29, 1995 to afford interested persons an opportunity to be heard. No petitions for leave to intervene were filed.

In support of its petition, the Company sponsored the testimony of six witnesses: John J. Marczewski, principal engineer at PLM Electric Power Engineering; Leo R. Gillis, engineer in the Substation Engineering Department at NEPCo; William A. Lattrell, scientist and principal at Environmental Services; Nancy Sala, vice president of business services at Massachusetts Electric Company ("MECo"); Deborah E. Weil, scientist at Bailey Research Associates; and David F. Smith, engineer in the Transmission Line Engineering Department at NEPCo.

The evidentiary record includes 20 exhibits sponsored by NEPCo. In addition, the Department entered thirteen exhibits into the record, consisting of responses from the Company to Department information requests.

III. STANDARD OF REVIEW

In its petition for a zoning exemption, the Company seeks approval under G.L. c. 40A, § 3, which, in pertinent part, provides:

> 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 [D]epartment of [P]ublic [U]tilities 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...

Under this section, the Company first must qualify as a public service corporation (see Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975)), and establish that it requires an exemption from the local zoning by-laws. The Company then must demonstrate that the present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare.

In determining whether a company qualifies as a "public service corporation" for purposes of G.L. c. 40A, § 3, the Supreme Judicial Court 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, supra, at 680.

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. Id. at 685-686; 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). 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. Id.; Save the Bay, supra, at 685.

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. Martorano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, supra, at 591; Wenham v. Department of Public Utilities, 333 Mass. 15, 17 (1955). 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. Id.

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 need for, or public benefits of, the present or proposed use (see Massachusetts Electric Company, D.P.U. 95-57, at 5 (1995) ("MECo, D.P.U. 95-57"); New England Power Company, D.P.U. 92-278/279/280, at 19-22 (1994) ("NEPCo, D.P.U. 92-278/279/280"); Tennessee Gas Pipeline Company, D.P.U. 85-207, at 6-9 (1986) ("Tennessee")); (2) the present or proposed use and any alternatives identified (see MECo, D.P.U. 95-57, supra, at 6; NEPCo, D.P.U. 92-278/279/280, supra, at 19; Tennessee, supra, at 18-20); and (3) the environmental impacts or any

other impacts of the present or proposed use (see MECo, D.P.U. 95-57, supra, at 5-6; NEPCo, D.P.U. 92-278/279/280, supra, at 20-23; Tennessee, supra, at 20-25).

After examining these issues, the Department balances the interests of the general public against the local interest and determines whether the present or proposed use is reasonably necessary for the convenience or welfare of the public.[1,2]

IV. DESCRIPTION

A. Need for the Proposed Project

The Company stated that the proposed project would improve operation of the existing 69 kilovolt ("kV") transmission supply system in the Millbury area by replacing and relocating system components at the Millbury No. 1 substation that are at or near the end of their service life (Exh. NEP-3, at 4). The Company added that, as a result of environmental and operational constraints, it would be difficult to replace these components at the substation's present location (id.).

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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." G.L. c. 30, § 61. Pursuant to 301 C.M.R. § 11.01(3), these findings are necessary when an Environmental Impact Report is submitted by a company to the Secretary of Environmental Affairs, and should be based on such Environmental Impact Report. Where an Environmental Impact Report is not required, c. 30, § 61 findings are not necessary. 301 C.M.R. § 11.01(3).

The record indicates that no Environmental Impact Report was required for the proposed project (Exh. DPU-2).

[2] The Company provided a copy of a letter from the Massachusetts Historical Commission, dated December 28, 1995, consistent with the requirements of 950 C.M.R. § 71, stating its determination that no adverse effect would result from the construction and operation of the proposed project (Exh. DPU 1-6c, att.).

NEPCo indicated that the existing Millbury No. 1 substation is part of a complex of four substations, known as Millbury No. 1, No. 2, No. 3, and No. 4, and connecting power lines that supply the Millbury area ("Millbury Complex")[3] (Exhs. NEP-3, at 2-3; NEP-5; NEP-6). The Company noted that the Millbury Complex is interconnected to other substations in the New England transmission network via five 345 kV, nine 115 kV, and seven 69 kV transmission lines (id.).

The Company stated that electrical facilities at Millbury No. 1 are located in two substation yards separated by the Blackstone River (Exh. NEP-3, at 4). The Company stated that the yard closest to Providence Street ("lower yard") is located along the south bank of the Blackstone River and lies entirely in the Blackstone River flood plain (id. at 4-5). The lower yard contains five 115 kV to 69 kV transformers that connect three incoming 115 kV lines from Millbury No. 2 to seven outgoing 69 kV lines (id. at 3-5). The Company added that three of the five transformers have 13.8 kV tertiary windings which presently supply nearby capacitor banks and provide backup station service power to Millbury No. 3 (id.). The Company stated that the lower yard also contains 69 kV and 13.8 kV switchgear and a two-story brick control building (id.).

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[3] The Company stated that Millbury No. 2 is a 115 kV switching station which, in addition to supplying Millbury No. 1 via three electric transmission lines, also supplies Millbury No. 4 using two of the same three lines (Exh. NEP-3, at 3). The Company also stated that Millbury No. 4 supplies 13.8 kV distribution feeders that serve the central Massachusetts Towns of Millbury, Grafton, and Sutton (id.). The Company further stated that Millbury No. 3 is a 345 kV switching station and therefore is not directly interconnected with the other three substations in the Millbury Complex (id.).

The Company stated that the yard on the north bank of the Blackstone River ("upper yard") consists of a steel structure containing 115 kV switches and tie points connected to the three 115 kV lines from Millbury No. 2 (id.). The Company explained that the 115 kV facilities in the upper yard supply the lower yard via six 115 kV lines that cross the Blackstone River (id.). The Company added that the upper yard is at an elevation approximately ten feet higher than the lower yard, and is not located within the Blackstone River flood plain (id.).

The Company's witness, Mr. Marczewski, testified that because Millbury No. 1 dates back to 1910 and is frequently flooded, it is difficult to operate and maintain (Tr. at 17). The Company stated that, in 1990, several concurrent studies reviewing transmission and distribution systems in central Massachusetts and the Millbury area identified the need for changes in equipment at Millbury No. 1 (Exh. NEP-3, at 3-5). The Company indicated that those studies prompted an additional Millbury system study in 1993, prepared by PLM Electric Power Engineering of Hopkinton, Massachusetts ("PLM study"), which led to the selection of the proposed project (id.; Exh. DPU-4, att. 1). The PLM study identified several reliability problems at Millbury No. 1, including the need to replace several aged
69 kV circuit breakers, the need for reconductoring due to increased loading under normal and contingency conditions, the poor condition of the existing brick control building, and the substation's location in the Blackstone River flood plain (id.).

B. The Proposed Project and Alternatives

The Company requests a zoning exemption from the Department to relocate equipment located in the lower yard of existing Millbury No. 1, through the construction and use of modifications to the Millbury Complex ("proposed project") (Exh. NEP-1, at 1). The Company stated that the proposed project, which would cost $10 million, would eliminate the facilities presently contained within the lower yard, and functionally consolidate the substation into the existing steel structure in the upper yard, upon which 69 kV and 115 kV switches would be mounted (Exh. NEP-3, at 5; Tr. at 64, 114). The Company stated that the reconfigured substation in the upper yard would be designated the Millbury No. 305 substation (Exh. NEP-4, at 2). The Company added that additional major equipment at the Millbury No. 305 substation would include: 69 kV gas insulated switchgear containing circuit breakers; a 69 kV capacitor bank; a 13.8 kV circuit breaker for station service power supply; and a 20 foot by 40 foot single story control building containing protection, control, and monitoring equipment for the Millbury No. 305 substation (id.).

The Company stated that the transmission lines that presently terminate in the lower yard would also be relocated and terminated in the upper yard (id.; Exh. NEP-4, at 2). The Company indicated that, of the seven 69 kV lines that terminate at Millbury No. 1, five would be relocated on wood pole structures and two on single-circuit, steel pole structures (Exhs. NEP-4, at 2-3; NEP-5; NEP-7).[4] The Company added that the three 115 kV lines that presently terminate in the

[4] The Company stated that conductors used on the relocated 69 kV transmission lines would be sized to match those used on the existing lines (Exh. NEP-4, at 2-3). Where the existing conductor is no longer a standard size being used, the Company

(continued...)

upper yard would be relocated to different terminal structures in the new Millbury No. 305 substation (id.). The Company stated that the number of transformers at the Millbury No. 305 substation would be reduced from the five currently at Millbury No. 1 to three (Exh. NEP-3, at 8).

The Company explained that this proposed development of the upper yard would require the relocation of an existing 115 kV capacitor bank from the upper yard to the southeasterly end of Millbury No. 2 (Exh. NEP-3, at 6).[5] In addition, the Company stated that, although the existing grade of the upper yard would remain unchanged, two small expansions to the upper yard are planned (id. at 5-6). The Company added that the expansions would involve a small extension toward the Blackstone River[6] in order to provide adequate vehicle access to the control building area, and the regrading, widening, and paving of the existing approximately 900 foot access road[7]

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[4](...continued)
added that a standard conductor with at least the same current carrying capacity, and that most closely matches the existing size, would be chosen (id.).

[5] The Company stated that the 115 kV capacitor bank would be connected to an existing 115 kV bus structure at Millbury No. 2, and added that a small expansion of the existing fenced area on the easterly side of that substation would be required to accommodate this addition (Exh. NEP-3, at 6). The Company stated that the proposed expansion would extend approximately 70 feet parallel to Grafton Street, and then southerly for 150 feet until it meets the existing fence line (id.).

[6] The Company indicated that the expansion toward the river would not be located in a wetland or on a river bank (Exh. NEP-2, at 3).

[7] The Company stated that, concurrent with the proposed access road improvements, two existing 13.8 kV distribution feeder circuits would be placed underground in a new duct bank (Exh. NEP-3, at 6). The Company added that the new duct bank would also be used for low voltage control wiring between the Millbury No. 305 substation and both Millbury No. 2 and Millbury No. 4, as well as for a 13.8 kV service power supply for (continued...)

to allow for a minimum safe width for vehicle access to the Millbury No. 305 facilities (id.; Exh. NEP-16). The Company stated that three environmental permits would be required for the proposed project: (1) Millbury Conservation Commission - Order of Conditions; (2) Massachusetts Department of Environmental Protection ("DEP") - Water Quality Certificate; and (3) The U.S. Army Corps of Engineers - Massachusetts Programmatic General Permit, pending a DEP Water Quality Certificate (Exh. DPU 1-6c). The Company provided copies of the Millbury Conservation Commission's Order of Conditions and the DEP Water Quality Certificate (id.). With respect to the third and final permit required, the Company indicated that, having received the DEP Water Quality Certificate -- a prerequisite and final condition of issuance -- the U.S. Army Corps of Engineer's permit would be forthcoming (id.).

The Company stated that it considered two alternatives to the proposed project: (1) the reconstruction and rehabiliation of Millbury No 1's 69 kV facilities in their existing location, and (2) the construction of a new 115 kV to 69 kV substation on a new site to the west of Millbury No. 1 (id.). The Company added that, although both alternatives were technically feasible and less expensive than the proposed project, both exhibited greater environmental impacts than the proposed project (id.; Tr. at 19-20). The Company also indicated that the proposed project was selected based on the locational factors, the reduction in the land area required for the substation facilities, and enhanced reliability associated with the relocated and upgraded substation's ability to carry the necessary electrical load (Exh. NEP-3, at 6-7).

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[7](...continued)
Millbury No. 2 (id.).

C. Impacts of the Proposed Project

In accordance with its responsibility to undertake a broad and balanced consideration of all aspects of the general public interest and welfare, the Department examines the impacts associated with the proposed project to identify any significant impacts that would likely occur during construction and operation of the proposed substation upgrade.

1. Construction and Traffic

The Company indicated that, should it receive all the necessary permits, construction would commence in the summer of 1996 and continue for approximately two years (Tr. at 59, 125). The Company stated that the normal construction hours at the Millbury Complex would be from 7:00 a.m. to 5:00 p.m., Monday through Friday, although there would be occasions when longer hours and/or weekend work might be required to minimize customer outages (Exhs. NEP-3, at 9; NEP-4, at 5).

The Company stated that access to the substation construction site would be over existing public and private roads (Exh. NEP-3, at 9). The Company added that area traffic would not be substantially affected by the proposed construction because the access roads do not normally carry a significant volume of traffic (id.).

2. Electric and Magnetic Fields ("EMF")

The Company stated that magnetic field levels would not increase at the periphery of the Millbury Complex or along the right-of-way ("ROW") edges of associated transmission line corridors as a result of operation of the proposed project (id. at 8; Exh. DPU 1-4, att. 5; Tr. at 32-33). The Company stated that the relocation of the two 69 kV transmission lines would

provide an opportunity for the rearrangement of phase conductor positions along two segments of a single 69 kV transmission line corridor (Exh. NEP-3, at 8; Tr. at 32-33). The Company further stated that the conductor rearrangement would result in a decrease in magnetic field levels along both corridor segments (id.).[8] The Company added that rearranging phase positions along the remaining five 69 kV transmission lines at the Millbury Complex would not significantly impact EMF levels at ROW edges (id.).

The Company provided calculations of the estimated magnetic field levels at the two nearest residences to Millbury No. 1 and the proposed Millbury No. 305 substation before and after the proposed project (RR-DPU-4). The Company indicated that the two residences are located on the 69 kV corridor segment extending north of Grafton Street, one on the east side of the ROW, and one on the west side of the ROW (id.). The Company estimated that levels at both residences would decrease 2 milligauss ("mG") with operation of the proposed substation design, decreasing from 11 mG to 9 mG at the east-side residence, and from 7 mG to 5 mG at the west-side residence (id.).

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[8] The Company indicated that magnetic fields from two of the 69 kV lines that exit the existing Millbury No. 1 substation , i.e., the I-35 and X-24 lines, would decrease along two segments with operation of the proposed project (Exhs. NEP-4, at 5; NEP-18). The Company indicated that the affected segments include (1) a portion of the 69 kV corridor extending to the north of Grafton Street, and (2) a portion extending to the south of Grafton Street (id.).

3. Hazardous Substances

The Company indicated that transformer oil would be used at the proposed project (Exhs. DPU 1-4, att. 1 at 8; NEP-3, at 7). The Company stated that transformer mineral oil dielectric fluid ("MODF") containment pits would be constructed under the transformers at the Millbury No. 305 substation as part of a spill prevention containment and countermeasures ("SPCC") plan (id.). The Company indicated that transformer oil containment sumps would be fabricated by excavating earth under the base of the transformers, installing a containment fabric, and backfilling the pits with stone (id.). The Company explained that the transformers at the Millbury No. 305 substation would also be equipped with low liquid level indicators that immediately alert the substation's dispatcher in the event of a spill (Exh. NEP-3, at 7). The Company stated that SPCC provisions would provide for the construction of a passageway between the transformers and the 69 kV switchgear to protect the ground from inadvertent spills from MODF handling equipment (id. at 8).[9] The Company further stated that a concrete berm would be constructed along the perimeter of the Millbury No. 305 substation adjacent to the Blackstone River and the wetlands as an additional measure to help contain an unexpected release of MODF or vehicular oil (id.). The Company added that the access road plans for the Millbury No. 305 substation include a drainage containment area to control contaminants associated with storm water runoff and accidental spills from vehicles (id.; Exh. NEP-12).

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[9] The Company stated that the substation yard would be surfaced with crushed stone to buffer and dissipate accidental spills of relatively small quantities of oil from vehicles or electrical equipment (Exh. NEP-3, at 8).

4. Wetlands

The Company described mitigation practices that it would use to offset impacts to wetland areas during construction of the proposed project (Exh. NEP-4, at 4). The Company stated that work in, or adjacent to, wetland areas and surface waters would be conducted using staked hay bales to filter active sediment caused by construction activity (id.; Exh. NEP-16). The Company further stated that where it is necessary to enter wetland areas, access will be via a temporary swamp mat road (Exh. NEP-4, at 4).[10] The Company added that the only permanent disturbance to wetland vegetation would be due to the placement of new transmission structures necessary to realign the E-5 and F-6, 69 kV transmission lines to extend from the proposed Millbury No. 305 substation in a westerly direction across the lower yard of the existing Millbury No. 1 substation and the Blackstone River (id.; Exh. NEP-7).

The Company's witness, Mr. Lattrell, stated that it is likely that the lower yard of Millbury No. 1 is in a ten-year flood zone, based on the high frequency of flood occurrences (Tr. at 115). The Company provided a flood insurance rate map[11] for the Town of Millbury that delineated 100-year and 500-year[12] floodplain zones in the general area of the proposed project (id. at 116-

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[10] The Company stated that swamp mats are large timbers bolted together to form mats that measure approximately four feet wide by sixteen feet long (Exhs. NEP-4, at 4; NEP-7). The Company added that these mats are placed side by side in wetland areas to form a roadway over which construction equipment travels (id.).

[11] The Company indicated that the flood insurance rate map, dated July 2, 1979, was created under the National Flood Insurance Program of the U.S. Department of Housing and Urban Development (Exh. NEP-1, att. C; Tr. at 116).

[12] Mr. Lattrell testified that the term "500-year floodplain" is hypothetical because it is based on a storm of biblical magnitude that has not yet occurred in the Millbury area

(continued...)

117). Mr. Lattrell testified that the proposed upper yard project area is outside both the 100-year and 500-year floodplain zones (id.).

The Company presented information concerning changes in flood storage areas and in the profile across the existing 100-year floodplain before and after implementation of the proposed project (RR-DPU-6; RR-DPU-7; RR-DPU-8). In order to offset the loss of 10,152 cubic feet of floodplain storage capacity incurred as a result of the proposed access road improvements, the Company stated it would excavate an area for additional floodplain storage capacity in close proximity to the access road, providing an additional 24,840 cubic feet of storage (RR-DPU-6; RR-DPU-8).[13]

The Company stated that removal of the control building at Millbury No. 1 would result in an additional 1,215 cubic feet of floodplain storage (RR-DPU-7). The Company also stated that, following implementation of the proposed access road improvements, the cross-sectional flow area over the roadway in a 100-year flood would be reduced to 65 square feet from its present area of 465 square feet (RR-DPU-6). The Company noted that the reduction in floodway capacity at the access road crossing would be in an area that functions as a backwater in a 100-year flood (Tr. at 119-120).[14] In order to maintain the existing hydraulics of the backwater area

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[12](...continued)
(Tr. at 72-73, 117-118).

[13] The Company indicated that its proposed amount of additional floodplain storage is nearly 2.5 times that required under the Wetlands Protection Act (RR-DPU-8).

[14] The Company further indicated that although an increase in elevation at the lowest point along the existing access road would occur following implementation of the proposed access road improvements, the increase would be one foot or less (Exh. NEP-

(continued...)

on both sides of the access road, the Company stated that, in conjunction with the proposed access road improvements, a low point would be maintained along the roadway to allow floodwaters to overflow the road during a 100-year flood (id.; RR-DPU-6).

The Company indicated that, under a 500-year flood, the floodplain area crossed by the access road would extend to the main channel of the Blackstone River both upstream and downstream of the upper yard and thus would function as part of the floodway for downstream flow rather than as a backwater (id.).[15] The Company noted that the proposed access road would reduce the cross-sectional area of the 500-year floodway, but added that the removal of structures and equipment in the lower yard would increase the cross-sectional area of the floodway directly bordering the main channel of the Blackstone River

(Tr. at 124).[16]

5. Other

Regarding the visual impacts of the proposed project on the nearby community, the Company stated that once substation facilities are removed from the lower yard, the lower yard

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[14](...continued)
12). The Company asserted that the net reduction in cross-sectional flow area at the access road crossing would have negligible effect on the backwater flow to the west across the access road (RR-DPU-6). The Company explained that its access road design would permit the backwater area west of the access road to still receive the same volume of water over a slightly longer period of time (id.).

[15] The Company indicated that the upper yard would become an island surrounded by floodwaters during a 500-year flood (Tr. at 117).

[16] The Company stated that the removal of the control building from the lower yard would provide an additional cross-sectional area of 142 square feet across the 100-year floodway (RR-DPU-7).

will be graded and landscaped with native vegetation to help screen portions of the Millbury No. 305 substation from Providence Street (Exh. NEP-3, at 7).

With respect to noise, the Company stated that existing transformer sound levels at nearby residences, currently masked by ambient sound levels, would be further decreased by reducing the number of transformers from five to three at the Millbury No. 305 substation (id. at 8). In support thereof, the Company provided the results of a sound study performed to analyze the transformer noise level impacts of the proposed project on the three closest residences (id.; Exh. DPU 1-4, att. 2). The sound study indicated an average existing ambient nighttime sound level of 38.5 decibels ("dB")[17] in the vicinity of the Millbury No. 1 substation (Exh. DPU 1-4, att. 2). The sound study concluded that, following completion of the proposed project, transformer noise levels at the three residences would decrease between a range of 3 dB to 5.8 dB from the present levels emanating from the Millbury Complex (id.).

V. ANALYSIS AND FINDINGS

NEPCo is an electric company as defined by G.L. c. 164, § 1, authorized to generate, distribute, and sell electricity. NEPCo/MECo, D.P.U. 93-101, at 2 (1994); NEPCo, D.P.U. 92-270, at 1-2 (1994). Accordingly, the Company is authorized to petition the Department as a public service corporation for the determinations sought under G.L. c. 40A, § 3, in this proceeding.

G.L. c. 40A, § 3, authorizes the Department to grant to public service corporations exemptions from local zoning ordinances or by-laws if the Department determines that the

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[17] The Department notes that the term "decibel(s)" or "dB" is a unit of measure of sound pressure level.

exemption is required and finds that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public. With respect to the Company's petition pursuant to G.L. c. 40A, § 3, the Company seeks exemptions from the operations of article 3, subsections 35.22, 35.23, 36.3, and article 4, section 42 of the zoning by-laws of the Town of Millbury. Subsection 35.22 would prohibit any filling activity in floodplains; Subsection 35.23 would limit any filling, removal, or building on banks, marshes, swamps, or flat borders on inland waters without a special permit; Subsection 36.3 would prohibit building activity in floodplain districts and severely restrict other construction-related activities; and Section 42 would limit the amount of earth removal permissible without a special permit. Based on its review, the Department concludes that these sections and subsections of the by-laws could impede construction and implementation of the Company's proposed project. Therefore, the Department finds that the Company's proposed project requires the petitioned exemptions from the operation of said sections and subsections of the zoning by-laws of the Town of Millbury.

Under G.L. c. 40A, § 3, the Department must examine whether the Company's proposed use of the land and structures as set forth in its petition is reasonably necessary for the convenience and welfare of the public. In determining whether the proposed project is reasonably necessary for the convenience or welfare of the public, the Department first examines the need for, or the public benefits of, the present or proposed use. The Department then examines the environmental and other impacts of the project, and considers the identified alternatives. Finally, the Department must balance the interest of the general public against the local interest.

Regarding the need for, or the public benefits of, the proposed use, the Company presented initial and updated studies which identified problems involving the reliability of the existing system. The studies indicated the need to replace several aged 69 kV circuit breakers, to reconductor, and to repair or replace the existing brick building. The record clearly indicates that elements of the regional 69 kV transmission supply system at the Millbury No. 1 substation are approaching the end of their useful life, thus affecting the potential reliability of the area 69 kV system. Construction of the proposed facility would replace these elements with new supply system elements and provide for increased reliability of the system. Based on our review of the record, the Department agrees with the Company that implementation of the proposed project would provide benefits as a result of improved reliability in the greater Millbury area. Accordingly, the Department finds both a need for, and public benefit of, the Company's proposed construction and operation of modifications to the existing Millbury electric substation facilities.

The record indicates that the Company has considered possible environmental and land use impacts of the proposed Millbury No. 305 substation that may be of concern to the surrounding community including EMF, hazardous wastes, wetland, visual and noise impacts. The record demonstrates that the Company has also considered impacts related to the construction of the proposed project and its effect on traffic and on flood plain capacity.

The record indicates that although the Company plans to maintain the existing level of electric power processed by the proposed substation and delivered to the surrounding community, magnetic fields in the vicinity of the proposed project will be reduced from their present levels due to a simultaneous change in the phase position of 69 kV transmission line conductors along a

nearby transmission corridor. The record further indicates that, although the proposed project is likely to have only a minor visual impact on the surrounding community to the southwest of the proposed site, the Company's proposed regrading and landscaping of the lower yard will help screen the Millbury No. 305 substation from traffic and pedestrians along Providence Street. In addition to the increased screening and expected magnetic field reductions, the Company stated that it will enact a number of mitigation measures, including: (1) confining construction activities at the new substation site to normal construction hours whenever possible; (2) using transformer oil containment sumps under the transformers, as well as a spill prevention and containment plan to help prevent soil contamination; (3) using hay bales to filter sediment activated in or adjacent to wetland areas due to the proposed construction; and (4) decreasing transformer noise emissions from the proposed substation due to the elimination of two transformers presently in use at the Millbury No. 1 substation.

With respect to the proposed access road changes in the Blackstone River flood plain, the record indicates that the affected area of the flood plain essentially serves as a backwater during a 100-year flood, and it potentially serves as a floodway for downstream flow during a 500-year flood. The Company would replicate flood plain storage capacity west of the access road in an amount nearly two and one-half times that lost during a 100-year flood as a result of the access road changes due to construction of the proposed project. The low point along the access road would be no more than one foot higher than that along the existing road, and backwater flow over the road would be maintained, albeit at a lower rate, during a 100-year flood. Any effect of access road changes on floodwaters during a 500-year flood would be minimal, and likely limited

to adjacent unoccupied land areas owned by the Company. Significant offsetting benefits for downstream flood passage during all floods would be realized by removal of existing substation structures and equipment from the lower yard adjacent to the main channel of the Blackstone River.

Thus, the Department finds that the proposed project would improve the functional operation of the Millbury No. 1 substation and would provide a community environmental benefit by removing substation structures and equipment from the Blackstone River flood plain. The record also indicates that the Company evaluated two reasonable alternatives to the proposed project in the process of developing a strategy to supply the identified service area with a reliable and efficient supply of electric power. The record further indicates that, although both of the evaluated alternatives were less costly than the proposed project, the environmental and reliability benefits of the proposed project outweigh the cost benefits of the identified alternatives.

With implementation of the mitigation measures proposed by the Company supra, and those required in Section VI, infra, the Department finds that the general public interest in developing the Company's proposed Millbury No. 305 substation to supply electric power to the Town of Millbury and the surrounding areas outweigh the minimal impacts of the Company's proposed project on the local community. Accordingly, the Department finds that the proposed use of the land and structures as set forth in the Company's petition are preferable for said purpose to the alternatives identified by the Company, and reasonably necessary for the convenience or welfare of the public.

Therefore, the Department finds the proposed project is necessary for the public convenience or welfare of the public and is preferable for said purpose to the alternatives identified by the Company.

VI. ORDER

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

ORDERED: That the Company's petition be allowed and that the proposed substation design and related facilities, as described in the Company's exhibits on file with the Department, be exempt from the operation of the following sections of the zoning by-laws of the Town of Millbury, pursuant to G.L. c. 40A, § 3, to the extent that the design and related facilities are used for electric supply purposes:

Article 3, Section 35 of the By-Laws of the Town of Millbury, Subsections 35.22 and 35.23, page 1191; Article 3, Section 36 of the By-Laws of the Town of Millbury, Subsection 36.3, pages 1193-1194; and Article 4, Section 42 of the By-Laws of the Town of Millbury, Subsections 42.1, 42.2, 42.3, and 42.4, page 1196; and it is

FURTHER ORDERED: That the Company shall comply with the following requirements:

(1) That the Company shall implement all mitigation measures proposed by the Company in this proceeding;

(2) That the Company shall file with the Chief of the Millbury Fire Department, and any other applicable Town officials, an amended spill prevention, containment and countermeasures

plan, which shall include all mitigation measures proposed by the Company in this proceeding for the purpose of preventing releases of hazardous substances;

(3) That the Company shall take all necessary measures to ensure that, during construction, all fill material is clean and free from hazardous materials and construction debris, and that, upon completion of the proposed construction, all proposed project-related substation and former substation sites within the Millbury Complex are clear of all construction debris, including any site preparation and excavation debris;

(4) That the Company shall take all necessary measures to preclude unauthorized entry into the Millbury Complex, both during and after construction hours;

(5) That the Company shall take all necessary measures to ensure that any disruptions to local traffic, due to the construction and proposed project-related activities at the Millbury Complex, are minimized to the greatest extent possible; and

(6) That the Company shall take all necessary measures to ensure that construction equipment and materials for the proposed project do not arrive or operate at the Millbury Complex before 7 a.m. on any day; and it is

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

FURTHER ORDERED: That the Company shall obtain all other governmental approvals necessary for this project before its construction commences; and it is

FURTHER ORDERED: That the Secretary of the Department shall transmit a certified copy of this Order to the Clerk of the Town of Millbury; and that New England Power Company shall serve a copy of this Order upon the Conservation Commission, EMF Committee, Planning Board, and Town Selectmen of the Town of Millbury 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,

_____
John B. Howe, Chairman

_____
Mary Clark Webster, Commissioner

_____
Janet Gail Besser, Commissioner

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 modifiedd or set aside in whole or in part.

Such petition for appeal may be filed with the Secretary of the Commission within twenty days after the date of service for 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 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.
(Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).

D.P.U. 95-58

Petition of New England Power Company for approval by the Department of an exemption from the operation of the zoning ordinance of the Town of Millbury with respect to the construction and use of modification to the Petitioner's existing Millbury Substation complex in the Town of Millbury.

APPEARANCE: Kathryn J. Reid
New England Power Company
25 Research Drive
Westborough, Massachusetts 01581
Petitioner