D.T.E. 06-37

Petition of New England Power Company, d/b/a National Grid, pursuant to G.L. c. 164, § 72, for approval to construct and operate a transmission line and ancillary facilities in the Towns of Uxbridge and Northbridge

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I. INTRODUCTION

A. Description of the Proposed Project

On April 7, 2006, pursuant to G.L. c. 164, § 72, New England Power Company, d/b/a National Grid ("NEP" or "Company") filed a petition with the Department of Telecommunications and Energy ("Department") seeking a determination that the proposed 115 kV transmission line in the Towns of Uxbridge and Northbridge is necessary, serves the public convenience and is consistent with the public interest. The matter was docketed as D.T.E. 06-37.

The Company requests approval to construct and operate an overhead 115 kV transmission line, approximately 1.3 miles in length, extending from NEP's existing R-144 transmission line in Uxbridge, continuing in a northeasterly direction along an existing private right-of-way ("ROW"), and terminating at the Company's Whitins Pond #320 ("Whitins Pond") substation in Northbridge. NEP's proposed line would parallel an extant 115 kV transmission tap line connecting the Company's existing Q-143 transmission line and Whitins Pond substation via the same ROW.[1] In addition to the construction herein proposed, the Company plans to install a second transformer at the Whitins Pond substation and upgrade the existing substation transformer.

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[1] The Department of Public Utilities authorized construction of this tap line in Order D.P.U. 18685 on August 2, 1978.

B. Procedural History

On June 14, 2006, after notice duly issued, the Department conducted a public hearing at Northbridge Town Hall in Whitinsville. The Department received no petitions to intervene or otherwise participate in the proceeding. The Department conducted an evidentiary hearing on the Company's petition on September 28, 2006.

In support of its petition, the Company presented the testimony of the following witnesses: (1) David J. Beron, Project Manager for National Grid USA Service Company; (2) Roger D. Cox, Distribution Design Manager for National Grid; (3) Mark A. Stevens, Senior Engineer for NEP; (4) F. Paul Richards, Consulting Environmental Engineer for National Grid USA Service Company; (5) Daniel McIntyre, Principal Civil Engineer for National Grid; and (6) Marc Bergeron, for BSC Group, Inc. The Company responded to 55 information requests and to six record requests issued by the Department.

II. STANDARD OF REVIEW

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]

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[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

(continued…)

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 (1962).

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

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[2] (…continued)
estimate showing in reasonable detail the cost of the line, and such additional maps and information as the Department requires.

alleged and will serve the public convenience and is consistent with the public interest.[3]

III. DESCRIPTION

A. Overview

NEP proposes to install a second 115 kV transmission tap line within its existing ROW from the Whitins Pond substation, off Castle Hill Road in Northbridge, to a tap point with the Company's existing 115 kV transmission mainline, R-144, south of Rawson Road in Uxbridge (Exh. NEP-FPR-1, at 3). The Company would construct its proposed tap line project along new single-pole transmission structures ranging in height from 65 to 80 feet above grade (id.). The proposed project would cover approximately 7000 linear feet (1.3 miles) and lie approximately 40 feet northwest of, and parallel to, an existing Company-owned transmission tap line that presently occupies the ROW (id.).

We summarize below the evidence presented by NEP with respect to the need for, alternatives to, and impacts of its proposed transmission line project.

B. Need for the Proposed Project

The Company indicated that the Uxbridge/Milford power supply area ("PSA"),[4]

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[3] 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), these findings are required if the Secretary of Environmental Affairs has required an Environmental Impact Report ("EIR") for the project. In the instant case, the Secretary of Environmental Affairs has determined that no EIR is required (see Environmental Monitor, Vol. 66, Issue 2, May 24, 2006). Accordingly, Section 61 findings are not necessary in this case.

[4] The Uxbridge/Milford PSA includes approximately 25,000 National Grid customers in (continued…)

predominantly made up of typical suburban/rural land use, is currently served by long distribution feeders radiating out from the Whitins Pond and Uxbridge substations (Exh. NEP-RDC-1, at 9). The Company operations at the Uxbridge substation primarily rely on two 40 MVA transformers supplying five feeders; from the same location, it also operates an unregulated feeder supplying the Mendon substation and a regulated, dedicated feeder connected to the Riverdale Mill manufacturing facility in Northbridge (id. at 6). The Company indicated that the Whitins Pond substation -- the system location directly affected by the proposed project -- consists of one 20 MVA transformer supplying three feeders, lines 320 W2, 320 W1, and 320 W3 (id.). The Company indicated that line 320 W2 ends in Douglas, and that lines 320 W1 and 320 W3 extend into Northbridge, Uxbridge and Upton (id.; Tr. at 31-33). The Company stated that all customers supplied from the Whitins Pond substation are presently at risk of experiencing prolonged outage if a problem were to occur with the existing single substation transformer or transmission tap line (Exh. NEP-RDC-PF at 6).

The Company stated that added supply and distribution capacity is needed to address thermal overload concerns and maintain reliability for the Uxbridge/Milford PSA (Exh. NEP-RDC-PF at 2). In support, the Company provided a study of the Uxbridge/Milford PSA for the ten-year period 2005 through 2015 ("Uxbridge/Milford Area Study") (Exh. NEP-RDC-PF at 2). The Company detailed major distribution capacity problems it had identified in its analysis of the Uxbridge/Milford PSA, beginning in 2004 (id. at 4). These included thermal

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[4] (…continued)
the communities of Blackstone, Douglas, Hopedale, Mendon, Milford, Millville, Northbridge, Sutton, Upton, Uxbridge and Bellingham (Exh. NEP-RDC-PF at 2).

overloads under normal operations at a number of points on the supply and distribution system during peak loading levels; and contingency thermal overloads caused when a supply transformer, carrying its normal peak load, receives additional load from a tripped transmission line or supply transformer (id. at 3-4).

The Company stated that, assuming forecasted 2005 base case load, the Uxbridge/Milford Area Study indicates that existing sub-transmission system elements have already reached 90 percent of capacity under normal operation, or would do so within the relatively short-term planning horizon (Exh. NEP-RDC-1, at 9; DTE-RR-3). The Company indicated, for example, that the existing T1 supply transformer at the Whitins Pond substation was projected to reach 90 percent capacity in 2005 and that two existing feeder lines from Whitins Pond substation, lines 320 W1 and 320 W2, would likely reach 90 percent capacity in 2010 and 2011, respectively (Exh. NEP-RDC-1, at 9). The Company further indicated that the existing T1 supply transformer at Uxbridge substation would reach 90 percent capacity in Year 2008, and feeder lines 321 W1, 321 W2, 321 W4, 321 W6 and 321 W9 would reach 90 percent capacity within Years 2007 to 2010 (id. at 9, 10).

Based on analysis it conducted as part of the Uxbridge/Milford Area Study, the Company also indicated that, as of 2005, the 320 W2 and 321 W4 feeders that supply Douglas exceeded Feeder Design Criteria for a peak load, worst case outage (service interruption of 20 megawatt hours ("MWHrs")) (Exh. NEP-RDC-1, at 10).[5] The Company noted that the 320 W2 feeder, originating at Whitins Pond substation, is linked by a direct tie-in with the 321 W4

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[5] For a peak load, worst case outage, the Company calculated 21.4 and 22.4 MWHrs of service interruption for feeders 320 W2 and 321 W4, respectively (DTE-RR-1).

feeder, supplied from Uxbridge substation (id.; DTE-RR-1).

The Company noted that it has experienced below-average reliability coincident with its capacity problems and that it did not meet its distribution reliability goal in Massachusetts for service year 2005 (Exh. NEP-RDC-PF at 4). The Company further stated that the five-town area served by the Whitins Pond substation, Sutton, Douglas, Northbridge, Upton and Uxbridge, experienced some of the poorest reliability in its local system (id.).

The Company explained that frequency of interruption and duration of outages in the Whitins Pond service area were both more than twice the 2004/2005 average for the National Grid system in Massachusetts (Exh. NEP-RDC-3). The Company stated that, in its analysis of outage data for a given time period, it used the System Average Interruption Frequency Index ("SAIFI") and the System Average Interruption Duration Index ("SAIDI") (id.). The Company explained that these indices characterize the average number of sustained electric service interruptions for each customer and the average length of time customers went without electric service, respectively (id.).[6]

C. The Proposed Project and Alternatives

The Company proposes to install a new 115 kV transmission tap line from Whitins Pond substation to the existing R144 line in the Q-143/R-144 transmission ROW, at the point of the existing tap of the Q-143 transmission line (Exh. NEP-RDC-PF at 4). The proposed

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[6] The Company stated that the SAIFI is the ratio of the total number of sustained customer interruptions divided by the total number of customers, and is expressed in interruptions per customer per year; the SAIDI is the total minutes of sustained customer interruption durations divided by the total number of customers, and is expressed in minutes per year (Exh. NEP-RDC-3).

project would be approximately 1.3 linear miles long and constructed within the Company's existing ROW (id.). The Company indicated that the proposed new infrastructure would enable the Company to back up and maintain service in the Whitins Pond substation area (id. at 6). The Company indicated that its proposal is consistent with the recommendation of the Uxbridge/Milford Area Study (id. at 2). The Company specified that the Uxbridge/Milford Area Study recommended adding a second 115 kV transmission tap line parallel to, and in the same ROW as, the 115 kV transmission tap line already supplying the Whitins Pond substation, and expanding the Whitins Pond substation to allow for the new construction (id.).

The Company indicated that the proposed transmission tap line would be part of a more complete plan to resolve issues on the distribution system supplied from the Whitins Pond substation (Exh. NEP-RDC-PF at 4-5). The Company expects that, separate from the proposed project, it would install: (1) a new 55 MVA, 115/13.8 kV supply transformer to replace the existing 20 MVA unit at the Whitins Pond substation; (2) a second 55 MVA, 115/13.8 kV supply transformer at Whitins Pond substation to serve new load and back up the first transformer automatically; and (3) an enclosed 13.8 kV substation yard with metal-clad switchgear to (a) transfer distribution feeder supply automatically upon the loss of normal supply and (b) protect substation equipment from outages caused by vandalism or nature (id. at 5). The Company anticipated that it would, in addition, increase the length of three existing 13.8 kV distribution feeders connected at Whitins Pond substation to reduce overloading and improve service reliability of feeders and transformers at the Uxbridge #321 ("Uxbridge") substation in Uxbridge, MA (id.). The Company stated that it also plans to install two new 13.8 kV distribution feeder lines connected at Whitins Pond substation to improve service

reliability to the Town of Douglas, MA[7] and to reduce overloading and improve reliability at the Uxbridge substation and at Depot Street #335 ("Depot Street") substation in Milford, MA (id.).

The Company indicated that it had reviewed options other than the proposed project for resolving its identified distribution system problems (Exh. NEP-RDC-PF at 7). The Company stated that, in particular, it had reviewed an alternative involving the addition of a new substation approximately 1.5 miles northwest of the Whitins Pond substation on Main Street, Northbridge, adjacent to Route 146 and the Company's Q-143/R-144 transmission ROW (id.). The Company explained that the new substation location under this alternative is a site where National Grid is currently developing a new regional distribution center (id.).

The Company stated that it chose the proposed project over its identified alternative because the proposed project would be closer to the center of load to be served, would cost less to construct, and would involve less permitting and licensing (id. at 7-8). The Company indicated the proposed plan would cost $16,265,000 compared to $17,695,000 for the alternative (Exh. DTE-G-3). The Company anticipated that the complexity of siting an entirely new substation would delay completion of improvements beyond summer 2007, the next peak loading season (Exh. NEP-RDC-PF at 7-8). The Company expects that with such delay, modifications to the Whitins Pond substation would be required in any case (id. at 8). The

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[7] The Company explained that both the 321 W4 and 320 W2 radial feeders end in Douglas or Manchaug (northwest of Douglas) and that each feeder is the only alternate electric supply for the other (Exh. DTE-N-12). The Company further explained that the area is one of rapidly growing load and neither feeder has sufficient spare emergency capacity to pick up significant load during a distribution supply interruption (id.).

Company explained that without improvements to the Whitins Pond substation before the next peak loading season, electrical loads at the Whitins Pond substation in the summer of 2007 would likely exceed National Grid design criteria (id.).

In summary, according to the Company, improvements to its 115 kV transmission system would allow the Company to expand the Whitins Pond substation, thereby ensuring reliable electric service to customers supplied from the substation (id.). The Company asserted that its proposed project would allow for the necessary infrastructure improvements in the most cost-effective and expeditious manner possible, with the least impact on the area of installation (id. at 8-9). The Company further asserted that the proposed transmission tap line is necessary and in the best interest of the public (id. at 9).

D. Impacts of the Proposed Project

1. Land Use and Visual Impacts

The Company indicated that the use of existing ROW for the proposed project would limit its land use and visual impacts (Exhs. NEP-FPR-PF at 4; DTE-E-2). The Company explained that it had previously cleared much of the land in the ROW along the route of the proposed project in order to install the existing 115 kV line (Exh. NEP-FPR-PF at 4). The Company stated that vegetation management for the proposed project would require clearing an additional strip of trees approximately 40 feet wide along the northwesterly side of the ROW (id.; Exh. NEP-DJB-PF at 8). The Company stated that the additional tree clearing within the ROW would provide sufficient clearances for construction, maintenance, reliability and inspection of the proposed transmission line (Exhs. NEP-FPR-PF at 4; DTE-E-3).

The Company estimated that it would clear a total of 959 trees to expand the west side

of the ROW by 40 feet, and another 28 trees at the substation site to accommodate a temporary crossbus structure (Exh. DTE-E-6). With respect to the tree-clearing process, the Company stated it would cut, chip and remove[8] tall-growing woody species from the area, but would preserve low-growing shrubs and ground cover wherever possible (Exh. NEP-FPR-PF at 4).[9] The Company stated that it is not National Grid policy to top trees along new or expanded ROW, but that, along existing ROW, National Grid policy allows topping selected trees outside of the cleared ROW for vegetation management, e.g., to save a portion of the tree while protecting nearby electric lines (Exh. DTE-E-6).

The Company indicated that, once herbaceous growth in the Company's ROW is cleared, its contractors typically control re-growth on a five-year cycle, primarily with herbicides (Tr. at 102-106). The Company explained that the goal of its vegetation management program is to control incipient woody growth before its removal involves heavier equipment and increased costs (id.). The Company stated that the Town of Northbridge Conservation Commission ("Northbridge Conservation Commission") limited the Company's use of herbicides for installing the proposed project (see Section III.D(2), below), but acknowledged the Company uses selective cutting with spot application of herbicides as part of routine vegetation management (DTE-RR-5(S)-1; DTE-RR-5(S)-2). The Northbridge

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[8] The Company has compiled a list of abutters interested in receiving wood or wood chips after widening of the ROW (Exh. DTE-E-7).

[9] The Company stated that it had received confirmation from the Town of Northbridge Conservation Commission allowing the use of wood chip bales in lieu of a silt fence/hay bale barrier to limit construction impacts from the Company's proposed project (Exh. DTE-E-5(S)).

Conservation Commission emphasized that, prior to performing such work in resource areas, the Company should adhere to its usual practice of reporting to and coordinating with the Town of Northbridge (DTE-RR-5(S)-2).

With respect to clearing vegetation at road crossings and near residences, the Company stated that it would leave vegetated buffers at public road crossings to the extent feasible (Exh. NEP-FPR-1, at 9). The Company indicated that it had discussed planned clearing of vegetation near residences with several abutters to the proposed project, and that it had agreed with one of these abutters to plant evergreen trees in an intervening wooded area to screen his property from the ROW and substation (Exh. DTE-E-7). The Company also stated that it had already held a meeting and scheduled another with abutters to the proposed project on Rawson Road to discuss landscaping options for screening purposes (id.).[10]

The Company stated that, in general, access points to the ROW for use in construction of the proposed transmission line already existed, and required only upgrading (Exh. NEP-FPR-PF at 5). The Company indicated that, in the event that new access points were necessary, it would seek to establish them in upland areas, with landowner permission (id.).

2. Wetlands and Endangered Species

The Company stated that, based on its research, there are no documented occurrences of priority habitat for rare species along the route of the proposed project (Exh. NEP-FPR-1,

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[10] The Company indicated that it had modified the proposed location of a pole north of Rawson Road to accommodate the request from an abutter to reduce the visibility of the proposed transmission line (Tr. at 88). The Company also stated that it would provide abutters with monetary assistance to implement landscaping or other screening improvements on their property that would minimize the visual impacts of the proposed transmission line (id. at 89-90).

at 4). The Company also conducted field studies to estimate the area of, and impacts to, surface waters or wetlands along the route of the proposed project (Exh. NEP-FPR-PF at 5). The Company's field studies identified no surface waters or surface water impacts, but revealed likely temporary impacts to approximately 41,587 square feet ("sq. ft.") of bordering vegetated wetlands ("BVW") (Exh. NEP-FPR-1, at 7).

The Company stated likely temporary impacts would include: (1) impacts to approximately 38,852 sq. ft. of BVW anticipated from clearing of vegetation and placement of swamp mats; and (2) impacts to approximately 2735 sq. ft. of BVW from placement of swamp mats only, without attendant clearing of vegetation (id.). The Company indicated that in those areas of forested wetland that require clearing, re-growth of scrub-shrub or emergent wetland vegetation would occur (Exh. NEP-FPR-PF at 5).

The Company indicated that permanent impacts to 85 sq. ft. of BVW are likely as a result of two pole structures (Exh. NEP-FPR-1, at 7). The Company stated that it had adjusted the spans for the proposed new line to keep as many poles as possible out of wetlands (Exh. NEP-FPR-PF at 5). The Company noted that, to the extent practicable, new poles for the proposed project would parallel the pole locations of the 115 kV transmission line already in place (id.).

The Company indicated that the Uxbridge Conservation Commission and the Northbridge Conservation Commission have issued Orders of Conditions for the proposed project (DTE-RR-5(S)-1; Exh. DTE-E-1-S-D). The Company noted that the Order of Conditions from the Northbridge Conservation Commission precludes use of herbicides for

project installation (Tr. at 80).[11]

3. Electromagnetic Fields

The Company submitted to the Siting Board a copy of a Company-commissioned study entitled, "Assessment of the Magnetic and Electric Fields Resulting from the Addition of the Proposed Whitins Pond Tap Line R144," to evaluate effects of the proposed project on electromagnetic field ("EMF") levels in the vicinity[12] of its planned construction (Exhs. NEP-DJB-PF at 8-9; NEP-DJB-4). The Company stated that, presently, estimated maximum magnetic field levels along the project ROW from existing transmission and distribution facilities are 4.0 milligauss ("mG") at the easterly edge and 0.9 mG at the westerly edge (Exh. NEP-DJB-4, at 4). The Company reported that its study projected decreases in maximum magnetic fields following construction of the proposed facilities, from 4.0 mG to 3.2 mG and from 0.9 mG to 0.6 mG along the easterly and westerly edges of the ROW, respectively (id. at 5; Exh. NEP-DJB-PF at 9-10).

The Company indicated that one goal of its EMF analysis was to identify the design and the phase-wire arrangement for the proposed transmission tap line that would result in the

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[11] The Northbridge Conservation Commission acknowledged the Company uses selective cutting with spot application of herbicides as part of routine vegetation management along the ROW (see Section III.D(1), above) (DTE-RR-5(S)-2). In addition, the Company stated that it had received confirmation from the Northbridge Conservation Commission allowing the use of wood chip bales in lieu of a silt fence/hay bale barrier to limit construction impacts from the Company's proposed project (id.).

[12] The Company indicated that it took baseline EMF measurements and made model comparisons at three locations along its ROW, at Rawson and Sutton Streets (lateral measurement at approximately mid-span, both locations) and at the Whitins Pond substation (lateral measurement outside the substation fence) (Exh. NEP-DJB-4, at 2).

lowest magnetic field levels along the edges of the project ROW (Exh. NEP-DJB-4, at 1). The Company compared EMF levels for three identified design options for the proposed project: (1) to use 2-pole, H-frame supports as are now used for the Q143 line, the existing parallel transmission tap line; (2) to use single pole construction with davit arms arranged in a delta configuration, one arm towards and two arms away from the Q143 line and the center of the ROW; and (3) to use single pole construction with davit arms in a reversed delta configuration, i.e., with two arms toward the Q143 line and the center of the ROW (id. at 2). The Company stated that its study indicated that option 3, with davit arms toward the center of the ROW, would generate the lowest edge-of-ROW magnetic fields of the three analyzed construction options (id. at 7).[13]

4. Other

The Company stated that the proposed project would be proximate to two historic residences listed by the Massachusetts Historical Commission ("MHC") in the Inventory of Historic and Archaeological Assets of the Commonwealth (Exhs. NEP-FPR-PF at 6; NEP-FPR-1, at 15). The Company indicated that it would be able to construct and operate the proposed project entirely outside the property lines of these residences (Exh. NEP-FPR-1, at 15). The Company further indicated that work to be done in the vicinity of the two historic residences would have no negative permanent viewshed effects at either property (id.; NEP-FPR-PF at 6-7).

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[13] The Company stated that selection of configuration option 3 would likely generate lower edge of ROW magnetic fields post-construction than would exist pre-construction with the Q143 alone (Exh. NEP-DJB-4, at 7). The Company attributes this to the cancellation effect of optimized phasing for the proposed new construction (id.).

With respect to traffic, the Company stated that it anticipates no need to re-route traffic in conjunction with work on the proposed project (Exh. DTE-E-21). The Company indicated, however, that it would prepare a traffic-management plan for use should construction-related activities or vehicles block one lane of a roadway during construction of the proposed project (Tr. at 120-121). The Company stated that, as part of its traffic management plan, it would hire a police officer to direct traffic and would use highway cones and appropriate signage to notify motorists of construction activities (id.).

With respect to noise, the Company indicated that neither Northbridge nor Uxbridge has a town noise ordinance (DTE-RR-6; Tr. at 119-120). The Company stated that use of heavy equipment to construct the proposed project, and associated noise, would occur only during normal work hours, 7:00 a.m. to 5:00 p.m., Monday through Friday (Exh. DTE-E-20; Tr. at 113-114). The Company stated that it requires its contractors to use noise-control baffles and mufflers on equipment to reduce noise from construction (Tr. at 114). The Company anticipates that trees between local residences and the Company's ROW would further buffer construction noise, as would the fact that construction would likely take place entirely during seasons (winter/spring) when windows typically are closed (id. at 114-115).

The Company stated that it might have to undertake some electrical work for the proposed project outside normal work hours (Exh. DTE-E-20).[14] The Company explained that to complete the work in question would likely require outages on the Company's existing tap

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[14] The Company explained that it referred, in particular, to a planned cut-over of the proposed line into the existing R-144 line and connection of the proposed line into the Whitins Pond substation (Exh. DTE-E-20).

line and/or on the main transmission line as well as on distribution lines (Exh. DTE-E-20(rev.)). The Company indicated that to limit disruption to its electrical transmission and distribution system, it would need to schedule outages at off-peak hours of service (Exh. DTE-E-20).[15] The Company indicated that it therefore anticipates scheduling the identified electrical work and associated outages on weekends or on weekdays after 5:00 p.m. (Exh. DTE-E-20).[16] The Company stated that it does not expect temporary or other noise impacts in conjunction with the identified electrical work, but that it would contact abutters in the unlikely event there were such an expectation (Tr. 116-117).

The Company indicated that the proposed project would not itself increase noise levels, but that operation of two larger transformers in conjunction with the proposed project would produce a 10-to-12 decibel ("dB") increase in noise levels at the fence line of the Whitins Pond substation, a 10-to-15 dB increase in noise levels at the Company's property line, and an approximately 6 dB increase in noise levels at abutting residences (Tr. at 119-120). The Company indicated that, as part of its proposed project, it would build a wall that would both screen visually the part of the proposed project within the Whitins Pond substation and reduce noise impacts from the Whitins Pond substation on abutters (id.).

IV. ANALYSIS AND FINDINGS

NEP is an electric company as defined by G.L. c. 164, § 1, authorized to generate,

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[15] The Company stated that it anticipates no disruption of service to customers if work occurs at off-peak hours (Exh. DTE-E-20).

[16] The Company indicated that it would confine weekend work to the hours of 8:00 a.m to 4:00 p.m. and notify the nearest abutters to the work area of scheduled activity (Exh. DTE-E-20).

distribute and sell electricity. New England Power Company d/b/a National Grid, D.T.E. 04-4, at 8 (2004). Accordingly, the Company is authorized to petition the Department for a determination under G.L. c. 164, § 72 that its proposed transmission line "is necessary for the purpose alleged, and will serve the public convenience, and is consistent with the public interest." As discussed in Section II, above, the Department, in making this determination, first examines the need for or public benefits of the proposed use. The Department then examines the identified alternatives and the environmental impacts of the project. Finally, the Department balances the interests of the general public with any identified local interests.

As an initial matter, the Department finds that NEP, in its filing under G.L.c. 164, § 72, has complied with the requirement of § 72 that it describe the proposed transmission line, provide diagrams showing its general location, and estimate its cost in reasonable detail.

A. Need for the Proposed Project

The Company has provided, together with the underlying load growth forecasts, a study documenting the need for additional 115 kV transmission to the Whitins Pond substation. The Company has identified specific supply transformer and feeder lines requiring expansion or back-up, and has addressed means of resolving the identified system constraints. The Company's submitted material demonstrates that construction of the proposed 115 kV transmission tap line and installation of certain other equipment at the Whitins Pond substation are necessary to address thermal and reliability concerns for the Uxford/Milford PSA. Accordingly, the Department finds both a need for, and public benefits of, the construction and operation of the proposed transmission tap line from the Whitins Pond substation to the Company's existing R-144 115 kV transmission mainline.

B. The Proposed Project and Alternatives

As noted in Section III.C, above, the Company considered building a substation 1.5 miles northwest of the Whitins Pond substation at the location of a planned new National Grid regional distribution center. The Company considered this alternative to its proposed project to reduce overloading and improve reliability at its Uxbridge and Depot Street substations. The Company's alternative would address the identified need to reduce overloading and improve reliability at the Uxbridge and Depot Street (Milford) substations, and would improve service reliability to the town of Douglas, MA. The record also demonstrates, however, that this alternative would be farther from the center of load to be served, more expensive to construct, and more complex to permit and license than the proposed project.

With respect to the considered alternative, the record shows that delayed construction would likely trigger attendant pressures to modify the Whitins Pond substation as a temporary measure, with associated additional costs. In contrast, the record demonstrates that the proposed project would resolve issues on the distribution system supplied from Whitins Pond substation in a timely and cost-effective manner. The Department finds, therefore, that the Company's decision to pursue the proposed project is reasonable.

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 might occur during construction and operation of the project.

1. Land Use and Visual Impacts

With respect to land use and visual impacts, the record shows the proposed project would be constructed alongside an existing parallel transmission line and one or more planned parallel distribution lines within an existing ROW. The Company would, to the extent possible without compromising system operations, safety, and maintenance, limit tree-clearing to minimize soil disturbance and the potential for erosion. In addition, the Company's vegetation management plan would maintain vegetative screening at the edges of the Company's ROW, and the Company's plan to build a wall at the Whitins Pond substation would provide further visual and noise mitigation to abutting properties at that location.

The record also demonstrates that the Company: (1) would preserve low-growing shrubs and ground cover within its ROW; and (2) anticipates using herbicides in the ROW as part of routine vegetation management to control incipient woody growth. Based on the record, the Company has taken reasonable measures to minimize the land use and visual impacts of the proposed project to the extent possible. Consequently, the Department finds that the Company has established that it will take all reasonable measures to avoid, minimize, or mitigate the land use and visual impacts of the proposed project.

2. Wetlands and Endangered Species

With respect to water resources, the record demonstrates no impacts to surface waters or wetlands. The record demonstrates temporary impacts to 41,587 sq. ft. of BVW, and permanent impacts to 85 sq. ft. of BVW. Of the 41,587 sq. ft. of temporary impacts to BVW, impacts to 2735 sq. ft. would result from placement of swamp mats only, while 38,852 sq. ft would also involve clearing of vegetation. The record shows that the Company would replace cleared vegetation in these areas with growth of the scrub-shrub or emergent wetland type.

The record shows that permanent impacts to wetland would result from installation of two pole structures. The record also shows that the Company has designed the proposed project to keep as many poles as possible out of wetlands.

With respect to protected species, the record indicates no documented occurrences of priority habitat for rare species along the route of the proposed project.

Consequently, the Department finds that the Company has established that it will take all reasonable measures to avoid, minimize, or mitigate the potential wetlands impacts and impacts on rare species associated with the proposed project.

3. Electromagnetic Fields

With respect to EMF, the record demonstrates that construction of the proposed project in the Company's ROW would result in reduction of magnetic fields along both the easterly and westerly edges of the ROW. Consequently, the Department finds that the Company has established that it will take all reasonable measures to minimize the EMF impacts of the proposed supply line, and that the supply line, configured as proposed, will have a positive impact on magnetic field levels in the near vicinity of the project.

4. Other

The record demonstrates that construction and operation of the proposed project would have no impacts on historic resources.

With respect to traffic and safety, the record demonstrates that construction for the proposed project does not require re-routing of traffic. The record also shows that the Company has pledged to develop a traffic management plan for use in case one lane of a roadway is impassable due to construction-related activities or vehicles. The record further

shows that the Company has made a commitment to hire a police officer as necessary to direct traffic and to use highway cones and appropriate signage to notify motorists of construction activities.

With respect to noise impacts, the record demonstrates that construction noise would likely be limited to weekdays from 7:00 a.m. to 5:00 p.m. (normal working hours) and to months of the year when windows typically are closed and therefore provide additional mitigation of noise impacts. The record also shows that some electrical work for the proposed project may have to take place outside normal working hours, but that the Company does not expect the work to involve noise impacts. The record demonstrates that the Company may have to undertake the identified electrical work after 5:00 p.m. on weekdays or on weekends, because completion of the work would require service outages, which would warrant that it be scheduled at off-peak hours to minimize inconvenience. The record also demonstrates that the Company has agreed to conduct any weekend work between the hours of 8:00 a.m. and 4:00 p.m., and to contact abutters in the unlikely event that the Company expects noise impacts.

The record shows that operation of two transformers at the Whitins Pond substation in conjunction with the proposed project would result in a perceptible increase in noise levels at nearby residences. The record also shows, however, that the Company anticipates construction of a wall at the Whitins Pond substation that would mitigate noise impacts from operation of the identified transformers.

Consequently, the Department finds that potential impacts to historic resources and traffic from the proposed project, as well as noise impacts to abutters of the proposed project resulting from its construction and operation, are minimal, and that the Company has

established that it will take all reasonable measures to avoid, minimize, or mitigate these impacts.

D. Conclusion

The Department has found, above, both a need for, and public benefits of, the construction and operation of the new 115 kV transmission line. The Department also has found that NEP's decision to pursue the proposed project, rather than an identified alternative, was reasonable. Based on its analysis in Section IV.C., above, the Department finds that the public interest in the construction of the proposed project would outweigh the adverse environmental impacts of the project. Consequently, pursuant to G.L. c. 164, § 72, the Department finds that the proposed 115 kV transmission project is necessary for the purpose alleged, will serve the public convenience, and is consistent with the public interest.

V. ORDER

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

ORDERED: That the proposed 115 kV transmission project in the Towns of Uxbridge and Northbridge, as described in the petition and exhibits of New England Power Company d/b/a National Grid, is necessary for the purpose alleged, and will serve the public convenience and is consistent with the public interest pursuant to G.L. c. 164, § 72; and it is

FURTHER ORDERED: That New England Power Company d/b/a National Grid work cooperatively with municipal and state officials and affected property owners in Uxbridge and Northbridge to minimize any traffic, noise, visual or other local impacts associated with the proposed transmission project; and it is

FURTHER ORDERED: That New England Power Company d/b/a National Grid shall obtain all other governmental approvals necessary for this proposed transmission project.

By Order of the Department:

_____
Judith F. Judson, Chairman

_____
James Connelly, Commissioner

_____
W. Robert Keating, Commissioner

_____
Brian Paul Golden, Commissioner

_____
Soo J. Kim, 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.