March 26, 2004

D.T.E. 03-130

Petition of Massachusetts Electric Company for a determination by the Department of Telecommunications and Energy, under the provisions of G.L. c. 164, § 72, that a proposed 23 kV overhead electric transmission line in Groveland and Georgetown, Massachusetts, is necessary and will serve the public convenience and is consistent with the public interest.

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I. INTRODUCTION

On December 15, 2003, Massachusetts Electric Company ("MECo" or "Company")[1] filed a petition with the Department of Telecommunications and Energy ("Department") pursuant to G.L. c. 164, § 72, seeking authority from the Department to construct, maintain and operate an overhead line for the transmission of electricity at 23 kilovolts ("kV"), beginning at a connection to New England Power Company's existing King Street #18 Substation ("King Street substation") in Groveland, and continuing to the northeast, east, and southeast along existing rights-of-way for a total distance of approximately 1.6 miles to a connection in Georgetown ("supply line") (Exh. ME-1, at 1). The Company seeks a determination by the Department that the proposed electric transmission line is necessary and will serve the public convenience and be consistent with the public interest (id.). The petition was docketed at D.T.E. 03-130.

On February 9, 2004, after notice duly issued, the Department conducted a public hearing in Georgetown. Ruth E. Matthingly and Viola K. Preston ("Joint Intervenors") filed a timely joint petition to intervene, which was granted by the Hearing Officer on February 19, 2004. In support of its petition, the Company submitted 16 exhibits, which included the testimony of: Brian V. Hayduk, Lead Senior Engineer in the Distribution Planning and Engineering Department at the Narraganset Electric Company; F. Paul Richards, Principal Environmental Engineer in the Environmental Group of National Grid USA Service Company; and Paul E. Burgess, Senior Lead Engineer with Vanderweil Engineers. The Company also

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[1] MECo is a Massachusetts corporation authorized to transmit, purchase, sell and distribute electricity as described in G.L. c. 164 (Exh. ME-1, at 1).

responded to 47 Department information requests and two record requests. The Department also moved one exhibit, a letter from the Joint Intervenors with attached map, into the record. An evidentiary hearing was held on March 9, 2004.

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]

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

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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 estimate showing in reasonable detail the cost of the line, and such additional maps and information as the Department requires.

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

III. DESCRIPTION

A. Overview

MECo proposes to construct, maintain, and operate a new 23 kV overhead supply line in the towns of Groveland and Georgetown (Exhs. ME-1; ME-BVH at 5). The new line would be approximately 1.6 miles long, extending from an interconnection with the King Street

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[3] In addition, the Massachusetts Environmental Policy Act ("MEPA") provides that "[a]ny determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact" ("Section 61 findings"). G.L. c. 30, § 61. Pursuant to 301 CMR 11.12(5), these findings are required if the Secretary of Environmental Affairs has required an Environmental Impact Report ("EIR") for the project. The Company informed the Department that it had determined that no EIR is required for the proposed project (Exh. DTE-39, Att. G at 2). Accordingly, Section 61 findings are not necessary in this case.

Substation in Groveland to an interconnection with the existing 2373 line near Mill Street in Georgetown (Exhs. ME-1; DTE-1, Att. 3). The new line would be mounted overhead on 36 direct-buried single wood pole structures, each 40 to 60 feet tall (Exh. ME-PEB at 3; Tr. at 46-47). Approximately 4400 feet of the new line would be located in Georgetown; the remainder would be located in Groveland (Exh. DTE-39, Att. A at Figure 2).

The Company stated that the proposed supply line would be located on existing rights-of-way, adjacent to and parallel to existing electric power lines (Exh. ME-PEB at 2). From the King Street Substation in Groveland, the new line would be placed between an existing 345 kV line and an existing 23 kV line within a 200-foot wide right-of-way ("ROW") for a distance of approximately 0.3 miles northeast from the substation (id. at 2; Exh. DTE-2, Att. A). From this point, the new line would run approximately 1.3 miles to the east and southeast, parallel to an existing 23 kV line on an existing 80-foot-wide ROW north of Pentucket Pond (Exhs. ME-PEB at 2; PEB-2). On the 80-foot-wide ROW, the poles would generally be 12 to 20 feet from, to the south side of, and generally the same height as poles for the existing line (Exhs. ME-PEB at 3; PBE-4; PBE-5). At its endpoint near Mill Street, the new line would tie into an existing 23 kV line extending from Georgetown toward Rowley and Ipswich (Exh. DTE-1, Atts. B and C; Tr. at 6).

The Company proposes to install the transmission line in order to increase the reliability of MECo's sub-transmission system and to provide load relief for its own customers in the area served by the King Street supply system ("King Street area"),[4] as well as customers

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[4] The King Street supply system serves MECo customers in Amesbury, Boxford, (continued…)

of the Groveland, Georgetown, Rowley, and Ipswich municipal light departments (Exh. ME-1, at 1). We summarize below the evidence presented by the Company regarding the need for the transmission line, project alternatives, and the impacts of the proposed project.

B. Need for the Proposed Project

MECo indicated that in September, 2003, it completed a study of the subtransmission system served from the King Street substation for the ten year period from 2004 to 2013 ("King Street study") (Exh. ME-BVH at 2). The subtransmission system centered at the King Street substation includes six 23 kV lines, four of which would be affected by the proposed supply line:

* Line 2367, which serves the Byfield, Newbury and Newburyport substations on one branch, and the East Boxford substation on a second branch;
* Line 2373, which serves the Byfield, Newbury and Newburyport substations on one branch, and the Searle Street, Rowley and Ipswich Municipal substations on a second branch;
* Line 2394, which serves the Searle Street, Rowley and Ipswich Municipal substations; and
* Line 2377, which serves the West Newbury, Hillside, Amesbury, and Beach Road substations

(Exhs. DTE-1, Atts. A and B; DTE-13).

The King Street study found that, in 2003, the King Street area distribution system experienced the following problems: (1) normal thermal overloads at a number of points during peak load levels; (2) low voltage at the extremities of the system during peak load levels; and (3) contingency thermal overloads (id. at 1). The study projected that:

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[4](…continued)
Haverhill, Newbury, Newburyport, North Andover, Salisbury, Topsfield, and West Newbury, as well as municipally-served customers in Georgetown, Groveland, Ipswich, Merrimac and Rowley (Exh. ME-BVH at 3).

* Line 2373 into Newburyport would experience a normal overload at 91 percent of 2003 peak load;
* Line 2373 would experience overloads and/or low voltages following the loss of either the 2367 line or the 2394 line at 72 to 86 percent of 2003 peak load;
* Line 2367 would experience overloads and/or low voltages following the loss of any of the 2373, 2377, or 2394 lines at 82 percent of 2003 peak load; and
* Line 2394 would experience overloads and/or low voltages following the loss of the 2373 line at 72 to 86 percent of 2003 peak load

(Exh. BVH-1, at 2).[5] The King Street study noted that MECo had implemented a number of interim operating procedures to mitigate these problems during the summer of 2003; however, it recommended that work be done to more permanently address the problems (id. at 1,3).

MECo provided the King Street area load forecast used in the King Street study (Exh. DTE-5, Att. A). The load forecast projected an area-wide average annual growth rate of 2.0 percent for the years 2001-2006, 1.7 percent for the years 2006-2011, and 1.5 percent for the years 2011-2016 (id.). The Company indicated that load growth projections for areas served by MECo were derived from the Merrimack Valley Power Supply area forecast, while forecasts for Ipswich, Rowley, Georgetown, and Merrimac were provided by their respective municipal light departments (Exh. DTE-5). The Company indicated that projections showing that Ipswich summer peak load would grow by 24.73 percent between 2003 and 2004 appeared to reflect "a number of large spot loads … anticipated to come online", but was unable to confirm whether these loads would materialize by summer 2004 (Exhs. DTE-5, Att. C; DTE-47). However, the Company noted that certain of the recommended improvements were

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[5] The King Street study also identified contingency low voltages on the 2377 line, and contingency thermal overloads and low voltages on the 2396 line; however, it stated that these problems are to be addressed as part of a separate longer-term transmission plan (Exh. BVH-1, at 2,3).

needed based on existing conditions (Tr. at 14). The Company stated that if load in Ipswich grew more slowly than anticipated in 2004, the need for the supply line might be delayed for one year (id. at 14-15).

C. The Proposed Project and Alternative

The Company stated that it considered two means of addressing the identified thermal overload and voltage performance issues (Exhs. ME-BVH at 6; BVH-1). Plan 1 would address the voltage and overload issues through the installation of:

* the proposed supply line;
* a 19.2 MVAR, 23 kV substation capacitor bank at Ipswich Municipal substation;
* a new 23 kV 200-foot get-away line (2403) from King Street substation to the 2396 bifurcation;
* reconductoring of portions of the 2394 and 2373 23 kV lines; and
* replacing six 1.8 MVAR, 23 kV pole top capacitors with 2.7 MVAR models

(Exh. BVH-1; ME-BVH at 5).[6]

The Company stated that the new supply line would eliminate the current bifurcation of the 2373 line, creating two independent lines (Exh. BVH-1, at 3). The Company explained that, currently, the 2373 line originates at the King Street substation, runs 1.6 miles to the Mill Street Junction, and then splits into two lines, both numbered 2373 – one traveling northeast to Byfield, Newbury and Newburyport, and a second traveling southeast to Rowley and Ipswich (Exh. DTE-1, Atts. A and B). The new supply line, once constructed, would be connected to

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[6] Of these activities, only the construction of the proposed supply line requires Department approval pursuant to G.L. c. 164, §72.

the Rowley/Ipswich segment of the 2373 line (id., Att. C). As a result, two independent 23 kV lines – one running from King Street substation to Ipswich and Rowley, and one running from King Street substation to Newbury and Newburyport – would replace the current bifurcated line (id.; Tr. at 6-7). The Company noted that this reconfiguration would: (1) reduce the load on the existing 2373 line, eliminating the projected contingency overload on the 2373 line between King Street and Mill Street in the summer of 2004, and the projected normal thermal overload of this line in summer 2005; (2) reduce the number of customers exposed to momentary outages on other lines if the 2373 line trips; and (3) allow the Company to end its blocking of automatic line transfers, thus reducing the probability of outages in Newburyport and Ipswich if the 2373 line trips (Exh. BVH-1, at 3; Tr. 10-11, 32).

MECo noted that the new capacitor bank at Ipswich Municipal substation and the upgraded pole top capacitors would help address normal and contingency voltage problems, that the new 200 foot get-away line would reduce the likelihood of an outage on the 2396 line, and that the reconductoring on the 2373 and 2394 lines would address potential overloads on certain sections of those lines (Exhs. BVH-1, at 3; DTE-13). The Company estimated the cost of Plan 1 as $4.5 million in 2003 dollars (Exh. BVH-1, at 3). The cost of the proposed supply line was estimated as $565,000 (Exh. PEB-6).

Plan 2 would address the voltage and overload issues through the installation of:

* a longer supply line extending from the King Street substation past the 2373 bifurcation at Mill Street Junction to Rowley or to Ipswich;

* a new 23 kV switching station in Rowley (with capacitor bank), not included in Plan 1;

* a new 23 kV 200-foot get-away line (2403), as proposed in Plan 1;

* reconductoring on the 2394 and 2373 23 kV lines, as proposed in Plan 1; and
* upgraded pole top capacitors, as proposed in Plan 1

(Exhs. BVH-1, at 3; ME-BVH at 6; DTE-16; Tr. at 18-21).

MECo stated that it selected Plan 1 over Plan 2 for three reasons: cost, implementation time, and the belief that significant investment in the 23 kV system would be imprudent given longer-term plans for the area (Exhs. ME-BVH at 6; DTE-17). The Company estimated that Plan 2 would cost $7.8 million, approximately 73 percent more than Plan 1 (Exhs. ME-BVH at 6; BVH-1, at 3). In addition, the Company asserted that the additional permitting complexity associated with a longer supply line route, combined with the possible need to acquire land for a new switching substation in Rowley, would likely delay completion of the project beyond summer 2004 (Exh. ME-BVH at 6). Finally, the Company noted that its affiliate, New England Power Company, is about to undertake a larger area transmission study, likely covering the King Street area, the Cape Ann area, and perhaps locations slightly to the west of these areas (Exh. DTE-17; Tr. at 16, 31). The Company expects this study to result in an integrated proposal to improve reliability throughout the study area, possibly including the extension of 115 kV service into the West Amesbury area (Exhs. DTE-12; DTE-17). The Company asserted that significant investment in the 23 kV subtransmission system is not prudent at this time in light of the potential for transmission upgrades in the area (Exh. DTE-17; Tr. at 17-18).

MECo also provided information regarding the short-term measures which it took during the summer of 2003 to mitigate the thermal overload and low voltage problems outlined in Section III.B, above. Specifically, the Company stated that it reconfigured the feeders

served by certain supply lines, blocked automatic load transfers from one line to another if the transfer would load the backup line over certain levels, and entered into a contract with Ipswich Municipal Light Department to run its diesel generation when necessary to reduce the Ipswich-area load served from the King Street substation (Exh. BVH-1, at 1,2; Tr. at 26). The Company asserted that these measures should not be considered long-term solutions to the identified thermal overload and low voltage problems (Exh. DTE-9). The Company noted that by blocking automatic load transfers when a line fails, it exposed its customers to permanent (as opposed to momentary) outages for loss of a single subtransmission line (id.). In addition, MECo noted that, absent a contract, Ipswich has no obligation to run its generation to support MECo's subtransmission system, and that the generation might be unavailable for mechanical, environmental, or economic reasons (id.; Tr. at 32).

D. Impacts of the Proposed Project

1. Wetlands and Endangered Species

The Company stated that the proposed transmission line would traverse wetland areas, and discussed the actions it would take to minimize the wetlands impacts of the proposed project (Exhs. ME-FPR, at 4). The Company indicated that two of the 36 poles required for the supply line would be located within wetland areas, resulting in the temporary disturbance of approximately 200 square feet of wetlands and permanent impact to approximately two square feet (Exhs. DTE-31; DTE-33). The Company stated that 23 other poles would be located within the 100 foot buffer zone of a wetland, resulting in the temporary disturbance of approximately 2300 square feet of wetlands buffer zone and permanent impact to approximately 23 square feet (Exhs. DTE-31; DTE-33). The Company noted that it does not

propose to construct any new access roads for the supply line (Exh. DTE-31). The Company stated that use of the existing ROW helped minimize wetland impacts, and described the techniques it would use to protect wetlands from damage by construction vehicles (Exhs. ME-FPR at 4; DTE-35; DTE-37).

The Company also indicated that the Massachusetts Natural Heritage and Endangered Species Program ("NHESP") has identified six rare animal and one plant species potentially located in the vicinity of the project (Exh. DTE-22, Att. 1).[7] As a result, MECo retained Hyla Ecological Services ("Hyla") to conduct a detailed investigation of the suitability of habitat within and along the ROW for these species (Exh. DTE-32). Hyla concluded that four areas within the ROW (near poles 8, 14, 30 and 35) contained suitable nesting habitat for the four-toed salamander, potential breeding habitat for the blue-spotted salamander, and potential foraging habitat for the spotted turtle and the Blanding's turtle (Exh. DTE-32; RR-DTE-2). Potential turtle nesting habitat was identified between poles 15 and 16, and between poles 20 and 21 (RR-DTE-2). The Company noted that spring or summer field work would be needed to determine whether these species actually nest, breed or forage on or near the ROW (Exh. DTE-32).

MECo stated that it met with staff at NHESP in late December to review the Hyla study and discuss measures that could be taken to avoid impacts to rare and endangered species

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[7] These species include the bridle shiner (*Notropis bifrenatus*), the blue-spotted salamander (*Ambystoma laterale*), the four-toed salamander (*Hemidactylium scutatum*), the spotted turtle (*Clemmys guttata*), the Blanding's turtle (*Emydoidea blandingii*), the New England bluet (*Enallagma laterale*), and the small bur-reed (*Sparganium natans*) (Exh. DTE-22, Att. 1).

(Tr. at 41-42). Following these discussions, the Company altered the location of poles 8, 30 and 35 to increase the distance between the poles and potential nesting habitat for the four-toed salamander, and, where possible, to place the poles outside of wetlands; in addition, the Company revised pole access road locations and developed construction plans designed to avoid or minimize damage to salamander and turtle habitat (Exh. RR-DTE-2). As mitigation for any impacts, MECo agreed to have Hyla conduct a herpetological survey along the ROW, focusing on the presence of blue-spotted salamanders in vernal pools in April, nesting activity by four-toed salamanders in May, and the presence of turtles in the ROW in June and July (id.). MECo agreed to submit the data from this survey to NHESP for its database (id.).

On January 22, 2004, NHESP submitted a letter to the Georgetown Conservation Commission stating that pole locations and access pathways had been modified to minimize direct impacts to salamander nesting and breeding habitats, that protective construction practices had been developed, and that similar measures had been developed to protect turtle habitat (Exh. DTE-39, Att. E). NHESP concluded that construction of the supply line would not adversely affect the wetlands habitat of state-protected rare species if certain conditions were met (id.). These conditions included a requirement that installation of poles 8, 14, 30 and 35 be completed by March 15, 2004, and that construction near turtle nesting habitat be completed by May 31, 2004 (id.).[8] NHESP issued a similar letter to the Groveland Conservation Commission on January 26, 2004 (Exh. DTE-39, Att. F).

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[8] On March 11, 2003, the Hearing Officer issued a ruling allowing MECo to install poles 8 and 14 in advance of the Department's order in this matter, subject to conditions intended to protect the stated interests of the Joint Intervenors, the Groveland Conservation Commission, and NHESP (March 11, 2003 Hearing Officer Ruling).

On February 25, 2004, MECo received an Order of Conditions from the Groveland Conservation Commission approving the proposed construction and incorporating many of the comments of NHESP (Exh. DTE-21, Supp., Att.). The Groveland Order of Conditions also includes stabilization requirements and activity limitations to minimize construction impacts (Exh. DTE-21, Supp., Att.). As of the close of the record, the Georgetown Conservation Commission has not yet issued an Order of Conditions for the portion of the supply line located in Georgetown.

2. Visual Impacts

MECo stated that the existing 2373 line is visible from the homes of eight abutters – four in Groveland and four in Georgetown – and that it expects the new supply line to be visible from these houses as well (Exh. DTE-25). The Company indicated that it took visual impacts into consideration when designing the supply line, locating new poles next to the existing ones when possible and using poles similar in height to the existing poles (id.). The Company stated that it will not need to clear additional ROW width to construct the supply line; however, approximately 24 trees which could fall into the lines during a wind or ice storm will be removed, and approximately 125 trees will be side-trimmed (Exhs. DTE-24; DTE-45). The Company indicated that this clearing would take place on the east and west sides of Evergreen Way and Pond Street, and at the Mill Street Junction (Exhs. ME-PEB at 4; PEB-3).

The Company stated that its arborist and W.D. Warner Architects and Planners are working with five of the affected abutters to develop landscaping plans for the sides of their properties facing the ROW, and indicated that it would be willing to work with the remaining

three if any interest were expressed (Exh. DTE-26; Tr. at 69). The Company also described its plans for a "generic planting plan" of low to medium height, mostly native, grasses and shrubs to be used at places where the ROW crosses public ways (Exh. DTE-26, Att. B).

3. EMF

MECo performed computer simulations of electric and magnetic fields ("EMF") along the 1.3 mile, 80 foot wide ROW, with and without the new supply line, under expected peak summer 2004 loading (Exh. DTE-27). The Company's analysis indicated that the maximum magnetic field strength in the ROW one meter above ground level would be approximately 95 milligaus ("mG") without the new supply line (id., Att. A at 2). With the new supply line installed in a configuration designed to minimize magnetic fields, the maximum magnetic field strength within the ROW would drop to approximately 52 mG (id.). The Company indicated that magnetic field levels at the nearest residence, 3 Evergreen Lane, would be approximately 2.5 mG with the new supply line in operation (id. at 1). The Company did not model magnetic field strength along the 200 foot wide section of the ROW; however, the Company's witness with respect to EMF issues offered the opinion that magnetic fields generated by the new supply line would have no discernable effect on the EMF profile along that section of the ROW, given the fields generated by the four transmission lines already operating in the ROW (Tr. at 71-72).

4. Other

MECo stated that construction generally would take place between the hours of 7:00 a.m. and 5:00 p.m., Monday to Friday; however, interconnection work at the King Street substation and at the Mill Street Junction might be scheduled outside these hours to ensure that

it takes place during periods of good weather and low electrical demand (id.; Tr. at 66). The Company stated that the interconnection work would involve moving wires from one pole to another, that the equipment needed was relatively quiet, and that it did not expect noise from the interconnection work to be an issue (Tr. at 67).

MECo indicated that construction of the proposed supply line should not affect groundwater or wells and that there are no indications of hazardous waste along the ROW (Exhs. DTE-41; DTE-30). The Company stated that equipment refueling will be restricted to areas off the ROW, and that the construction supervisor will have a spill response kit available in case of accidental spills or releases of equipment fuel or lubricants (Exh. DTE-29).

IV. ANALYSIS AND FINDINGS

MECo is an electric company as defined by G.L. c. 164, § 1, authorized to generate, distribute and sell electricity. Massachusetts Electric Company, D.P.U. 92-232, at 17 (1994). Accordingly, the Company is authorized to petition the Department for a determination under G.L. c. 164, § 72 that the 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 and other 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 MECo, 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

MECo has provided an area study documenting the need for improvements to the 23 kV subtransmission system served by the King Street substation, together with the underlying load growth forecasts. The study identifies specific subtransmission lines which, under summer 2004 peak load conditions, would overload either during normal operation, or if another subtransmission line trips out of service.[9] The Company's study indicates that construction of the proposed supply line, together with the installation of certain other equipment in the area served by the King Street substation, should resolve anticipated thermal overloads and low voltage issues and enable the Company to maintain a reliable supply of electricity for distribution and sale to customers in the King Street area. Accordingly, the Department finds both a need for, and public benefits of, the construction and operation of the proposed supply line in the King Street area.

B. The Proposed Project and Alternatives

As noted above, the Company considered two possible means of addressing potential thermal overloads and low voltages in the King Street area. Plan 1 involved the construction of the proposed 1.6 mile supply line, and in addition the construction of a 200 foot get-away line at King Street substation, the installation of a capacitor bank at Ipswich Municipal

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9 The Department notes that the nearly 25 percent annual growth rate projected for Ipswich between 2003 and 2004 is high, and that if need for the supply line were premised on that rate of growth, further investigation of the forecast would be required. However, the normal and contingency overloads and low voltages projected for summer 2004 all are projected to occur at 93 percent or less of *2003* summer peak load. The Department therefore concludes that need for upgrades to the 23 kV subtransmission system exists independent of the level of load growth between summer 2003 and summer 2004.

substation and upgraded pole-top capacitors, and reconductoring of portions of the 2394 and 2373 lines. Plan 2 involved construction of a longer supply line running either to a new switching station in Rowley or to the Ipswich Municipal Substation (at which a new capacitor bank would be installed), together with the other elements of Plan 1.

The record demonstrates that the construction costs of Plan 2 are significantly higher than those of Plan 1, due in large part to the longer length of the supply line and, potentially, the need to acquire land for and construct a new substation in Rowley. Because Plan 2 is essentially an expanded version of Plan 1, with a longer supply line and, potentially, a new substation, the environmental impacts of Plan 2 will encompass all those of Plan 1 and any impacts of the additional elements. While Plan 2 retains the existing bifurcation of the 2373 line, it provides additional support to the Rowley/Ipswich area in the form of an additional, unbifurcated line; thus, to the extent that thermal overload and low voltage problems are driven by the significant expected load growth in Ipswich, Plan 2 may provide a more robust solution to those problems.

MECo has indicated that it favored Plan 1 in part because it believed Plan 2 could not be permitted and constructed in time to meet summer 2004 peak load, and in part because it believed the additional investment in the subtransmission system required by Plan 2 was not warranted in light of the potential for significant transmission upgrades in the King Street area. The Department finds that MECo's decision to pursue the lower cost, lower impact Plan 1 is reasonable, particularly in light of NEPCo's plans to conduct a large area transmission study that will assess needs in the area served by the King Street substation and surrounding areas. However, the Department encourages MECo and other electric companies to allow sufficient

time in their planning processes to accomplish the permitting and construction of the best, rather than the most expeditious, solution to projected reliability concerns.

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 examined the impacts associated with the proposed project to identify any significant impacts that may occur during construction and operation of the project.

1. Wetlands and Endangered Species

The record shows that installation of poles for the proposed project would result in the loss of two square feet of wetlands and 23 square feet of wetland buffer zone, and would temporarily disturb 200 square feet of wetlands and 2300 square feet of wetlands buffer zone. The Company has identified and committed to reasonable measures to minimize the impacts of construction in wetland areas.

The record also shows that installation of four of the supply line poles – poles 8, 14, 30, and 35 – could have a direct impact on nesting habitat of the four-toed salamander, a state species of special concern. Installation of certain poles may also have a direct impact on turtle foraging or nesting habitat. The NHESP has identified conditions that it says will ensure that construction of the supply line will not adversely affect actual habitat of state-protected species. These conditions include completing installation of poles 8, 14, 30 and 35 by March 15, and completing construction near turtle nesting habitat by May 31. Similarly, the Groveland Conservation Commission has required that poles 8 and 14 be installed by March 17, 2004.

The record demonstrates that the MECo has adjusted pole locations, altered access

routes, and chosen construction techniques designed to minimize potential impacts on protected species. The record also shows that MECo has agreed to conduct surveys to determine whether protected salamanders and turtles are actually present along the ROW, and to submit this data to NHESP for its database. The Department notes that, while installation of poles 8 and 14 took place by March 17, 2004, pursuant to a March 11, 2004 Hearing Officer Ruling, poles 30 and 35 have not yet been installed, as MECo does not yet have the necessary Order of Conditions from the Georgetown Conservation Commission. Thus, MECo will need to work with NHESP and the Georgetown Conservation Commission to develop protective conditions for work at poles 30 and 35. Assuming implementation of such protective conditions as are required by the Georgetown Conservation Commission in its Order of Conditions, 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 supply line.

2. Visual Impacts

The record shows that the proposed supply line would follow the route of an existing 23 kV subtransmission line through primarily forested areas, and would be visible only from eight residences (which already have a view of an existing 23 kV line) and at road crossings. The record also shows that MECo has sought to minimize new visual impacts by placing new poles in close proximity to existing poles, that it is working with a number of the affected abutters on visual mitigation, and that it is developing plans for plantings to partially screen views at road crossings. Consequently, the Department finds that the Company has established that it will take all reasonable measures to avoid, minimize, or mitigate the visual impacts of

the proposed supply line.

3. EMF

The record demonstrates that construction of the supply line in the currently-proposed configuration will reduce maximum magnetic fields within the 1.3 mile, 80 foot wide segment of the ROW from approximately 95 mG to approximately 52 mG, assuming projected summer 2004 peak load conditions. The record also shows that magnetic field levels at the nearest residence would be approximately 2.5 mG with the new supply line in operation. 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 EMF levels in the near vicinity of the project.

4. Other

The record shows that: (1) construction of construction will be confined to daytime hours except at two relatively isolated locations, thus minimizing potential construction noise impacts; (2) construction of the supply line will have no impact on groundwater or wells; and (3) the Company has considered the potential for impacts resulting from the accidental release of equipment fuel and lubricants and has taken reasonable steps to plan for this contingency. The Department finds that potential impacts from hazardous material spills and construction noise 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, that there is both a need for, and public benefits of, the construction and operation of the proposed supply line in the King Street area. The Department also has found that the Company's decision to pursue Plan 1 was reasonable. Based on the analysis, above, of the environmental and other impacts of the proposed project, the Department finds that the public benefits of the project outweigh its local impacts (primarily minor wetlands and visual impacts, and potential impacts to habitat of state-protected species). Consequently, pursuant to G.L. c. 164, § 72, the Department finds that, with implementation of the mitigation measures proposed by the Company, the proposed 23 kV electric subtransmission line 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 23 kV overhead electric transmission line in the towns of Groveland and Georgetown, as described in the petition and exhibits of Massachusetts Electric Company, is necessary for the purposes 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 Massachusetts Electric Company shall 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 Massachusetts Electric Company shall implement all measures deemed necessary by NHESP to avoid, minimize, or mitigate impacts to protected

species and habitats during construction of the supply line; and it is

FURTHER ORDERED: That Massachusetts Electric Company shall serve a copy of this Order upon the Conservation Commission, Planning Board, and Board of Selectmen of the Towns of Groveland and Georgetown, Massachusetts, 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 G. Afonso, Chairman

_____
James Connelly, Commissioner

_____
W. Robert Keating, Commissioner

_____
Eugene J. Sullivan, Jr., Commissioner

_____
Deirdre K. Manning, 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 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 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).