

LAW OFFICES OF  
**PRIMMER & PIPER**

PROFESSIONAL CORPORATION  
421 SUMMER STREET  
P.O. BOX 159

ST. JOHNSBURY, VERMONT 05819

TELEPHONE 802-748-5061

FACSIMILE 802-748-3976

[www.primmer.com](http://www.primmer.com)

WILLIAM B. PIPER  
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ELIJAH D. EMERSON (VT, MA, ME)  
PETER W. KOPSCO (VT, MA, CT)  
STEPHEN J. ODEFY (MD)

**Of Counsel**  
JOHN L. PRIMMER, PLC  
GARY H. BARNES (VT, MA)  
STEPHEN A. REYNES

**Government Relations**  
JAMES F. FEEHAN - Director  
JONATHAN D. WOLFF - Specialist

**Legal Assistants**  
CARA B. GRISWOLD  
CATHY D. CONTE  
KURT A. LUTES  
JUSTIN B. BARNARD  
LISA P. GEER

December 6, 2004

Mrs. Susan Hudson, Clerk  
Vermont Public Service Board  
112 State Street, Drawer 20  
Montpelier, VT 05620-2701

Re: Joint Petition of Vermont Electric Power Company, Inc. ("VELCO"), Green Mountain Power Corporation ("GMP") and the Town of Stowe Electric Department ("Stowe") for a Certificate of Public Good pursuant to 30 V.S.A. § 248 authorizing VELCO to upgrade a substation in Moretown, Vermont; construct .3 miles of side by side, single pole tap; construct a switching station in Duxbury, Vermont; construct 9.4 miles of 115 kV transmission line; upgrade an existing GMP 34.5 kV subtransmission line; construct a substation in Stowe, Vermont; and for Stowe to construct 1.05 miles of 34.5 kV subtransmission line in Stowe, Vermont.

Dear Mrs. Hudson:

With this letter, VELCO, GMP and Stowe (the "Petitioners") respectfully submit a petition and supporting testimony requesting the Public Service Board ("Board") to issue a Certificate of Public Good pursuant to 30 V.S.A. § 248(a), authorizing the Petitioners to construct the so-called Lamoille County 115 kV Project (the "Project"), as set forth in the Petition and testimony. The Project's primary element is construction of a new 115 kV transmission line between VELCO's K24 transmission line in northern Duxbury and a new substation to be built in the Town of Stowe. It is designed to increase the reliability of subtransmission and distribution throughout Lamoille County and adjacent areas.

Enclosed are six copies of the petition, prefiled testimony and supporting exhibits, together with our notices of appearance and certificate of service. The prefiled testimony (consisting of fourteen sets of testimony) is included in the first bound volume. The remaining three volumes include the witnesses' supporting exhibits.

**The Reliability Problem**

The electric system of the greater Lamoille County area has had only incremental improvements over the past thirty years. During that period, the area has experienced significant load growth, which is forecasted to continue. The Lamoille County Study Area (the "LCSA") is electrically bounded by

**BURLINGTON OFFICE:**  
150 South Champlain Street, Suite 4  
P.O. Box 1488  
Burlington, VT 05402-1488  
Telephone: 802-862-2512 Facsimile: 802-862-3286

**MONTPELIER OFFICE:**  
100 East State Street  
P.O. Box 1309  
Montpelier, VT 05601  
Telephone: 802-223-2102 Facsimile: 802-223-2628

VELCO's East Fairfax, Middlesex, Irasburg, Barre, and Berlin 115 kV substations and the New England Power Company's Comerford 230 kV substation. The utilities serving this area are Central Vermont Public Service Corporation, Green Mountain Power Company, Washington Electric Cooperative, Inc., Vermont Electric Cooperative, Inc., and the municipal electric departments of Stowe, Hardwick, Hyde Park, Johnson, and Morrisville. The November 2006 expiration of transmission agreements among these utilities led them to request that VELCO perform a reliability analysis of the LCSA's electric system.

The results of VELCO's analysis indicates that the existing transmission system in the area is inadequate on several counts:

1. It is unable to properly back up the load in the event of the outage of key equipment;
2. It is likely incapable of maintaining adequate voltage levels on the 34.5 kV sub-transmission system at load levels as low as 74 MW, which were forecast to occur as early as the 2004 coincidental peak winter and the 2005 summer coincidental peaks, even with all lines in;
3. It will be exposed to thermal overloads on the conductors at forecasted future load levels; and,
4. At forecasted future load levels, the loss of VELCO's Berlin 115/34.5 kV transformer would cause its Middlesex 115/34.5 kV transformer to overload resulting in loss of service to the LCSA.

To address these problems, VELCO analyzed a series of alternatives to improve system performance and to permit the LCSA utilities to serve their customers reliably in the future. These alternatives were expected to improve both thermal and voltage performances and provide the desired back-up capabilities. Among the alternatives studied were capacitor bank additions, reconductoring of existing lines, construction of various new 34.5 kV lines with and without transformer connections to the VELCO system, construction of other 115 kV lines, installation of a phase angle regulator (PAR), installation of a FACTS device, implementing a plan of temporary load shedding and construction of new generation facilities. When compared to these, the Project proposed in this filing was identified as the best, most cost effective solution.

### **The Project**

The Project consists of eight elements:

1. Addition of a new 115 kV SF<sub>6</sub> circuit breaker in VELCO's Middlesex substation located in Moretown, Vermont and designation of the facility as "permanent."
2. Construction of a new 0.3 mile side-by-side single pole, in and out, 115 kV tap off of VELCO's K24 line and construction of a switching station in northern Duxbury, Vermont on approximately 0.5 acres.

3. Construction of a new 9.4 mile 115 kV transmission line within existing GMP rights-of-way from the new Duxbury switching station to a new 115 kV substation just south of Stowe's existing Wilkins substation.
4. Removal of GMP's existing 34.5 kV line between the new Duxbury switching station and GMP's Blush Hill Switch.
5. Relocation of GMP's existing 34.5 kV line between GMP's Blush Hill Switch and the proposed 115 kV substation just south of Stowe's existing Wilkins substation.
6. Construction of a new 115/34.5 kV 4-breaker ring substation just south of Stowe's Wilkins substation.
7. Construction of 1.05 miles of new 34.5 kV line between the new Stowe substation and the Stowe Mountain tap.
8. Removal of Stowe's Moscow substation.

### **Project Cost**

The preliminary estimated cost of the project is \$20.3 million, a small portion of which is eligible for ISO-NE pool transmission facility funding. However, once the project has been approved, VELCO will review any required changes and/or additions and a new cost estimate will be performed. VELCO continues to analyze cost saving changes to the design of the substations and the 115 kV transmission line.

### **Project Schedule**

VELCO proposes to begin construction as soon as possible after receiving a Certificate of Public Good and other required permits and authorizations. It seeks to have the Project in-service by November 2006.

Thank you for your attention to this matter. As always, please contact me should you have any questions.

Yours truly,



William B. Piper, Esq.

CC: Attached Certificate of Service  
Kim Moulton, Project Manager

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**STATE OF VERMONT  
PUBLIC SERVICE BOARD**

PSB Docket No. \_\_\_\_\_

Joint Petition of Vermont Electric Power Company, Inc. ("VELCO"), Green Mountain Power Corporation ("GMP") and the Town of Stowe Electric Department ("Stowe") for a Certificate of Public Good pursuant to 30 V.S.A. § 248 authorizing VELCO to upgrade a substation in Moretown, Vermont; construct .3 miles of side by side, single pole tap; construct a switching station in Duxbury, Vermont; construct 9.4 miles of 115 kV transmission line; upgrade an existing GMP 34.5 kV subtransmission line; construct a substation in Stowe, Vermont; and for Stowe to construct 1.05 miles of 34.5 kV subtransmission line in Stowe, Vermont.

**PETITION FOR CERTIFICATE OF PUBLIC GOOD  
PURSUANT TO 30 V.S.A. § 248**

By this Petition, Vermont Electric Power Company, Inc. ("VELCO"), Green Mountain Power Corporation ("GMP") and Town of Stowe Electric Department ("Stowe") represent as follows:

1. VELCO, GMP and Stowe are each a company as defined by Section 201 of Title 30, Vermont Statutes Annotated, and as such are subject to the Vermont Public Service Board's (the "Board") jurisdiction pursuant to Sections 203 and 248 of Title 30. Stowe is also a duly organized municipal electric utility under Chapter 79 of Title 30, Vermont Statutes Annotated.
2. VELCO's offices are located at 366 Pinnacle Ridge Road, Rutland, Vermont, 05701.
3. GMP's offices are located at 163 Acorn Lane, Colchester, Vermont 05446.
4. Stowe's offices are located at the Baggy Knees Shopping Plaza, Mountain Road, P.O. Box 190, Stowe, Vermont 05672.

5. VELCO owns, operates and plans for the maintenance, upgrade and expansion of the State of Vermont's bulk electric transmission system network (115 kV and above).
6. GMP owns and operates an electric distribution and subtransmission system serving several areas of the State of Vermont.
7. Stowe owns and operates an electric distribution and transmission system serving the Town of Stowe, Vermont.
8. VELCO operates its system to assure the integrity of the portion of the regional bulk power system for which it is responsible and to assure adequate and reliable transmission of bulk power to the twenty-one distribution electric utilities that it serves in Vermont.

**Need for the Lamoille 115 kV Project**

9. VELCO was asked to analyze the reliability and performance of the electric system in and around Lamoille County, Vermont (the "Lamoille County Study Area" or "LCSA").
10. Electrically, this area is bounded by VELCO's East Fairfax, Middlesex, Irasburg, Barre and Berlin 115 kV substations and the New England Power Company's Comerford 230 kV substation and includes service territories of Central Vermont Public Service Corporation, GMP, Washington Electric Cooperative, Inc., Vermont Electric Cooperative, Inc., and the electric departments of the Towns of Stowe and Hardwick and the Villages of Hyde Park, Johnson and Morrisville.
11. The results of VELCO's studies indicate that today, the LCSA can maintain acceptable voltage levels under normal operating conditions, but that voltage collapse and/or load shedding could occur in the event of a loss of either the East Fairfax or Middlesex source.

12. Load within the LCSA is also expected to grow over the next few years and soon the existing facilities will not be able to maintain acceptable voltage even under normal conditions. By 2008, the electric system in the area will not be able to maintain even a 90% voltage level with all lines in.
13. Over the past three years, the LCSA system was exposed to voltage failures an average of 78% of the hours during the winter power period and 51% of the hours during the summer power period.

#### **Middlesex Substation**

14. The Certificate of Public Good issued to permit the construction of VELCO's Middlesex substation in Moretown allowed construction of a "temporary" facility.
15. The findings of the Public Service Board in its Order in Docket No. 3387, dated October 15, 1969, mention VELCO's intention, at that time, to reapply to the Board in 1972 to upgrade the substation and to make it permanent.
16. No such application was made and the substation remains in its approved "temporary" location and design.

#### **Project Description**

17. Serious concerns about system reliability have led VELCO to propose this Lamoille County 115 kV Project (the "Project"). The Project as proposed is to construct a new 115kV line from existing VELCO lines in northern Duxbury to a new 115 kV substation in Stowe and accompanying facilities and to upgrade and establish as permanent the VELCO Middlesex substation.

18. In detail, the Project consists of eight elements:
1. Addition of a new 115 kV SF<sub>6</sub> circuit breaker in VELCO's Middlesex substation located in Moretown, Vermont and designation of the facility as "permanent."
  2. Construction of a new 0.3 mile side-by-side single pole, in and out, 115 kV tap off of VELCO's K24 line and construction of a switching station in northern Duxbury, Vermont on approximately 0.5 acres.
  3. Construction of a new 9.4 mile 115 kV transmission line within existing GMP rights-of-way from the new Duxbury switching station to a new 115 kV substation just south of Stowe's existing Wilkins substation.
  4. Removal of GMP's existing 34.5 kV line between the new Duxbury switching station and GMP's Blush Hill Switch.
  5. Relocation of GMP's existing 34.5 kV line between GMP's Blush Hill Switch and the proposed 115 kV substation just south of Stowe's existing Wilkins substation.
  6. Construction of a new 115/34.5 kV 4-breaker ring substation just south of Stowe's Wilkins substation.
  7. Construction of 1.05 miles of new 34.5 kV line between the new Stowe substation and the Stowe Mountain tap.
  8. Removal of Stowe's Moscow substation.

**Project Cost**

- 19. The estimated total cost of the Project is \$20.3 million.
- 20. The carrying costs of this sum will be allocated, pursuant to VELCO's FERC-filed 1991 Transmission Agreement.

**In Service Date**

- 21. The proposed in-service date for the Project is November, 2006.

**Supporting Testimony and Exhibits**

- 22. In support of this petition, VELCO submits testimony and exhibits sponsored by the following witnesses:

<u>Witness</u>	<u>Subject</u>
Kim S. Moulton	Provides a project summary, explanation of need, summary of benefits and an outline of project costs
Richard Hinners	Provides the history of the LCSA and background for the Project need
David W. Grimason	Provides an analysis of demand side management and distributed generation potential within the LCSA
Ryan Johnson	Provides engineering design and information relating to the construction, maintenance and ongoing operation of the Project and assures compliance with land use and environmental criteria
Alexandra Rowe	Describes the Project's compliance with land use and environmental requirements
Art Gilman	Provides an analysis of the Project's impact on natural resources

Douglas Frink	Provides an analysis of the Project's impact on archaeological resources
Terrence J. Boyle and Adam Portz	Provide aesthetic analysis of the Project
Hugh Henry	Addresses the impact on historic sites within the Project viewshed
Peter Valberg	Provides information related to and analysis of the electromagnetic fields of the Project
Kenneth H. Kaliski	Provides information related to the Project's noise impacts
David Mace	Provides overview of communication with towns, planning commissions, regional planning commissions and landowners
Bernard Machia	Provides additional support for the Project and testimony about the Stowe elements of the Project
Terry Cecchini	Provides GMP perspective on need for Project and support for the GMP portion of the Project

### **Request for Relief**

23. The Project meets all of the criteria established by 30 V.S.A. § 248, including the environmental criteria incorporated from Title 10 of the Vermont Statutes Annotated pursuant to 30 V.S.A. § 248(b)(5), and will promote the general good of the state.

WHEREFORE, Petitioners respectfully request this Board to:

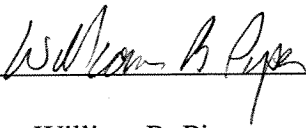
1. Hold a prehearing conference as expeditiously as possible to establish a schedule for testimony and hearings.

2. Hold hearings as the Board determines are necessary.
3. Make findings as required by 30 V.S.A. § 248.
4. Find that the Project will promote the general good of the State of Vermont, and authorize VELCO, GMP and Stowe to undertake the actions described herein and in the attached testimony and exhibits.
5. Issue Certificates of Public Good to VELCO, GMP and Stowe as required for the Project.
6. Take such other actions as may be required for the expeditious review of this application.

DATED at Montpelier, Vermont this 6th day of December, 2004.

VERMONT ELECTRIC POWER COMPANY, INC.

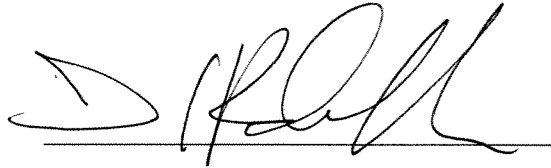
By: Primmer & Piper, P.C.

By:   
\_\_\_\_\_  
William B. Piper

DATED at Colchester, Vermont this 6<sup>th</sup> day of December, 2004.

GREEN MOUNTAIN POWER CORPORATION

By: Donald J. Rendall, Jr.

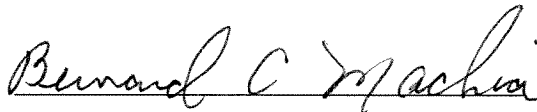
A handwritten signature in black ink, appearing to read "D Rendall", written over a horizontal line.

Donald J. Rendall, Jr.

DATED at Stowe, Vermont this 6<sup>th</sup> day of December, 2004.

TOWN OF STOWE ELECTRIC DEPARTMENT

By: Bernard Machia, Manager

A handwritten signature in black ink, appearing to read "Bernard C Machia", written over a horizontal line.

Bernard Machia

**STATE OF VERMONT  
PUBLIC SERVICE BOARD**

Joint Petition of Vermont Electric Power Company, Inc. (“VELCO”), Green Mountain Power Corporation (“GMP”) and the Town of Stowe Electric Department (“Stowe”) for a Certificate of Public Good pursuant to 30 V.S.A. § 248 authorizing VELCO to upgrade a substation in Moretown, Vermont; construct .3 miles of side by side, single pole tap; construct a switching station in Duxbury, Vermont; construct 9.4 miles of 115 kV transmission line; upgrade an existing GMP 34.5 kV subtransmission line; construct a substation in Stowe, Vermont; and for Stowe to construct 1.05 miles of 34.5 kV subtransmission line in Stowe, Vermont.

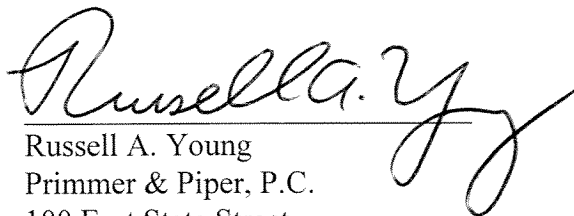
NOTICE OF APPEARANCE

Primmer & Piper, P.C., by William B. Piper, Esq. and Russell A. Young, Esq. hereby enters its appearance on behalf of the Town of Stowe Electric Department in the above-mentioned proceeding.

Dated at St. Johnsbury, Vermont, this 6th day of December, 2004.



\_\_\_\_\_  
William B. Piper  
Primmer & Piper, P.C.  
421 Summer St., PO Box 159  
St. Johnsbury, VT 05819  
(802) 748-5061  
[wpiper@primmer.com](mailto:wpiper@primmer.com)



\_\_\_\_\_  
Russell A. Young  
Primmer & Piper, P.C.  
100 East State Street  
Montpelier, VT 05601  
(802) 223-2102  
[ryoung@primmer.com](mailto:ryoung@primmer.com)


**STATE OF VERMONT  
PUBLIC SERVICE BOARD**

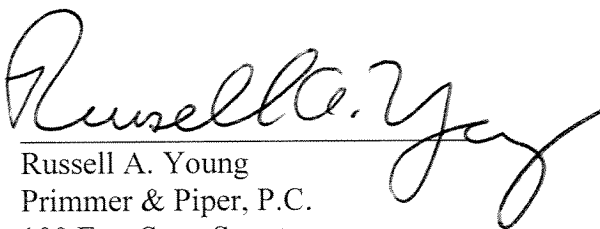
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NOTICE OF APPEARANCE

Primmer & Piper, P.C., by William B. Piper, Esq. and Russell A. Young, Esq. hereby enters its appearance on behalf of Vermont Electric Power Company, Inc. in the above-mentioned proceeding.

Dated at St. Johnsbury, Vermont, this 6th day of December, 2004.

  
\_\_\_\_\_  
William B. Piper  
Primmer & Piper, P.C.  
421 Summer St., PO Box 159  
St. Johnsbury, VT 05819  
(802) 748-5061  
[wpiper@primmer.com](mailto:wpiper@primmer.com)

  
\_\_\_\_\_  
Russell A. Young  
Primmer & Piper, P.C.  
100 East State Street  
Montpelier, VT 05601  
(802) 223-2102  
[ryoung@primmer.com](mailto:ryoung@primmer.com)

**STATE OF VERMONT  
PUBLIC SERVICE BOARD**

Joint Petition of Vermont Electric Power Company, Inc. ("VELCO"), Green Mountain Power Corporation ("GMP") and the Town of Stowe Electric Department ("Stowe") for a Certificate of Public Good pursuant to 30 V.S.A. § 248 authorizing VELCO to upgrade a substation in Moretown, Vermont; construct .3 miles of side by side, single pole tap; construct a switching station in Duxbury, Vermont; construct 9.4 miles of 115 kV transmission line; upgrade an existing GMP 34.5 kV subtransmission line; construct a substation in Stowe, Vermont; and for Stowe to construct 1.05 miles of 34.5 kV subtransmission line in Stowe, Vermont.

CERTIFICATE OF SERVICE

I, William B. Piper, Esq., on behalf of the Vermont Electric Power Company, Inc., hereby certify that I have this day served one copy of the foregoing correspondence, by first class U.S. mail, on the following persons or entities:

James Volz, Esq.  
Director for Public Advocacy  
Vermont Department of Public Service  
112 State Street - Drawer 20  
Montpelier, VT 05620-2601

Betsy Bishop  
Vermont State Planning Office  
c/o Office of the Governor  
109 State Street  
Montpelier VT 05609

Warren Coleman, Esq.  
Vermont Agency of Natural Resources  
103 South Main Street - Center Building  
Waterbury, VT 05671-0301

Jill Michaels, Chair  
Vermont Scenery Preservation Council  
P.O. Box 298  
South Strafford, VT 05070

The Honorable William H. Sorrell  
Vermont Attorney General  
Pavilion Building - 109 State Street  
Montpelier VT 05609

Patricia McDonald, Secretary  
Vermont Agency of Transportation  
National Life Building - Drawer 33  
Montpelier VT 05633-5001

Paul Jarris, M.D., Commissioner  
Vermont Department of Health  
108 Cherry Street - PO Box 70  
Burlington VT 05402

Stephen Kerr, Commissioner  
Vermont Department of Agriculture, Food &  
Markets  
116 State Street - Drawer 20  
Montpelier VT 05620-2901

Eric Gilbertson, Director  
Vermont Historic Preservation Division  
135 State Street - Drawer 33  
Montpelier VT 05633-1201

Chairperson, Town Selectboard  
c/o Town Clerk  
Town of Duxbury  
3316 Cross Hill Road  
Waterbury, VT 05676

Chairperson, Town Selectboard  
c/o Town Clerk  
Town of Moretown, PC  
P.O. Box 666  
Moretown, VT 05660

Chairperson, Town Selectboard  
c/o Town Clerk  
Town of Waterbury  
51 South Main St.  
P.O. Box 9  
Waterbury, VT 05676

Chairperson, Town Selectboard  
c/o Town Clerk  
Town of Stowe, PC  
67 Main Street  
P.O. Box 216  
Stowe, VT 05672

Chairperson  
Town Planning Board  
c/o Town Clerk  
Town of Duxbury  
3316 Cross Hill Road  
Waterbury, VT 05676

Chairperson  
Town Planning Board  
c/o Town Clerk  
Town of Moretown, PC  
P.O. Box 666  
Moretown, VT 05660

Chairperson  
Town Planning Board  
c/o Town Clerk  
Town of Waterbury  
51 South Main St., P.O. Box 9  
Waterbury, VT 05676

Chairperson  
Town Planning Board  
c/o Town Clerk  
Town of Stowe, PC  
67 Main Street, P.O. Box 216  
Stowe, VT 05672


Executive Director  
Lamoille County Planning Commission  
The Tegu Building  
43 Portland Street  
P.O. Box 1009  
Morrisville, VT 05661

Executive Director  
Central Vermont Regional Planning  
Commission  
29 Main Street, Suite 4  
Montpelier, VT 05602

Dated at Montpelier, Vermont this 6<sup>th</sup> day of December, 2004

VERMONT ELECTRIC POWER COMPANY, INC.

By: Primmer & Piper, P.C.

By:   
William B. Piper  
421 Summer Street  
St. Johnsbury, VT 05819  
802-748-5061  
[wpiper@primmer.com](mailto:wpiper@primmer.com)