May 16, 2008

TO: Those Persons Whose Names Appear on the Attached Service List

RE: Gorge Area Reinforcement Project
Certificate of Public Good – Section 248 Permit Process
45-Day Notice of Project Filing

I. Introduction

Vermont Electric Power Company, Inc. ("VELCO") and Green Mountain Power Corporation ("Green Mountain Power" or "GMP") (collectively, the "Applicants"), anticipate filing a Petition for a Certificate of Public Good with the Vermont Public Service Board (the "PSB") on June 30, 2008. Petitioners propose to:

- install a new VELCO 115/34.5 kV Gorge substation and a new Green Mountain Power Gorge 34.5 kV substation in the City of South Burlington (see Attachment A);
- expand the existing Green Mountain Power 34.5 kV Colchester substation (see Attachment B);
- reconstruct approximately 700 feet of Green Mountain Power's existing 3307/3308 34.5 kV line between the new GMP Gorge 34.5 kV substation in South Burlington and the existing Gorge GMP substation in Colchester (see Attachment C1); and
- reconductor approximately 2.3 miles of the Green Mountain Power 3307 overhead 34.5 kV line located between the existing GMP Gorge Colchester substation and the McNeil Generation Station located in the City of Burlington (see Attachments C1 & C2).

The upgrades will also allow for the removal of approximately 4.2 miles of GMP 34.5 kV lines located between the McNeil substation in the City of Burlington and the GMP Queen City substation located in South Burlington (see Attachment D). These upgrades are the second phase of a three-phase series of reliability reinforcements to the transmission and sub-transmission network in the greater Burlington area. The transmission upgrades described in this letter (referred to as the "Gorge Area Reinforcement Project" or the "Project"), as well as non-transmission alternatives evaluated by the Applicants, including energy conservation, demand response and generation, are described below. The Applicants are providing the information in this 45-day notice package to the affected municipal and regional planning commissions and municipal legislative bodies in the affected areas in accordance with PSB Rule 5.400.

This letter describes (1) the electric reliability problems that requires the Gorge Area Reinforcement Project, (2) the potential solutions evaluated and the strategy being pursued, (3) the various elements of the Project, (4) the aesthetic impacts of the Project, (5) the expected Project filing date with the PSB, and (6) the rights of the local and regional planning commissions to comment on the Project plans.

II. Description of the Electric System Reliability Problem

VELCO owns and operates the Vermont bulk electric transmission network (115 kV and above), and this bulk network is connected to the regional and national bulk electric power supply system. The bulk transmission system also provides the electric supply to local distribution utilities, like Green Mountain Power. The 34.5 kV electric system in Chittenden County provides service to approximately 32,200 Green Mountain Power customers (after the completion of the Northwest Vermont Reliability Project) in South Burlington, Williston, Colchester, Winooski, Essex, Richmond, Bolton. The 34.5 kV system also serves Vermont Electric Cooperative and approximately one-third of the City of Burlington electric load. The sub-transmission system in Chittenden County is currently fed by three VELCO substations (the Queen City substation in South Burlington, and the Tafts Corners and Essex substations in Williston). Upon completion of the East Avenue Loop Project, the Chittenden County 34.5 kV electric system will also be served by the East Avenue VELCO substation.

The Gorge Area Reinforcement Project is the second phase of a three-phase, 20-year plan studied as part of the Burlington Waterfront Area-Specific Collaborative (or "ASC"), which examined solutions to electric system reliability concerns within the City of Burlington and in northern Chittenden County. The East Avenue Loop Project, currently pending before the Vermont Public Service Board in Docket No. 7314, is the first phase of the plan, and addresses local reliability problems for the City of Burlington Electric Light Department and the Green Mountain Power sub-transmission systems through 2010. Based upon current load projections, the Gorge Area Reinforcement Project, which provides a new 115 kV source to the region, must be in service by 2011 in order to avoid system overloads and low voltages for contingencies on Green Mountain Power's electric system in Chittenden County that could result in loss of customer electric load. Our system planning studies reveal that there are three planning criteria violations with the system load projected to 2011 levels. The Project is needed because reliable electric service is critical to our daily lives, and the power companies must design, operate and maintain adequate, reliable systems.

The advantages of the Gorge Area Reinforcement Project include:

- Creating a new 115 kV source into the Chittenden area 34 kV transmission system to maintain reliability and adequacy of electric service to customers served by Green Mountain Power's electric system as load increases, while allowing for a system contingency or failure;
- Upgrading antiquated Green Mountain Power facilities, thus reducing the possibility of failure;
- Allowing Green Mountain Power to remove its 34.5 kV Waterfront Lines (3323 – 3328), which will improve the appearance of the Burlington Waterfront without significantly degrading electric system reliability;

- Setting the stage to allow for upgraded distribution facilities and increased peaking generation capability at the Gorge Green Mountain Power substation.

III. Discussion of Alternatives Evaluated

Green Mountain Power's analysis has included assessments of the timing of need, location of needed facilities or resources, and an assessment of the cost, viability and effectiveness of solutions including transmission and non-transmission alternatives, including energy conservation, generation and demand response resources. Applicants have also conducted a public outreach effort. The goal of this effort was to help the Applicants understand local concerns, priorities and desires, and make an informed choice when addressing area reliability problems. Applicants have identified a combination of transmission upgrades, as well as potential non-transmission options to solve the reliability problems facing area networks.

Please visit the VELCO web site at www.velco.com/Templates/default.asp?pageId=166. to view meeting minutes and documents associated with the public engagement effort.

Transmission Alternatives

Two electrically equivalent transmission alternatives ("TA") were identified.

- An upgrade to VELCO's Essex substation, GMP's Essex substation, the overhead line between them and the reconstruction of the 3.2 miles between GMP's Essex substation and GMP's Gorge Substation. This alternative was identified during the ASC process as Phase Three of the 20 year upgrade plan discussed above. This upgrade may be needed in the future but by building the Project first, the 3.2 miles of line reconstruction will not be needed. It is the need to reconstruct this line segment that eliminates this option from consideration and pursuing this TA out of phase will lead to wasted utility resources. If the Essex VELCO substation is upgraded for a future need with the Gorge Area Reinforcement Project in place, this line segment will not need to be reconstructed.

- A new VELCO substation in the Malletts Bay area of Colchester, a new (approximately 1 mile) 34.5 kV transmission line and a major upgrade of Green Mountain Power's Malletts Bay substation. A new Malletts Bay VELCO substation is approximately equal in terms of cost and complexity to the proposed Gorge VELCO substation except that the proposed Gorge VELCO substation is on land currently owned by Green Mountain Power. A Malletts Bay VELCO substation would require the additional cost of land acquisition from a third party. In addition, the 700-foot corridor between the new Gorge Area Reinforcement Project facilities and the interface with the existing 34.5 kV system already exists. In contrast, the corridor between a new Malletts Bay VELCO facility and the existing 34.5 kV system interface would be a new 1-mile corridor. The cost of acquiring and creating 1 mile of new transmission corridor and building one mile of new transmission line eliminates this option.

In addition, Applicants rejected the two TA options listed above because the plan to upgrade the existing Gorge substation, a significant part of the proposed Project, would be required by the 2011 Project need date and would address:

- the future need to convert the existing 4.16 kV distribution substation to 12.47 kV

- the future need for a third 34.5 kV feeder for the City of Winooski
- the replacement of the existing generator with a larger, more reliable, more efficient unit,

While these upgrades are not directly related to the Project, neither of the TAs discussed above allows these three existing system problems to be addressed.

Non-Transmission Alternatives

The proposed Project is a transmission project; however, Applicants are required to consider alternatives to the proposed transmission solution to the reliability problems they have identified, called non-transmission alternatives, or "NTA's." Applicants' evaluation of non-transmission alternatives included the potential for reduction of peak summer loads with energy efficiency measures, demand response and generation. Demand response and generation NTAs were also evaluated in combination with energy efficiency.

Energy Efficiency:

The area that is affected by the Gorge Area Reinforcement Project includes the Towns of Colchester, Essex, Essex Junction, Winooski and a portion of the City of South Burlington. This area is one of four areas currently being "geotargeted" by Vermont's Energy Efficiency Utility ("EEU"), and most of the Gorge Area Reinforcement Project area is included as part of the geotargeting effort that has been committed through 2008. Preliminary analysis of the geotargeting impact on this area does not have a sufficient margin for error to allow deferral of the Project, given projected peak summer loads.

Demand Response:

"Demand response" is a voluntary program that pays enrolled customers to curtail the amount of energy they need from the grid (also called "load") when the area loads exceed certain criteria. Customers in this program may curtail load by either running generators or otherwise reducing customer electric consumption, for example by turning off equipment that consumes electricity. Demand-response programs, while helpful to the system, cannot provide for contingencies in the same manner as transmission.[1] Further, unlike other New England states, the nature of Vermont's industrial customers limits the potential for a large-scale demand response program. Green Mountain Power has not identified a sufficient number of major customers in the critical area who would be logical candidates for demand response and the load reduction that these customers can offer would not be adequate to maintain summer loads at acceptable levels.

Generation:

Green Mountain Power has also examined replacement of its existing generator at the Green Mountain Power Gorge site with a new, larger, more reliable generator. A new GMP Gorge generator may be considered an electrically viable NTA because it would act as a back-up to the existing McNeil generator, connected to Green Mountain Power's system nearby. Our

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[1] These observations about the limitations of demand-response are discussed in the Vermont Public Service Board's January, 2005 order concerning the so-called Northwest Vermont Reliability Project. *See* Docket No. 6860, Order of 1/28/05 at 56.

preliminary assessment is that a new Gorge generator with an output of 25 to 30 megawatts could potentially defer significant portions of the Project for several years. However, a portion of the Project that could not be deferred is the existing Green Mountain Power Gorge substation expansion proposed as part of the Gorge Area Reinforcement Project. Green Mountain Power therefore intends to evaluate in greater depth the costs and other trade-offs among specific generators and to explore potential feasibility issues -- such as cost, air emissions, noise, and traffic impacts associated with constructing and operating a new generator.

NTA Conclusion:

Applicants need to have a reliability solution in place by the summer of 2011. The Gorge Area Reinforcement Project will satisfy Applicants' reliability concerns. Green Mountain Power's generation NTA analysis requires additional study and analysis to determine whether the generation option will cost effectively defer the construction of the Gorge Area Reinforcement Project. Even if a generation-based NTA would cost effectively defer the construction of the Gorge Area Reinforcement Project, the transmission infrastructure improvement solution as Applicants intend to propose it, will be required within a few years. Sound planning dictates that Applicants seek approval of the Gorge Area Reinforcement Project at this time and supplement our filing with an updated analysis of the generation-based NTA as soon as it is complete.

IV. Description of the Project Upgrades

The proposed Project consists of the following five principal components:

1. **New Gorge VELCO Substation (South Burlington):** The construction of a new 115/34.5 kV VELCO substation with an approximate footprint of 150 feet x 215 feet located at the end of Berard Drive in the City of South Burlington, located across the Winooski River from the existing Green Mountain Power Gorge substation. A preliminary substation layout overlaid on an orthophoto is shown on Attachment A. The proposed Gorge VELCO substation will consist of a four-breaker 115 kV ring bus (three initial breakers, one future) with two incoming 115 kV lines and two 115/34.5 kV power transformers (one initial, one future), and two 34.5 kV breakers (one initial, one future) that will feed the adjacent Green Mountain Power 34.5 kV Gorge South Burlington substation.

The new VELCO Gorge substation will tap into the VELCO 115 K-23 line, just south of the new substation.

2. **New Gorge GMP Substation (South Burlington):** The construction of a new 34.5 kV Green Mountain Power substation with an approximate footprint of 180 feet x 130 feet located at the end of Berard Drive in the City of South Burlington, across the Winooski River from the existing Green Mountain Power Gorge substation in Colchester. This substation will be located adjacent to the planned Gorge VELCO Substation, although it will be at a slightly different elevation due to required terracing. A preliminary substation layout overlaid on an orthophoto is shown on Attachment A. This substation will consist of a six-breaker 34.5 kV ring bus (five initial breakers, one future) with six 34.5 kV lines (five initial, one future). The substation design allocates space for a future 34.5/12.47 kV distribution transformer and associated equipment for two distribution feeders.

3. **Expansion of Gorge GMP Substation (Colchester):** The upgrade and expansion of the existing Gorge GMP substation, including a new 34.5 kV ring bus, new 12 kV structure with provision for a new 34.5/12 kV, 14 MVA, transformer. Applicants plan to expand this existing 1.5 acre substation by approximately 0.2 acre (80 feet x 115 feet). A preliminary substation layout overlaid on an orthophoto is shown on Attachment B. The proposed upgrade will replace the antiquated wood pole structure with a ring bus to allow for increased load and fault current capacity. This upgrade will also allow for the conversion of the existing 4 kV distribution feeder to 12 kV (initially a 34.5/4.16 kV transformer will be installed), and an additional 34.5 kV distribution feeder ("16Y3") when the Winooski area load requires a third distribution feeder, and substation capacity for increasing the size of the existing Gorge generator.

4. **Reconstruction of 700 Feet of the 3307/3308 34.5 kV Lines Between the VELCO and GMP Gorge Substations:** 700 feet of reconstruction is necessary to upgrade the conductor and to separate the lines that now share a common structure. The existing line capacity will be increased because it will be the major tie between the new facilities and the existing system. The rebuilt lines, which cross the Winooski River, are shown on Attachment C1. The poles supporting this reconstructed line will be replaced.

5. **Reconstruction of Approximately 2.3 Miles of the Existing 3307 34.5 kV Line Between the Existing Gorge Green Mountain Power and McNeil Substations:** A preliminary plan showing the 3307 line proposed to be reconductored is shown on Attachment C.

This line consists of three segments:

- **Gorge Substation to the Winooski Falls Project:** This segment is approximately 0.74 miles long, passes over I-89 and through the Winooski Wetland. There will be two additional poles in this segment. This segment will also have a distribution underbuild to serve the City of Winooski's future electrical needs. The existing 4 kV distribution poles in the corridor will be removed.
- **Winooski Falls Project to the Winooski River Bridge:** This approximately 0.38 mile segment is underground. The upgrade will consist of adding another set of underground cables in existing conduit. The riser poles for the underground portion will not be replaced as part of the Project.
- **Winooski River Bridge to McNeil Substation:** This 1.18-mile segment follows the Winooski River to the railroad bridge and then follows the railroad tracks across Intervale Avenue to McNeil. Approximately 130 feet of this segment in the vicinity of McNeil will be undergrounded as part of the East Avenue Loop project. The riser poles for the underground portion will not be replaced as part of the proposed Project.

This line will be the major tie between the new Gorge 115/34.5 kV source and the existing McNeil source after the East Avenue Loop Project is complete. This upgrade is required to increase power transfer capability so that one station can backup the other. The reconstruction of this line is required because the conductor (the transmission line wire carrying electricity) size is being increased. Because of this, most of Green Mountain Power's existing structures in this area will be replaced with taller structures. Applicants expect that there will be approximately the same number of structures and that the new structures will be similar in design to the existing structures. No new right-of-way is required.

Removal of Burlington Waterfront Lines and Associated Facilities: This Project will allow for the removal of Green Mountain Power's 3323 and 3328 34.5 kV lines between McNeil Substation and Queen City Substation (4.2 miles). These are the 34.kV lines that currently exist along the Burlington Waterfront Park (the Waterfront Lines), which will improve the appearance of the Burlington Waterfront. These lines are shown on Attachment D.

Equipment and Material Transportation: The Applicants attempt to use the most economical and practical mode of transportation to transport materials and equipment to the construction sites. With large equipment, such as transformers, it is typically feasible to use rail and barge transport, limiting highway transportation to the extent practicable. The majority of equipment and material used to construct the line is transported within Vermont over state and local highways and delivered to designated laydown areas near or on the corridor. This transportation is done in accordance with applicable permits and requirements.

V. Discussion of Aesthetic Impacts

Both the Natural Resources Board and the PSB utilize the so-called *Quechee Lakes* standard (set forth in the decision Quechee Lakes Corporation, #3EW0411-EB and #3O439- EB (1986)) to guide their aesthetics analysis. According to the *Quechee Lakes* standard, regulators must first determine whether a project will have an adverse impact on aesthetics and scenic and natural beauty. A project has an adverse impact if it is out of character with its surroundings. Specific factors that regulators use to make this evaluation include the nature of the project surroundings, the compatibility of the project design with those surroundings, the suitability of the project colors and materials with the immediate environment, the visibility of the project, and the impact of the project on open space. If regulators conclude that a project will have an adverse effect, the next step in the two-part test, is to determine whether the adverse effect of the project is "undue." The adverse effect is considered undue when regulators find that any one of the following factors is affirmatively answered: (1) Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area? (2) Have the applicants failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings? (3) Does the project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area? For transmission upgrades, the PSB's aesthetic analysis, however, does not end with the results of the *Quechee* test. In addition, the PSB's aesthetic assessment is "significantly informed by overall societal benefits of the project." PSB Docket No. 6860, Order of 1/28/05 (footnotes omitted).

VELCO's aesthetic consultant, T. J. Boyle Associates, LLC ("TJB"), a landscape architecture and planning firm, has reviewed the preliminary design plans and performed a visual analysis of the areas of the proposed Project upgrades. TJB has reported in their preliminary findings that they anticipate any visual impacts created from the Gorge Reinforcement Project to be minimal and that any impacts created will not result in undue adverse impacts.

TJB's preliminary analysis shows that there are three Project components that could potentially result in the creation of visual impacts; (1) the new Gorge VELCO and GMP substations in South Burlington, (2) the reconstruction of the GMP Gorge substation, and (3) the reconstruction of the GMP 3307 line. Another aspect TJB considered when evaluating the overall aesthetics for

the Gorge Area Reinforcement Project, is the benefit from removal of GMP's Burlington Waterfront lines.

The location of the new Gorge VELCO and GMP substations in South Burlington are well sited to avoid public views. The location is currently industrial and views from the Winooski River will be limited due to steeply sloping river banks which climb in elevation quickly to the substation site, and raise the substation from views at the river level. The reconstruction of the existing GMP Gorge Colchester substation will largely mimic the existing footprint with only minor adjustment to the substation fence. Green Mountain Power does not expect that there will be a large contrast in heights between the existing and proposed substation components.

The portion of the Project that will be most visible is the GMP 3307 line that runs between the GMP Gorge Substation and the McNeil substation. However, this component of the Project is a reconstruction of an existing transmission line that is already part of the landscape. Three of the most visible structures will be retained resulting in no visual change and, based upon preliminary engineering plans, most of the structures being replaced will be of a similar structure type and located in the same location. There will be height increases to several of the structures, some of which are needed to accommodate the under-build of a distribution line through the Winooski Nature Area. The Project will consolidate existing transmission and distribution lines in that area onto single structures. The above-ground portions of existing structures range in height from 33.5 feet tall (structure #9 which will not be replaced), to 76.5 feet tall (structure #21). Structure #20 -- the shortest existing structure will be replaced – will increase to 47.5 feet tall, or an increase of 9 feet. At Project completion the tallest structure will remain structure #21 at 76.5 feet tall. The largest height increase is 22.5 feet for structure #4 part of the section through the Winooski Nature Area and is one of only two structures that have height increases greater than 13.5 feet. The Green Mountain Power line will also be reconductored with non-specular material that will limit reflectivity and help reduce the extent to which the line is currently visible. Areas that will experience the most change include the portion of the line through the Winooski Nature Area, which will also have two additional structures in addition to the distribution under-build, and near the end of the line where a portion of the line will be undergrounded between proposed structures #19.5 and #20 as part of the East Avenue Loop Project. In general, these changes will result in little visual change when evaluated against the existing conditions.

A detailed report with proposed mitigation measures will be included with the Petition to be filed in this summer.

VI. Anticipated Project Filing Date with the Vermont Public Service Board

A Petition is currently anticipated to be filed with the PSB seeking a Certificate of Public Good for all Project components on June 30, 2008.

VII. Right of the Local and Regional Planning Commissions to Comment on the Project Plans

Per Section 248(f) of Title 30 of Vermont Statutes Annotated (30 V.S.A § 248(f)), municipal and regional planning commissions can make recommendations, if any, to the PSB and to the Applicants at least 7 days prior to filing of the Petition with the PSB. So that we may take your views into account, we request that your comments be submitted no later than June 23, 2008,

which is 7 days prior to the anticipated **June 30, 2008 filing date**. Your commission also has the right to make revised recommendations within 45 days after the date the Petition is filed with the Public Service Board, if the Petition contains new or more detailed information that was not previously included in these plans.

For additional information regarding this process, including your planning commission's right to participate in the PSB's proceeding, please refer to the "Guide to the Vermont Public Service Board's Section 248 Process" which can be found at http://www.state.vt.us/psb/.

As the Project is still in the design phase, we will continue to have discussions and expect to receive feedback on this Project from your representatives, as well as various key stakeholders. Please note that the PSB Petition and filing anticipated for June 30, 2008, as well as other pertinent Project updates, will be posted on VELCO's website at: www.velco.com/Templates/default.asp?pageId=166.

If you are interested in a presentation on this Project, or have comments or request further information, please contact Jerry Ostrander, the Project Manager for the Gorge Reinforcement Project, at 802-770-6491, or jostrander@velco.com. If you are a customer of Green Mountain and have questions regarding the NTA strategies or the Gorge GMP substation expansion and line connection, you can also contact Josh Castonguay at 802-655-8754.

Thank you for your participation in this process.

Sincerely,

Jerry Ostrander
VELCO Project Manager

Josh Castonguay
GMP Project Manager

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