

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Joint Petition of Vermont Electric Power Company, Inc.,)
(VELCO) Vermont Transco LLC, Green Mountain Power)
Corporation (GMP) and Vermont Electric Cooperative, Inc.)
(VEC) for a Certificate of Public Good pursuant to)
30 V.S.A. § 248(j) authorizing them to upgrade VELCO's)
Tafts Corners substation in Williston, Vermont and to)
Remove VEC's existing substation)

Docket No. ____

PREFILED TESTIMONY OF
SCOTT S. MALLORY
ON BEHALF OF
VERMONT ELECTRIC POWER COMPANY, INC.

Summary of Testimony

Scott S. Mallory's testimony provides a project summary, explains the need, summarizes the benefits and outlines Project costs. In addition, Mr. Mallory addresses the substantive criteria of 30 V.S.A. § 248.

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VERMONT ELECTRIC POWER COMPANY, INC.

Introduction

1 Q1. Please state your name, current employer, business address, and position.

2 A1. My name is Scott S. Mallory, and I am currently employed by Vermont Electric Power
3 Company Inc. and Vermont Transco LLC (collectively referred to as “VELCO”) with the
4 business address of 366 Pinnacle Ridge Road, Rutland, VT 05701. I am a Project Lead at
5 VELCO, managing the second phase of the Tafts Corners Substation Project (Project), as
6 well as assisting in the management of other projects.

7

8 Q2. Please describe your educational background and work experience.

1 A2. My resumé is attached as Exhibit VELCO-Mallory-1.

2

3 Q3. Have you testified previously before the Public Service Board?

4 A3. Yes, I have. I have provided testimony on the behalf of VELCO in Docket No. 7314 for
5 the East Avenue Loop Project, in Docket No. 6860 for the Northwest Vermont Reliability
6 Project, and in other dockets on behalf of Washington Electric Cooperative, Inc.

7

8 Q4. What is the purpose of your testimony in this proceeding?

9 A4. VELCO, Green Mountain Power Corporation (Green Mountain Power), and Vermont
10 Electric Cooperative, Inc. (VEC) (collectively referred to as “Petitioners”) are seeking
11 Board permission for the Project. My testimony provides a project summary, explains
12 the need for the Project, summarizes its benefits, and outlines Project costs. In addition, I
13 address the substantive criteria of 30 V.S.A. § 248. Terry Cecchini of Green Mountain
14 Power and Harry Abendroth of VEC explain the needs of their companies for the Project
15 in greater detail and they also describe the distribution upgrades related to the Project.

16

17 **Overview of Existing System, Project Need, System Stability, and Reliability**

18 [30 V.S.A. § 248(b)(2) and (3)]

19 Q5. Please describe the Project.

- 1 A5. The Project consists of the following additions within the existing fenced-in yard of the
2 VELCO Tafts Corners Substation in Williston, Vermont:
- 3 a) Three (3) 115 kV circuit breakers and associated equipment.
 - 4 b) 115 kV structural steel, buswork, and disconnect switches.
 - 5 c) One (1) new power transformer, rated capacity of 25/33.3/41.7 MVA, 115/12.47
6 kV, with +/- 10% Load Tap Changer.
 - 7 d) One (1) 12.47 kV indoor metalclad switchgear lineup consisting of two (2) 3,000
8 amp bank breakers, ten (10) feeder breakers, and one (1) 3,000 amp bus tie
9 breaker.
 - 10 e) Protection, control and metering switchboards.
 - 11 f) One (1) transformer foundation and oil containment for the new transformer listed
12 above.
 - 13 g) Equipment foundations for cable riser stands, and underground conduits and
14 cable.
 - 15 h) Cable riser stands for the new transformer, and cable riser stands and disconnect
16 switches to allow for a mobile transformer connection.
 - 17 i) Second battery system to provide redundancy.
 - 18 j) One (1) take-off structure within the substation for the 12.47 kV and 34.5 kV
19 circuits to exit from the south end of the substation.
 - 20 k) One (1) transitional structure within the substation for the existing 34.5 kV circuit.
21

22 The engineering general arrangement drawings graphically illustrate the Project
23 components. Exhibit VELCO-Mallory-2. The circled items on Exhibit VELCO-
24 Mallory-2 denote the new equipment that the Petitioners will add. As the profile view
25 illustrates, the new equipment ranges in height from 22' to 30' matching that of the
26 existing substation bus, and thus does not exceed the height of the pre-existing A-frame
27 structures on the north and south ends that are 40' to 50' in height.

28 Further, the engineering one-line diagrams illustrate the electrical configuration
29 details. Exhibit VELCO-Mallory-3. The USGS topographical map and the general

1 project orthophotograph with the overlaid general arrangement drawing of the Project
2 identify the Project's geographic location. Exhibits VELCO-Mallory-4 & 5 (Orthophoto
3 and USGS Map).

4
5 Q6. Does the Project have any impacts outside of the existing fenced-in yard of the VELCO
6 Tafts Corners Substation?

7 A6. Yes, there are two Project impacts outside of the substation yard. The Petitioners have
8 chosen to improve the Project's aesthetic impacts by removing the first two 34.5 kV
9 poles immediately south of the substation that transition up to the 34.5 kV H-frame at the
10 end of I-89. The Petitioners will replace them with a new take-off structure and a
11 transitional structure built at a lower elevation within the substation. Also, if the Board
12 approves the Project as proposed, VEC intends to remove its Williston Substation as part
13 of the Project. Additionally, as noted in Answer 4 above, there are distribution upgrades
14 related to the Project that will occur outside of the substation.

15
16 Q7. Please describe VELCO's interest in the Project and the scope of your testimony.

17 A7. This Project represents a transmission solution, i.e. installing additional transmission
18 equipment in the substation, to address two distinct distribution problems. VELCO will
19 manage the Project, which includes designing, constructing, and maintaining the Project
20 facilities. Thus, my testimony focuses on the need to install one new 12.47 kV

1 (25/33.3/41.7 MVA) power transformer and the other associated upgrades at VELCO's
2 Tafts Corners Substation in order to meet the needs of Green Mountain Power and VEC.
3 In support of the request for a Certificate of Public Good (CPG) authorizing the proposed
4 substation upgrades, I will address each of the criteria under 30 V.S.A. § 248. Green
5 Mountain Power and VEC address the need for the Project from their perspectives.
6

7 Q8. Please describe the transmission, sub-transmission, and distribution systems that serve the
8 area of need.

9 A8. The Petitioners designed the Project and related distribution upgrades to improve
10 electrical system capacity. The Project will also maintain reliability for the greater
11 Williston area and for the bulk power system. Green Mountain Power and VEC provide
12 distribution service to the greater Williston area, which includes portions of Williston, St.
13 George, Shelburne, and South Burlington. In turn, VELCO's 115 kV transmission
14 network and area 34.5 kV sub-transmission network serve these distribution systems.
15 Exhibit VELCO-Mallory-6. Specifically, VELCO delivers power to its Tafts Corners
16 and Essex substations, which supply the sub-transmission and distribution systems of
17 Green Mountain Power and VEC. The 34.5 kV sub-transmission system feeds the area of
18 need through Green Mountain Power's Digital and Essex substations and VEC's
19 Williston substation. The customers fed from the distribution circuits emanating from the
20 Digital, Essex, and VEC Williston substations comprise the area of need.

1 According to Green Mountain Power and VEC, the area of need contains
2 approximately 2,458 and 1,011 end user accounts respectively. VELCO's Tafts Corners
3 Substation is a critical element of the transmission and distribution system in this area as
4 it supports the 34.5 kV systems of Green Mountain Power and VEC. As noted in Docket
5 No. 6839, which docket addressed the substation's original construction, the Petitioners
6 designed the substation to accommodate two 12.47 kV distribution transformers to be
7 installed in the future.¹

8
9 Q9. Why are these proposed Project upgrades needed now?

10 A9. VEC and Green Mountain Power need the proposed upgrades for different reasons.

11 As Mr. Cecchini testifies, Green Mountain Power needs additional distribution
12 capacity to meet the increasing loads in the Williston area and to reduce load on its
13 Digital Substation transformer to avoid an overloaded condition. Projected load growth
14 in the Williston area is expected to exceed the normal operating capacity limits of the
15 43G2, 43G4, and 19G3 distribution circuits in 2009, as well as the capacity of the Digital
16 Substation transformer that supplies much of this load. Exhibit Green Mountain Power-

¹ In Docket 6839, the Petitioners informed the Board that the "substation design and dimensions will accommodate the future additions of up to two distribution transformers to supply additional load growth anticipated by [Green Mountain Power] and VEC in the Williston area." Docket 6839, Prefiled Testimony of Ronald Belval at 10 (Apr. 1, 2003); see also Docket 6839, Prefiled Testimony of Harry Abendroth at 8 (Apr. 1, 2003) (explaining that the "design and height of the 34.5 kV line proposed in this proceeding will incorporate provisions for the under-build of up to two 12.47 kV distribution lines in the future").

1 Cecchini-1 highlights this need graphically by comparing the expected load growth to the
2 design capacity of these circuits.

3 As Mr. Abendroth testifies, VEC needs to replace an aged substation. VEC's
4 Williston Substation has reached the end of its useful life and needs to be replaced or
5 rebuilt to improve reliability, capacity, and safety. The nameplate capacity of VEC's
6 substation will be exceeded by 2011. Rebuilding at the existing VEC site is not viable
7 due to lack of available land. The Project avoids the need for VEC to construct and
8 operate a new substation for the foreseeable future within Williston and in fact, will allow
9 VEC to remove its aged Williston Substation.

10 The Project directly addresses Green Mountain Power and VEC's problems by:
11 (1) providing additional load serving capacity to the distribution system in the area of
12 need via a new transformer connected to the 115 kV transmission system with new 12.47
13 kV circuits; (2) reducing the loads on the 34.5 kV Digital Substation transformer (Green
14 Mountain Power will shift load from the 12.47 kV circuits served from the 34.5 kV
15 system to the new 12.47 kV circuits at Tafts Corners served from the 115 kV system);
16 and (3) allowing VEC to replace and remove its aged Williston Substation and serve its
17 customers more reliably, due to redundancy in design for maintenance purposes, without
18 having to build a new substation. The Project solves these needs on a joint basis among
19 the Petitioners with a previously anticipated incremental upgrade to an existing
20 substation.

1 In sum, if VELCO does not provide additional distribution capacity in the project
2 area for Green Mountain Power and VEC, the above-mentioned distribution lines, and/or
3 sub-transmission transformer will likely overload under peak load conditions with
4 expected growth in the coming years. This could result in customer outages, inability to
5 serve some portion of electrical load, and equipment damage.

6
7 Q10. When do the Petitioners expect to complete the Project?

8 A10. The Petitioners hope to receive a CPG by October, 2008. Immediately thereafter, the
9 Petitioners will commence construction and complete the Project prior to the summer
10 peak period of 2009. The currently scheduled completion date is May 1, 2009. Exhibit
11 VELCO-Mallory-7 (Sheet 4).

12
13 Q11. Will the proposed substation upgrades fit within the existing substation fence?

14 A11. Yes, the Project's transmission components will fit completely within the existing
15 substation fence.

16
17 Q12. What impact will this upgrade have on system stability and reliability?

18 A12. VELCO has determined in its 2006 Vermont Transmission System 10 Year Long Range
19 Plan Analysis that the Project will have no adverse impact on the stability and reliability
20 of the VELCO transmission system. In fact, the Project could improve system reliability

1 by reducing the loading on the Tafts Corners and Essex substation 115/34.5 kV
2 transformers. The Project will reduce the loading on these transformers by transferring
3 the load from the 34.5 kV system to the 115/12.5 kV transformer proposed at Tafts
4 Corners. Additionally, the Project will reduce the loading on the 34.5 kV Digital
5 Substation Transformer.

6
7 Q13. Has the regional system operator, ISO-NE, reviewed this Project and if so, what have
8 they determined?

9 A13. ISO-NE has reviewed the Project design and potential for impacts to the bulk power
10 system of New England and has issued a letter of no adverse impact allowing VELCO
11 permission to construct. Exhibit VELCO-Mallory-8.

12
13 **Project Cost And Alternatives**

14 Q14. What is the estimated Project cost?

15 A14. As per Exhibit VELCO-Mallory-7, the budget estimate for the Project is \$9.3 million.
16 Project costs break down into seven (7) components: Material, Labor, Equipment (rental),
17 Indirects, Escalation, Capital Interest, and Contingency. Major assumptions were: (1) a
18 Section 248(j) permitting process; (2) no agency permits for construction; and (3) use of
19 VELCO work crews to construct most of the Project. This estimate does not include any

1 expected costs that Green Mountain Power or VEC would directly incur for their
2 distribution upgrades related to the Project. Exhibit VELCO-Mallory-7 (Sheet 1).

3
4 Q15. Please explain the components of the cost estimate.

5 A15. Direct costs (i.e., Material, Labor, and Equipment) were provided by PLM Electric Power
6 Engineering, Inc. utilizing cost data from VELCO projects recently completed or
7 currently in progress (e.g. New Haven and Granite substations, and specific quotes for the
8 Tafts Corners transformer) or from other projects recently constructed in the New
9 England area. VELCO reviewed and analyzed the estimates by comparing them to actual
10 costs VELCO incurred for the recently completed comparable scopes of work.

11 VELCO estimated the indirect costs based on the people/hours required to support
12 the Project, including but not limited to engineering and design, legal expenses,
13 environmental and aesthetic expertise, and general Project support.

14 VELCO developed escalation costs by utilizing an anticipated 2007-2009
15 spending plan, a projection of the Handy-Whitman cost index for direct costs, and
16 Consumer Price Index for indirect costs. Exhibit VELCO-Mallory-7 (Sheet 4).

17 VELCO applied a capital interest rate (interest cost during construction) by using
18 current VELCO annual estimate rates and the Project spending plan presented in sheet 3
19 of Exhibit VELCO-Mallory-7. VELCO based the capital interest rate on its credit rating

1 and is subject to change based on the financial market. Exhibit VELCO-Mallory-7
2 (Sheet 3).

3 Finally, VELCO applied a 15% contingency based on the Project design and the
4 level of certainty and risk regarding the Project definition. Exhibit VELCO-Mallory-7
5 (Sheet 5).

6
7 Q16. How are the Petitioners allocating the substation upgrade costs?

8 A16. The Petitioners have signed a cost allocation agreement detailing the responsibilities of
9 each party (Exhibit VELCO-Mallory-9). VELCO has broken down the cost estimate into
10 the following categories.

11	- Pool Transmission Facilities (PTF)	\$2,076,382
12	- Non-PTF (Specific)	\$4,593,937
13	- Non-PTF (Exclusive)	\$1,790,040
14	- Non-PTF (Shared Use)	\$854,850
15	Total	\$9,315,209

16
17 Q17. Has the regional system operator, ISO-NE, approved of regional cost sharing for this
18 Project?

19 A17. The ISO-NE has reviewed the Project cost through the NEPOOL Reliability Committee
20 at its 4/15/08 meeting. I expect ISO-NE to issue a letter approving VELCO's request to

1 treat up to \$2.25 million as PTF with New England regional rate treatment via ISO-NE's
2 tariff; the requested \$2.25 million is greater than the estimated \$2.077 million due to
3 revisions to the estimate since submitted to ISO-NE and to account for current substation
4 non-PTF assets that will become PTF assets due to the Project (i.e., upon completion of
5 the 115 kV bus). At the NEPOOL meeting mentioned above, the Reliability Committee
6 recommended that ISO-NE approve of VELCO's application and estimated PTF costs.
7 Based upon my experience with ISO-NE and NEPOOL, I expect that ISO-NE will concur
8 with this recommendation. Thus, we expect regional cost sharing for the \$2.077 million
9 PTF designated portion of the total cost estimate (approximately 22% of the estimated
10 Project cost). Given that Vermont's load ratio share of regionalized costs is
11 approximately 4.6%, Vermont is expected to pay approximately \$95,000 of this PTF cost
12 portion.

13
14 Q18. Could the same benefits be achieved in a more cost-effective manner by efficiency,
15 generation, conservation or other load management measures?

16 A18. No. The Petitioners studied non-transmission alternatives over the course of several
17 years for the Green Mountain Power portion of area as part of the Area Specific
18 Collaborative (ASC) process in Docket 6801 to determine if Green Mountain Power
19 could defer or eliminate the need for the Project distribution upgrades. Based upon a
20 September 2006 alternatives analysis, the Petitioners pursued the Project as no

1 alternatives were viable or could produce significant savings. The analysis from 2006
2 has been updated with the 2008 “A Study of Alternatives To Tafts Corners Distribution
3 Project,” Exhibit VELCO-Mallory-10.

4 The 2008 update shows that savings from energy efficiency cannot reduce load
5 fast enough, initially or against expected future load growth, to defer Green Mountain
6 Power’s date of need (i.e., 1.63 MW of potential cumulative energy efficiency savings
7 after seven years compared to the required load reduction of 7.04 MW). As for VEC’s
8 need to replace its Williston Substation, energy efficiency would not be an equivalent
9 alternative because a reduction in electrical demand would not eliminate the need to
10 replace the function of the existing VEC Williston substation to serve its 1,011
11 customers.

12 The 2008 study of distributed generation revealed that, although generation could
13 produce savings by deferring Green Mountain Power’s need for five years, the expected
14 savings are not substantial (approximately \$810,000). Further, there are significant
15 technological risks associated with distributed generation resources that outweigh the
16 savings of distributed generation. These risks derive from the numerous unknown factors
17 related to such resources, such as site location, fuel supply, operational
18 procedures/experience, electrical equivalence, interconnection costs, and capital
19 investment constraints. In 2006, these savings were estimated at \$153,000 at which point
20 in time the Petitioners decided to pursue the Project. In addition, distributed generation

1 would not satisfy VEC's need to replace its existing substation. A reduction in electrical
2 demand would not eliminate the need to replace the function of the existing VEC
3 Williston substation.

4 The study also shows that given the required frequency and duration of
5 hypothetical load management events, load management is not an equivalent alternative
6 to meet either Green Mountain Power's or VEC's current needs.

7 Thus, the Project is the least cost viable alternative that meets the needs of both
8 Green Mountain Power and VEC.

9
10 Q19. Have Green Mountain Power or VEC investigated transmission or distribution
11 alternatives to the Project?

12 A19. Green Mountain Power and VEC have separately addressed transmission or distribution
13 alternatives in their testimonies.

14
15 Q20. Has the Project development conformed to the transmission planning requirements
16 approved in the Memorandum of Understanding (MOU) of Docket 7081?

17 A20. Yes. Paragraph 102 of the Docket 7081 MOU noted a specific exclusion for the Tafts
18 Corners Project regarding the public engagement and non-transmission alternative
19 ("NTA") analysis provisions of the MOU. In VELCO's view, this exemption was made
20 in recognition of the years of analysis and ASC discussions that have already taken place

1 on this Project and alternatives. Notwithstanding the above, VELCO presented and
2 discussed Project information with the Vermont System Planning Committee (VSPC) on
3 March 11, 2008 to keep them abreast of Project developments and identify the Project as
4 one that had been developed prior to establishment of VSPC procedures regarding plan
5 review, NTA analysis, and public engagement.

6
7 **Orderly Development of the Region**

8 [30 V.S.A. § 248(b)(1)]

9 Q21. Will the substation upgrade unduly interfere with the orderly development of the region,
10 with due consideration having been given to the recommendations of the municipal and
11 regional planning commissions and municipal legislative bodies?

12 A21. No. In Docket 6839, the Board concluded that the Tafts Corners Substation would not
13 unduly interfere with the orderly development of the region, with due consideration given
14 to the recommendations of the Town of Williston's and the Chittenden County Regional
15 Planning Commission's plans. The Project does not change this conclusion because the
16 proposed upgrades fit within the existing fence and improve the electric sub-transmission
17 and distribution systems. In fact, the expansion being proposed here was specifically
18 contemplated in Docket 6839.

1 I have reviewed the 2006 Town of Williston Comprehensive Plan (WCP). The
2 WCP includes recommendations for the siting of transmission lines and associated
3 facilities:

4 The Public Service Board should confine new transmission lines and
5 associated facilities to existing utility corridors, and require that they be
6 placed underground where feasible. Utility lines and pole placements, and
7 substation siting or expansion should minimize disturbance to wetlands,
8 streams, wildlife habitat, views, and other natural and historic resources.
9 The clearing of existing vegetation should be minimized.

10
11 (WCP at 71.)

12 In Appendix F, at pages F-2 and F-3, the WCP anticipates upgrades to the VELCO
13 transmission system located within the Town. Appendix F specifically notes that the
14 Tafts Corners Substation “was designed to allow for the installation of two additional 115
15 kV to 12.5 kV step-down transformers” and that “VEC anticipates the need for additional
16 upgrades within the next five years, either as a joint-venture with GMP at the Tafts
17 Corners Substation or in the form of a new substation.”

18 The Petitioners designed the Project to optimize the use of the existing utility
19 infrastructure in Williston. We also designed the Project to confine the proposed
20 additional utility infrastructure within the existing substation yard. As a result, this
21 Project has no impact on wetlands, streams, wildlife habitat, views, and other natural and
22 historic resources.

23 Mr. Abendroth of VEC and I have discussed the Project with Mr. Lee Nellis, the
24 Williston Town Planner, on several occasions and have also presented information and

1 answered questions on the Project before the Town of Williston Select Board on March
2 10, 2008. At the March 10, 2008 meeting, the Town waived the 45-day advance notice
3 requirement in 30 V.S.A. § 248(f). Exhibit VELCO-Mallory-11.

4
5 Q22. Have you reviewed the Chittenden County regional plan?

6 A22. Yes. The Chittenden County Regional Planning Commission (CCRPC) adopted its
7 Chittenden County Regional Plan on August 28, 2006 (CCRP). The CCRP states as a
8 policy objective that “[e]nergy production, transmission, and distribution infrastructure in
9 Chittenden County should be efficient, reliable, cost-effective, and environmentally
10 responsible.” Further, the CCRP adopts a policy that “a larger share of the Region’s
11 energy needs should be supplied by a combination of responsible new generation in the
12 Region, maintenance of renewable power sources (such as hydroelectric power),
13 *improved transmission*, and gains made through increased efficiency and conservation.”
14 (CCRP at 10.14, emphasis added.) In terms of stimulating economic development, the
15 CCRP states that the “State and municipalities should support infrastructure investment
16 to foster economic development in areas planned for development.” (CCRP at 6.13.)

17 Consistent with the CCRP, the Petitioners designed the Project to improve the
18 electric sub-transmission and distribution systems, making the electric infrastructure
19 system more dependable. In addition, the Petitioners planned the Project entirely within

1 an existing transmission substation yard, thereby minimizing the aesthetic and
2 environmental effects of placing facilities in a new location.

3 I have discussed the Project with CCRPC planner Samantha Tilton during March
4 2008. The CCRPC has waived the 45-day advance notice requirement of Board Rule
5 5.400 and 30 V.S.A. 248(f) and has expressed no comments on the Project at this time.
6 Exhibit VELCO-Mallory-12.

7
8 **Economic Benefit**

9 [30 V.S.A. § 248(b)(4)]

10 Q23. Will the Project result in an economic benefit to the State?

11 A23. Yes. This Project creates economic and safety benefits to the citizens of Vermont
12 because it is the least-cost alternative to resolve the identified pressing reliability needs.
13 It also provides energy savings through reduced line losses. Table 5, Exhibit VELCO-
14 Mallory-10. By improving the reliability of the Chittenden County electrical system, the
15 Project will avoid the costs and safety problems associated with power outages.

16 The CCRP notes that Chittenden County has the largest concentration of people
17 and employers in the State. There are critical businesses/institutions that depend on
18 reliable electric service in this area, such as major shopping centers (*e.g.*, Maple Tree
19 Place), major shipping vendors, hotels, traffic lights, and State Police facilities in the
20 immediate vicinity. For example, the area of need includes the Town of Williston's Tafts

1 Corners area, which in 2007 became the first area in Vermont to be designated as a State
2 Growth Center. Exhibit VELCO-Mallory-13. This designation enhances Williston's
3 ability to attract dense commercial and/or residential growth. The Project allows for an
4 expected level of economic growth in the service area and will provide reliable electric
5 service to meet the system's pressing capacity needs of the system in this area.

6
7 **Aesthetics, Historic Sites, Air and Water Purity, the Natural Environment**
8 **and Public Health and Safety**

9 [30 V.S.A. § 248(b)(5)]

10 Q24. Will this Project have an undue adverse effect on historic sites?

11 A24. No. VELCO received Division of Historic Preservation concurrence regarding no
12 historic sites at the Substation as part of its original construction. Docket 6839, at 23
13 (Findings 101 & 102). The Project will not impact below-ground historic sites because
14 all work areas have previously been disturbed.

15
16 Q25. Will this Project have an undue adverse effect on aesthetics?

17 A25. No. Petitioners will install Project components within the fenced-in substation. The
18 existing berms and plantings will sufficiently screen this equipment and thus the
19 proposed upgrades will not create an undue adverse effect on aesthetics. Also, no

1 additional substation lighting is proposed with the Project. Terry Boyle's Aesthetic
2 Evaluation Report further addresses this issue. Exhibit VELCO-Mallory-14.

3 The proposed Project will improve the aesthetics of the area by removing two
4 existing take-off pole structures that are currently adjacent to the south side of the
5 substation and visible from Interstate 89 and a new take-off structure and transitional pole
6 within the substation yard. This design creates an improvement for Interstate 89
7 motorists by lowering the viewed structure heights to a level that is sufficiently screened,
8 moving the structures further away from their view, and creating a more ordered
9 arrangement of the 34.5 kV and 12.47 kV circuits exiting the south side of the substation.

10
11 **Outstanding Resource Waters**

12 [10 V.S.A. § 1424a(d) & 30 V.S.A. § 248(b)(8)]

13 Q26. Will the Project affect any outstanding resource waters?

14 A26. No. There are no outstanding resource waters adjacent to the substation location, nor will
15 any be associated with this Project. In addition, no sediment from the minor earth
16 disturbing activities resulting from this installation will leave the site. Exhibit VELCO-
17 Mallory-15.

18

19

20

Water and Air Pollution

[10 V.S.A. § 6086(a)(1)]

1
2
3 Q27. Will the Project result in undue adverse effect on air and water purity and the natural
4 environment?

5 A27. No. The Board concluded in Docket 6839 (Finding # 59) that the Tafts Corners
6 Substation project would not result in undue water or air pollution. The proposed
7 upgrades do not change this conclusion. John Stamatov of VELCO performed an
8 analysis of the environmental impact of the upgrades and concluded there would be none.
9 Please see his analysis, which is attached as Exhibit VELCO-Mallory-15.

10
11 Q28. Will the Project result in undue air pollution?

12 A28. The installation and operation of the proposed upgrades will not unduly impact air
13 quality. The Project will create minimal, short-term impacts during construction from
14 use of diesel and gasoline powered trucks. Operating the substation will not produce air
15 emissions. *Id.*

16
17 Q29. Will the Project result in undue adverse noise pollution?

18 A29. No. Resource Systems Group, Inc. (RSG) conducted sound level monitoring at the Tafts
19 Corners Substation to determine the existing sound power levels for the existing
20 transformer. As explained more fully in RSG's report, the monitoring indicated that

1 interstate and local traffic noise and aircraft flight path noise dominate the background
2 sound levels in the area. Hourly average background sound pressure levels were as low
3 as 40 dBA at night and were typically between 50 and 58 dBA during the day. Exhibit
4 VELCO-Mallory-16.

5 RSG also modeled the existing and proposed conditions. Under the proposed
6 situation of an additional transformer, the substation sound levels perceptible to the
7 nearest residential area are modeled to be between 26 and 31 dBA, which are below the
8 existing background levels noted above. The nearest residential area, a hotel, is located
9 more than 700 feet from the substation.

10

11 Q30. Will the Project result in undue water pollution?

12 A30. The construction work will take place within the existing substation fence, and VELCO
13 does not anticipate any discharges from the construction work or operation of the
14 proposed upgrades that could potentially cause any water pollution. Exhibit VELCO-
15 Mallory-15.

16

17

18

Headwaters

19

[10 V.S.A. § 6086(a)(1)(A)]

20

Q31. Will the project have an undue adverse effect on any headwaters of the state?

1 A31. The Project is not located in headwaters of the state.

2 **Waste Disposal**

3 [10 V.S.A. § 6086(a)(1)(B)]

4 Q32. Please discuss VELCO's plans regarding waste disposal.

5 A32. The Project does not involve disposal of wastes, and therefore will not involve the
6 injection of waste materials or any harmful or toxic substances into ground water or
7 wells. *Id.* VELCO will dispose of construction debris in a state-approved landfill. The
8 Project will not result in increases in storm water flow and will not require a stormwater
9 permit.

10 **Water Conservation**

11 [10 V.S.A. § 6086(a)(1)(C)]

12 Q33. Please describe water conservation measures associated with the Project.

13 A33. Because the Project will not require any new use of municipal water supplies during or
14 after construction, no water conservation methods are necessary. *Id.*

15
16 **Floodways**

17 [10 V.S.A. § 6086(a)(1)(D)]

18 Q34. Is any part of the Project located within a 100 year flood boundary or floodplain?

19 A34. No. The Project is not located within a 100 year flood boundary or floodplain. *Id.*

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Streams

[10 V.S.A. § 6086(a)(1)(E)]

- Q35. Describe any **streams** in the vicinity of the Project.
- A35. There are no streams located in the Project’s vicinity. *Id.*

Shorelines

[10 V.S.A. § 6086(a)(1)(F)]

- Q36. Does the Project affect any shorelines?
- A36. No. There are no shorelines near the Project. *Id.*

Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

- Q37. Is there any impact on wetlands from this Project?
- A37. No wetlands, regulated or otherwise, are located in the Substation proper, nor will the proposed Project construction impact any wetlands. *Id.*

Water Supply

[10 V.S.A. § 6086(a)(2)&(3)]

- Q38. Will the Project burden existing water supplies?

1 A38. No. The Project will not require any changes to the existing municipal water supply, so
2 there will no burden on existing water supplies. *Id.*

3
4 **Soil Erosion**

5 10 V.S.A. § 6086(a)(4)

6 Q39. Will the Project cause soil erosion?

7 A39. No. Petitioners will conduct all of the minor amount of earth work required for footings,
8 VEC conduit modifications, and installation of the oil containment vessel for the new
9 transformer within the confines of the existing fence line, and thus will not create soil
10 erosion. The Project will not require tree clearing, but will require minimal earth
11 disturbance. Petitioners do not anticipate using dust control, but if necessary, we will
12 control dust by applying water or calcium chloride on disturbed areas. *Id.*

13
14 **Traffic**

15 [10 V.S.A. § 6086(a)(5)]

16 Q40. Will there be any traffic problems resulting from the Project?

17 A40. Petitioners expect no long-term traffic impacts from the Project and only minor short-
18 term traffic impacts due to deliveries of Project equipment to the Substation site during
19 the construction period (expected to be October 2008 through May 2009). Such
20 deliveries will use existing roads with vehicles that are commonly used on such public

1 roads. Petitioners will coordinate with the property manager of Maple Tree Place, Inc. to
2 safely move any item that requires an oversized sized truck to the job site.

3

4

Educational & Municipal Services

5

[10 V.S.A. § 6086(a)(6)&(7)]

6

Q41. What will be the impact on educational and municipal services?

7

A41. The Project will not have any impact on educational or other municipal services.

8

9

**Rare And Irreplaceable Natural Areas, Necessary Wildlife Habitat,
Endangered Species and Primary Agricultural Soils**

10

11

12

[10 V.S.A. § 6086(a)(8)]

13

Q42. Will this Project result in any undue adverse effects on Rare and Irreplaceable Natural
14 Areas or Endangered Species Habitat?

15

A42. No. There are no natural areas or endangered species present in the substation, and the
16 Project will not have an impact on any agricultural soils. *Id.*

17

18

Development Affecting Public Investments

19

[10 V.S.A. § 6086(a)(9)(K)]

20

Q43. Will the Project negatively impact public investment in a public resource?

1 A43. No. Because the Project is an upgrade of existing facilities, it will not have a negative
2 impact any public investments in a public resource. Nor should it interfere with the
3 public's use or enjoyment of, or access to such resources.

4

5 **Public Health and Safety**

6 [30 V.S.A. § 248(b)(5)]

7 Q44. Will the Project have any adverse effects on the health, safety, or welfare of the public or
8 adjoining landowners?

9 A44. No. The Project is an expansion of facilities within the existing substation fence, and will
10 be designed in accordance with the National Electric Safety Code requirements. The
11 overall footprint of the substation, as observed at the fence line, will not increase. The
12 Petitioners will use high-quality materials and adhere to prudent utility construction
13 practices throughout the construction phase. The Project will not unnecessarily or
14 unreasonably endanger the public or adjoining landowners.

15

16 **Consistency with Integrated Resource Plan**

17 [30 V.S.A. § 248(b)(6)]

18 Q45. Is the Project consistent with a recent integrated resource plan?

19 A45. Yes. While VELCO does not have an integrated resource plan, I have reviewed
20 VELCO's 2006 Vermont Transmission System 10 Year Long Range Plan Analysis

1 (“VELCO Plan”) and found that the Project is consistent with the VELCO Plan. VELCO
2 presumed that the distribution transformer upgrade was part of the base case in
3 determining the impacts of other projects on the Vermont transmission system. In
4 addition, Green Mountain Power and VEC have Integrated Resource Plans (IRPs) and the
5 testimonies of Terry Cecchini and Harry Abendroth address the Project’s consistency
6 with their IRPs.

7
8 **Compliance with Twenty Year Electric Plan**

9 [30 V.S.A. § 248(b)(7)]

10 Q46. Does the Project comply with the Department of Public Service’s 2005 Vermont Electric
11 Plan?

12 A46. Yes. Vermont’s Twenty Year Electric Plan adopted by the Department of Public Service
13 in January of 2005 sets forth several basic objectives that must be satisfied in serving the
14 public interest. When utilities design and implement long range resource plans, the Plan
15 requires them to strive to meet Vermont’s electric energy needs in a manner that is
16 “efficient, adequate, reliable, secure, sustainable, affordable, safe, and environmentally
17 sound, while encouraging the state’s economic vitality and maintaining consistency with
18 other state policies.” Utilities must “carefully balance[]” these objectives. The Project
19 strikes the proper balance among each of these objectives.

1 help defer more expensive distribution reinforcements and thereby reduce costs for
2 Vermont customers.

3 Finally, the upgrades will not create an undue adverse impact for VEC and Green
4 Mountain Power's utility workers. Engineers from VELCO, VEC, and Green Mountain
5 Power have discussed the resulting shifts of load from the 34.5 kV system to the 115 kV
6 system and will continue to discuss protection system settings related to the Project as
7 they are designed. The Project will serve distribution circuits that are generally operated
8 on a radial basis and do not have the potential to create unintended current flows that
9 could be a danger. Additionally, the Petitioners will discuss equipment outages and
10 operational control of Project facilities during and post-construction throughout the
11 ongoing regularly scheduled weekly operational meetings that all parties attend. This
12 inter-company communication and understanding of the electrical systems will aid in
13 avoiding accidents that could impact a utility or its workers.

14

15 Q48. Does this conclude your testimony?

16 A48. Yes.

EXHIBIT LIST

Exhibit VELCO-Mallory 1	Scott Mallory's Resume
Exhibit VELCO-Mallory 2	Engineering general arrangement drawings
Exhibit VELCO-Mallory 3	One Line Diagram
Exhibit VELCO-Mallory 4	USGS Topographical Map
Exhibit VELCO-Mallory 5	Orthophoto of Substation Area
Exhibit VELCO-Mallory 6	Chittenden County Transmission System Map
Exhibit VELCO-Mallory 7	Cost Estimate Detail Sheets
Exhibit VELCO-Mallory 8	ISO-NE PPA Approval Letter
Exhibit VELCO-Mallory 9	Cost Allocation Agreement
Exhibit VELCO-Mallory 10	A Study of Alternatives to Tafts Corners Distribution Project
Exhibit VELCO-Mallory 11	Waivers from the Town of Williston Selectboard and Planning Commission
Exhibit VELCO-Mallory 12	CCRPC Waiver
Exhibit VELCO-Mallory 13	Champlain Business Journal, "Taft Corner 'Official Growth' Area" (Jan. 7, 2008)
Exhibit VELCO-Mallory 14	Aesthetic Evaluation
Exhibit VELCO-Mallory 15	Environmental Assessment
Exhibit VELCO-Mallory 16	Noise Report
Exhibit VELCO-Mallory 17	Color Photos of Substation

ADJOINING LANDOWNER LIST

Taft's Corners Substation

Parcel No. 08-104-029
Maurice and Pauline LaPierre
73 South Street
Burlington, VT 05401

Parcel No. 08-103-002
Inland Western Williston (Maple Tree Place)
P.O. Box 9273
Oak Brook, IL 60522

Parcel No. 08-103-10
Champlain Water District
Queen City Park Road
South Burlington, VT 05403

Parcel No. 13-086-008
Hurricane Hotel, LLC
2 Corporate Drive, Suite 334
Shelton, CT 06484

Parcel No. 13-086-002
Equity Inns Realty LLC
100 Crescent Court, Suite 1000
Dallas, TX 75201

I-89 Right-of-way
Craig Keller
Chief of Utilities and Permits
Vermont Agency of Transportation
One National Life Drive
Montpelier, VT 05633-5001

VEC's Hurricane Lane, Williston Substation

Parcel ID No. 13-098-021-000
Robert M. and Rosemarie D. Pelletier
163 Snowdrift Lane
Williston, VT 05495

Parcel ID No. 12-098-011-000
Michael and Cynthia Olson
98 Snowdrift Lane
Williston, VT 05495

Parcel ID No. 12-098-001-000
Byron and Jennifer Gabaree
46 Old Creamery Road
Williston, VT 05495

Parcel ID No. 13-185-003-000
Wedgewood Development Corporation
P.O. Box 907
Williston, VT 05495

Parcel ID No. COM.052
Common Land for Wedgewood Development Corporation