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**Attachment A to DPS Reply Brief  
VELCO Northwest Reliability Project, Docket No. 6860**

**PROPOSED CPG CONDITIONS  
Vermont Department of Public Service, December 17, 2004**

In reply to the proposed CPG included in Appendix B of VELCO's proposed findings and brief, the DPS requests that the Board impose the following conditions as part of any CPG it issues in this matter. These proposed conditions are based on those requested in the Department's proposal for decision submitted on November 24, 2004, along with an additional condition pertaining to the Meach Cove airport requested in the Department's reply brief to which this document is attached. These proposed conditions are not intended to be exclusive of any non-conflicting conditions proposed by VELCO.

Potential Supply Shortfall During NRP Construction

1. This condition addresses a potential supply shortfall during project construction.
  - a. Within 120 days of issuance of a CPG, VELCO shall submit to the Public Service Board an evaluation of whether temporary or permanent generation should be incorporated into the NRP plan given historical and expected market rules. This evaluation shall include:
    - i. A cost/benefit analysis;
    - ii. Consideration of the extent of availability of generation on short notice due to emergent conditions through 2007;
    - iii. Given the regular shortages forecast, resolution of how shortfalls should be effectively addressed; and
    - iv. Identification of various contract options and counter parties when

- evaluating generation proposals, including involving VGS and using generation as an economic development tool where appropriate.
- b. In the event the cost/benefit analysis argues against acquiring generation, and given VELCO's obligation to be poised to respond to component losses within 30 minutes, within 60 days of completing the above evaluation, VELCO shall:
    - i. Heighten emergency preparedness planning (including running drills).
    - ii. Develop detailed contingency plans to assure an organized and effective fast response results in the event of the loss of Highgate or PV20 as contemplated in VELCO's system failure scenario.
    - iii. As detailed in ISO-NE's OP 4 procedures, consider the inclusion of local and ISO-NE load response programs in emergency preparedness.
  - c. The Board shall retain jurisdiction to assure VELCO takes appropriate measures to address the potential supply shortfall.

#### Granite Substation

2. At the Granite substation, VELCO shall not install the originally proposed configuration for connecting reactive support to the 115 kV system. The use of a 115 kV underground connection at Granite also is not approved at this time. VELCO shall use a 115 kV underground connection at Granite only as a last resort, and with prior Board approval.
3. Prior to site preparation or commencement of construction at the Granite substation, VELCO shall take the following actions in selecting the appropriate, least-cost dynamic VAR technology for Granite:
  - a. Perform a detailed analysis to determine the suitability of synchronous condensers for this transmission application, specifically to determine if there are any "fatal flaws" regarding technical performance; and
  - b. Develop a functional specification for the various applicable technologies<sup>1</sup> and

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<sup>1</sup>Please note that this proposed CPG condition contains a correction to its proposed finding number 220 on page 110 of DPS' proposal for decision. The correction is the deletion of the

request detailed quotes for a specified modular configuration. The applicable technologies shall include synchronous condensers (assuming no fatal flaws were found) and FACTS devices including static var compensators (SVCs) and static compensators (STATCOMs). The specifications would require, at a minimum, dynamic response characteristics, guaranteed losses (under likely operational profiles), installed cost, the cost of spare parts and/or modules, footprint requirements, guaranteed maximum noise levels, operational and maintenance requirements, the manufacturer's experience with transmission applications, predicted response to faults (power quality), predicted interaction with nearby FACTS and high-voltage direct current (HVDC) installations (including the STATCOM at Essex, the Highgate converter, and the Phase I HVDC terminal at Comerford, New Hampshire), conditions under which gate blocks or machine trips are likely to occur, and the vendor's capability to perform system simulations.

- c. As part of its actions in a and b above, conduct special studies, with due consideration of the cost of the studies in the technology and vendor selection process:
    - i. to evaluate the impact (either positive or negative) of a device's dynamic response on nearby customers; and
    - ii. to evaluate the interaction of the device on nearby rotating machines, FACTS devices and HVDC installations.
  - d. Obtain Board approval for the selected dynamic VAR technology.
4. VELCO shall assure that the footprint allocation at the Granite substation will allow for potential use of any applicable dynamic VAR technologies that meet the functional requirements. If substation expansion beyond that currently proposed is required for the selected technology, prior to site preparation or commencement construction:
- a. VELCO shall explore the feasibility of constructing any further expansion of the

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words "each of" from the first line of number 220.b.

Granite substation (beyond that currently proposed) to the northwest rather than toward the Dexter and Gagnon properties; and

- b. VELCO shall obtain prior Board approval of any such further expansion.
5. Lighting for the Granite substation shall be further reviewed as part of VELCO's post-certification review filings.

Aesthetic Mitigation Measures

6. VELCO shall comply with David Raphael's recommendations as stated in findings 254-294 of the Department's proposal for decision. As part of its post-certification review filings, VELCO shall provide detailed mitigation measures designed specifically for the areas delineated by Mr. Raphael, in accordance with the Department's proposed finding 251. VELCO shall prepare planting plans with plant materials of sufficient size and number, as well as plans for pole placements and other measures to ensure that an undue adverse impact will not result from this project. The plans shall include single pole structures as recommended by Mr. Raphael in several places. Pole heights shall be designed consistent with Mr. Raphael's recommendations.
7. When preparing final design plans to meet Mr. Raphael's recommendations and for submittal to the Board, VELCO shall consider and make appropriate use of the structure design options recommended by DPS witness George Smith and contained in the Department's proposed findings 295 through 297. Before any implementation of Options 2 and 3, as described in proposed finding 295, for reducing pole heights, VELCO shall conduct appropriate studies related to ice unloading, wind galloping, and lightning protection.
8. As part of its post-certification review filings, VELCO shall use Mr. Raphael's list of planting options for effective landscaping as provided in the Plant Materials Guide section of his report (DPS-DR-1). As specified in Exhibit DPS-DR-1 at 147-149 and in Raphael, surreb. at 10-11, VELCO shall explore the use of cultivars of the listed species to provide options where screening is required but height is an issue, and shall employ the tallest

shrubs possible where screening is proposed under lines.<sup>2</sup>

9. As part of its post-certification review filings, VELCO shall, for areas that Mr. Raphael has identified as aesthetically sensitive, stake and delineate in the field the specific pole and corridor locations and what vegetation will stay and what will be cut in each aesthetically sensitive location.

### Lighting

10. At all NRP substations, VELCO shall install sufficient screening coupled with non-reflective ground surface material to minimize light trespass and night sky glow to an acceptable level in the adjacent neighborhood as specified in DPS-DR-10 at 62.
11. VELCO shall employ reduced lighting levels (wattage), and aggressive cutoff technology, as well as light source shielding, to ensure that the methods employed will minimize light trespass and night sky glow to an acceptable level in the adjacent neighborhood.
12. In emergency situations when additional substation lighting is necessary, VELCO shall take reasonable steps to shield lights from nearby residences.

### Noise

13. For all substations and other noise generators, VELCO shall provide the following as part of its post-certification review filings to assure appropriate noise mitigation:
  - a. the baseline noise measurements;
  - b. estimates of noise levels that could be expected after the project is constructed;
  - c. VELCO's evaluation as to whether noise mitigation is required at any of the substations or other noise generators and the plans for undertaking this mitigation, including relevant sound level specifications for equipment including transformers, PARs, and dynamic reactive devices; and

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<sup>2</sup>DPS concurs with VELCO's proposed CPG condition number 17 on page 5 of Appendix B to its proposed findings and brief and believes that this condition will satisfy the DPS' recommendations in finding number 303 on page 150 of DPS' proposed findings.

- d. VELCO's proposed noise mitigation measures.
14. To ensure that design specifications for noise mitigation have been met and additional noise mitigation employed as necessary, within 90 days of placing a given substation or other noise generator in-service, VELCO shall submit to the Board post-construction noise measurements at the substations or other noise generator and locations external to the substation or noise generator as specified by the Board, including but not limited to nearby residences such as the Dexter and Gagnon residences near the Granite substation.
15. VELCO shall implement all noise mitigation measures determined by the Board to appropriate.

#### Meach Cove Airport

16. VELCO shall comply with FAA regulations regarding the height of any poles that might interfere with safe operations at the Meach Cove airport, and shall submit to the Board, prior to site preparation or commencement of construction, a compliance filing showing that the pole heights will so comply.

#### Transformer Acquisition

17. VELCO shall continue its practice for transformer acquisition of using a methodology that accounts for the cost of transformer losses to assure that the equipment is acquired in a least-cost manner, as required by the 1994 Twenty Year Plan.

#### NESC Standards

18. VELCO shall construct all components of the NRP to meet the NESC standards, as required by PSB Rule 3.500.

#### Post-Certification Review

19. Prior to site preparation or commencement of construction of a given segment or component of the NRP, VELCO shall obtain Board approval of such segment or

component, in accordance with the process set out in Section XIV of the Department's proposal for decision filed November 24, 2004.

- a. VELCO shall file, within two weeks of the date of this CPG, VELCO's proposal for the dates on which it will make the series of post-certification filings discussed in that section of the Department's proposal for decision. In such filing, VELCO shall indicate which set of components (e.g., the 345 kV line or a portion thereof) will be filed on which date, and describe in detail the scope of what VELCO proposes to file.
- b. VELCO's post-certification filings shall show proposed locations and design details for all facilities, proposed clearing, proposed noise mitigation, and proposed aesthetic mitigation.
- c. VELCO's post-certification filings shall conform to the requirements of Conditions 6 through 13, 15 and 18, above.
- d. VELCO's post-certification filings for Granite shall conform to the requirements of Conditions 3 through 5, above, as well as including specific plans for aesthetic and noise mitigation resulting from discussions with nearby property owners.
- e. VELCO's post-certification filing for the area that includes the Meach Cove airport shall conform to Condition 16, above.
- f. VELCO's post certification filing that includes the Routes 125/7 intersection in East Middlebury shall conform to the discussion following Findings 261 in the Department's proposal for decision of November 24, 2004.
- g. VELCO's post-certification filing that includes Greenbush Road in Charlotte should conform to the discussion following Finding 271 in the DPS' proposal for decision.
- h. VELCO's post-certification filings shall be served on all parties unless a party has indicated that it does not wish to receive those filings or some of them.
- i. The standard for post-certification review will be whether the final design plans are consistent with the Board's approval and whether the proposed plans and

mitigation function as anticipated.

Retention of Jurisdiction

20. The Board shall retain continuing jurisdiction to assure that the project meets the criteria of 30 V.S.A. § 248 and to review final construction and all aesthetic, noise and lighting mitigation and implementation thereof, and to order such additional mitigation as it determines appropriate.