
VERMONT SYSTEM PLANNING COMMITTEE

ANNUAL REPORT TO THE PUBLIC SERVICE BOARD & PUBLIC SERVICE DEPARTMENT

JANUARY __, 2011

INTRODUCTION

In accordance with the Memorandum of Understanding (MOU) approved by the Public Service Board in Docket 7081¹, this document comprises the 2011 annual report of the Vermont System Planning Committee (VSPC).

Among its provisions, the Docket 7081 MOU requires, annually by January 15, commencing in 2008, that the VSPC provide a report to the Public Service Board (PSB or Board) and Department of Public Service (DPS), and post the report on the VSPC website, consisting of at least the following:

89. A report on each Reliability Deficiency identified to date in the Plan or through the process described in Steps 1 through 6, above, including:
 - i. The status of NTA [Non-Transmission Alternative] Analysis for the Reliability Deficiency.
 - ii. The status of decision-making on the selection of alternative(s) to address the Reliability Deficiency.
 - iii. The status of decision-making on the allocation of costs of the alternative to address the Reliability Deficiency.
 - iv. The strategy chosen for implementing the alternative selected to address the Reliability Deficiency.
 - v. The status of implementation of the alternative(s) to address the Reliability Deficiency.

¹ Investigation into Least-Cost Integrated Resource Planning for Vermont Electric Power Company, Inc.'s Transmission System.

- vi. All documentation pursuant to paragraph 86, above, relating to advisory votes within the preceding calendar year.²
- 90. A statement of the dates and locations of all VSPC meetings held during the preceding year.³

This document represents the 2011 VSPC annual report. It reports on the status of transmission and non-transmission analysis, solution selection, cost allocation, and implementation planning of all identified reliability deficiencies as required by the MOU, as well as the meetings and organizational work of the VSPC during 2010.

VSPC MEETINGS AND PROCESS

The past year was the third full year of VSPC operation. During this year, the Committee carried out the demand-side management potential study requirements of the MOU, continued work on the reliability deficiencies identified in the 2009 three-year update of the 20-year *Long-Range Transmission Plan* (the Plan), increased its engagement with regional planning activities affecting Vermont's transmission system, and developed concepts for modifying the VSPC process to be more nimble and better align with the regional planning process. A *Project Priority List* addressing the deficiencies in the 2009 Plan was filed with the Board in the first quarter, and subsequently amended in a June 29, 2010, VELCO filing.

During 2010, the VSPC completed the following work:

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| 2/8/2010 | VSPC non-disclosure agreement form for confidential information and Critical Energy Infrastructure Information filed with PSB. |
| 2/11/2010 | Project Priority List filed with PSB. |
| 6/29/2010 | VELCO informational filing modifying dates in the Project Priority List. |
| 11/30/2010 | Potential Studies on Combined Heat and Power and Customer-Sited Generation completed by La Capra Associates. ⁴ |
| 12/20/2010 | Budget Unconstrained Demand-Side Management Potential Study completed by Vermont Energy Investment Corporation (VEIC). ⁵ |

The VSPC held the following full committee meetings during 2009:

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| 1/13/2010 | Special meeting by phone to consider Non-Disclosure Agreement form and Annual Report. |
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² ¶ 86 requires the VSPC to take advisory votes to resolve disputes regarding determinations of affected utilities and cost allocation.

³ Docket 7081 MOU at 35-36.

⁴ This study and the Budget Unconstrained DSM Potential Study were required by Paragraph 1, Attachment F, MOU, Docket 7081.

⁵ See note 4.

2/10/2010	Special meeting by phone to consider Non-Disclosure Agreement form and Annual Report.
3/10/2010	Regular quarterly meeting, Randolph.
6/9/2010	Regular quarterly meeting, Montpelier.
9/8/2010	Regular quarterly meeting, Rutland.
12/8/2010	Regular quarterly meeting, South Burlington.

The subcommittees of the VSPC met throughout the year as follows:

- Energy Efficiency & Forecasting Subcommittee: The Energy Efficiency & Forecasting Subcommittee met frequently during 2010 to complete work on its Guidelines for Load Forecast Development, manage the two DSM potential studies and continue to foster greater coordination between load reduction projections and demand forecasts. The full Subcommittee met January 28, March 25, April 7, May 20, June 7, August 5, August 26, November 5, November 22, December 9, and December 20. In addition, a four-person subcommittee of the full group served as the oversight committee for the DSM potential studies and met frequently to develop the relevant RFP and supervise the work.
- Generation Subcommittee: The Generation Subcommittee met on June 10 to consider a change in the language of its charter. The subcommittee's proposed charter amendments were approved by the full VSPC at its December meeting.
- Procedures Subcommittee: The Procedures Subcommittee served as the vehicle for continued consideration of Critical Energy Infrastructure Information (CEII) procedures. While the subcommittee did not meet during the year, its members moved the CEII issues forward through a workshop process at the PSB.
- Public Participation Subcommittee: The Public Participation Subcommittee met April 14 and November 5 to consider ways of increasing public participation in the VSPC process, to provide input on public outreach processes associated with specific reliability issues and the Plan, and to review website redesigns in progress.
- Technical Coordinating Subcommittee: The Technical Coordinating Subcommittee met February 22, May 26, August 23 and November 22 to plan the agendas for regular VSPC meetings. The Subcommittee also convened a workshop on September 14 for all interested participants to consider the NTA screenings for proposed projects in Jay, West Rutland, Ascutney, Bennington and Georgia.
- Transmission Subcommittee: The Transmission Subcommittee did not meet.

At the September quarterly meeting, the VSPC established an ad hoc group to develop conceptual recommendations for reforms to the VSPC process to make it more nimble and to better align with the regional planning process. The ad hoc group held two workshops, November 11 and November

18, producing conceptual recommendations that were accepted by the VSPC at its December meeting. The ad hoc group will continue to work in 2011 to bring language for proposed amendments to the Docket 7081 MOU to the March 2011 quarterly meeting.

The calendar of all VSPC meetings is posted on the VSPC website at:

<http://www.vermontspc.com/Lists/VSPC%20Calendar/List.aspx>

Agendas and meeting minutes for the subcommittees are posted on the VSPC website at:

<http://www.vermontspc.com/VSPC%20Meetings/Forms/By%20Meeting.aspx>

Agendas and meeting minutes for the full VSPC meetings are posted on the VSPC website at:

<http://www.vermontspc.com/VSPC%20Meetings/Forms/By%20Meeting.aspx>

REPORT ON IDENTIFIED RELIABILITY DEFICIENCIES

Paragraph 51 of MOU requires the VSPC to develop and submit to the Board a *Project Priority List* that includes dates for transmission analysis, NTA analysis, solution selection, cost allocation and implementation strategy. The VSPC submitted its second *Project Priority List* to the Board on February 22, 2010. On June 29, VELCO made an informational filing with the Board modifying the dates for 15 of the 21 projects on the *Project Priority List*. Prior to the filing date for this annual report, VELCO is again submitting revised dates. The need for adjustments in schedule is reflective of changes in the regional planning process that have fully taken effect since the MOU was adopted in 2007. The 2009 Vermont Long-Range Transmission Plan was conducted before the completion of regional studies, due for release in 2011, that are likely to have significant implications for Vermont's transmission system.

As the Regional Transmission Organization for New England, the New England Independent System Operator (ISO-NE) manages the New England region's bulk electric power system, administers and operates the wholesale electricity market, administers the region's Open Access Transmission Tariff (OATT), conducts regional transmission planning, including regional 10-year studies. ISO-NE is currently conducting the 10-yr Vermont/New Hampshire Needs Assessment study, which is due for completion in the first quarter of 2011. Largely due to advocacy by Vermont utilities and regulators, ISO-NE will provide, for the first time in its history, information to the regional stakeholders regarding the size and location of potential NTAs as part of this study. Preliminary results from the needs assessment indicate a likely need for transmission upgrades or alternative solutions in Vermont to address regional reliability concerns.

Until the results of the needs assessment are known, the dates appearing in the *Project Priority List* and in this annual report remain uncertain. The problems concerning reconciliation of the Docket 7081 process with the regional planning process are a central focus of the reform effort discussed on page 3 above.

As required by the MOU, this *Annual Report* updates the Board on progress in relation to the deadlines established in the *Project Priority List* as modified by the June 29, 2010 VELCO filing, for five milestones: (1) likely transmission solutions, (2) non-transmission alternatives analysis, (3) solution selection, (4) cost allocation, and (5) implementation strategy.

PRIORITY 1: ST. JOHNSBURY

Priority 1 addresses deficiency 10 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: The St Johnsbury area is exposed to loss of load and low voltages due to transformer and line outages.

MILESTONES: This project has been constructed and is in service.

PRIORITY 2: MIDDLEBURY

Priority 2 addresses deficiency 2 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: The Middlebury area is exposed to loss of load due to a transformer outage. The proposed upgrade includes the reconductoring of 3.9 miles of 46kV transmission line in Middlebury and Weybridge, Vermont; construction of a new 46kV transmission line five miles in length in Weybridge and New Haven, Vermont; expansion of the CVPS Hewitt Road substation, including the installation of a 46kV 5.4 MVAR capacitor bank, in Bristol, Vermont; installation of new 46 kV breakers at the VELCO Middlebury substation in Middlebury, Vermont; and installation of new 46 kV breakers at the VELCO New Haven substation in New Haven, Vermont.

MILESTONES: The Board granted a CPG for this project on August 20, 2010.

PRIORITY 3A: ST. ALBANS

Priority 3A addresses deficiency 1 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: The St Albans/East Fairfax area is exposed to loss of load, low voltage and overloads due to transformer and line outages.

MILESTONES:

MILESTONES:

Transmission analysis	Completed.
NTA screening/analysis	Completed
Solution selection, cost allocation & implementation strategy	Completed.

PRIORITY 3B: GEORGIA SUBSTATION

Priority 3B addresses deficiency 1 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Breaker failure contingencies cause voltage collapse.

MILESTONES:

Transmission analysis	Completed.
NTA screening/analysis	3/30/2011 ⁶
Solution selection, cost allocation & implementation strategy	6/30/2011 ⁷ ISO-NE review has been completed.

PRIORITY 3C: GEORGIA-ST. ALBANS

Priority 3C addresses deficiency 1 (Figure 4-1) in the 2009 Plan. This component may be needed at a load level of 1275 MW, and therefore further action will not be undertaken until the issue has been re-examined again in the 2012 Plan update.

DESCRIPTION: Voltage instability from the loss of the line.

MILESTONES:

Transmission analysis	To be determined following the 2012 Plan update.
NTA screening/analysis	To be determined following the 2012 Plan update.
Solution selection, cost allocation & implementation strategy	To be determined following the 2012 Plan update.

PRIORITY 4: NORTH RUTLAND/COLD RIVER⁸

Priority 4 addresses deficiency 5 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: The Rutland/Cold River area is exposed to low voltages and overloads due to a transformer outage.

MILESTONES:

Transmission analysis	Completed.
NTA screening/analysis	3/30/2011
Solution selection, cost allocation & implementation strategy	6/30/2011

⁶ NTA screening was presented to the VSPC on 9/14/2010. Additional analysis is being completed to evaluate the financial performance of a theoretical generation solution.

⁷ Revised timing consistent with the VELCO filing of 1/8/2011.

⁸ Formerly called South Rutland Substation/Transformer.

PRIORITY 5: BLISSVILLE TRANSFORMER

Priority 5 addresses deficiency 3 (Figure 4-1) in the 2009 Plan. CVPS believes that the Blissville area study should be deferred because CVPS has determined that the outage duration meets the CVPS equal slope criteria. To address VELCO's concerns, CVPS proposes that an Operations Procedure be developed in where CVPS will sectionalize its 46 KV network when needed. Considerations for sectionalizing the 46 kV system will be thermal overloads of nearby transformers and the 46 kV system, as well as 46 kV voltages below 0.9 pu.

DESCRIPTION: The Blissville area is exposed to loss of load, low voltages and overloads due to a transformer outage.

MILESTONES:

Transmission analysis	To be determined following the 2012 Plan update.
NTA screening/analysis	To be determined following the 2012 Plan update.
Solution selection, cost allocation & implementation strategy	To be determined following the 2012 Plan update.

PRIORITY 6: HARTFORD TRANSFORMER

Priority 6 addresses deficiency 4 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: The Hartford/Chelsea area is exposed to loss of load, low voltages and overloads. Breaker failure contingencies cause voltage collapse.

MILESTONES:

Transmission analysis	6/30/2011
NTA screening/analysis	9/30/2011
Solution selection, cost allocation & implementation strategy	12/31/2011

PRIORITY 7: ASCUTNEY SUBSTATION

Priority 7 addresses deficiency 6 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Breaker failure contingencies cause voltage collapse.

MILESTONES:

Transmission analysis	Completed.
NTA screening/analysis	3/30/2011 ⁹
Solution selection, cost allocation & implementation strategy	6/30/2011 ¹⁰ ISO-NE review has been completed.

PRIORITY 8A: NEWPORT CAPACITOR

Priority 8A addresses deficiency 10 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Loss of line causes voltage collapse.

MILESTONES:

Transmission analysis	To be determined following the 2012 Plan update and taking proposed Jay area reliability upgrades into account. ¹¹
NTA screening/analysis	
Solution selection, cost allocation & implementation strategy	

PRIORITY 8B: QUEEN CITY CAPACITOR

Priority 8B addresses deficiency 8 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Loss of line causes low voltage.

MILESTONES¹²:

Transmission analysis	6/30/2011, based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	9/30/2011, based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	To be determined based on results above.

⁹ NTA screening was presented to the VSPC on 9/14/2010. Additional analysis is being completed to evaluate the financial performance of a theoretical generation solution.

¹⁰ Revised timing consistent with the VELCO filing of 1/8/2011.

¹¹ Revised timing consistent with the VELCO filing of 1/8/2011.

¹² Revised timing consistent with the VELCO filing of 1/8/2011.

PRIORITY 8C: WEST RUTLAND CAPACITOR

Priority 8C addresses deficiencies 8 and 9 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Loss of line causes low voltage.

MILESTONES¹³:

Transmission analysis	Completed.
NTA screening/analysis	Completed.
Solution selection, cost allocation & implementation strategy	Completed.

PRIORITY 8D: BLISSVILLE CAPACITOR

Priority 8D addresses deficiency 6 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Loss of line causes low voltage.

MILESTONES¹⁴:

Transmission analysis	6/30/2011, based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	9/30/2011, based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	To be determined based on results above.

PRIORITY 9: ASCUTNEY CAPACITOR

Priority 9 addresses deficiency 12 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Loss of line causes low voltage.

¹³ Revised timing consistent with the VELCO filing of 1/8/2011.

¹⁴ Revised timing consistent with the VELCO filing of 1/8/2011.

MILESTONES¹⁵:

Transmission analysis	6/30/2011, based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	9/30/2011, based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	To be determined based on results above.

PRIORITY 10: BENNINGTON SUBSTATION

Priority 10 addresses deficiency 7 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Breaker failure contingencies cause voltage collapse.

MILESTONES:

Transmission analysis	Completed.
NTA screening/analysis	3/30/2011 ¹⁶
Solution selection, cost allocation & implementation strategy	6/30/2011 ¹⁷ ISO-NE review completed.

PRIORITY 11: REACTORS AT TRANSMISSION VOLTAGE

Priority 11 addresses deficiency 9 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: High voltages during low load levels.

MILESTONES:

Transmission analysis	Completed.
NTA screening/analysis	Completed (screened out).
Solution selection, cost allocation & implementation strategy	6/30/2011 ¹⁸

¹⁵ Revised timing consistent with the VELCO filing of 1/8/2011.

¹⁶ NTA screening was presented to the VSPC on 9/14/2010. Additional analysis is being completed to evaluate the financial performance of a theoretical generation solution.

¹⁷ Revised timing consistent with the VELCO filing of 1/8/2011.

¹⁸ Revised timing consistent with the VELCO filing of 1/8/2011.

PRIORITY 12: COOLIDGE-ASCUTNEY K-31 LINE

Priority 12 addresses deficiency 12 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Line overload with a line out of service and for loss of a line.

MILESTONES:

Transmission analysis	12/30/2011; based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.

PRIORITY 13: VERNON-VERNON ROAD TAP K-186 LINE

Priority 13 addresses deficiency 11 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Line overload with a line out of service and for loss of a line.

MILESTONES:

Transmission analysis	12/30/2011; based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.

PRIORITY 14: VERNON

Priority 14 addresses deficiency 14 (Figure 4-1) in the 2009 Plan. Given the likelihood of regional projects outside Vermont to affect the solution to this deficiency, no dates have been set for the milestones on this priority pending the completion of regional studies.

DESCRIPTION: Line overload for loss of a transformer or line, particularly with a transmission facility out of service.

MILESTONES:

Transmission analysis	12/30/2011; based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.

PRIORITY 15: ASCUTNEY-ASCUTNEY TAP K-149 LINE

Priority 15 addresses deficiency 13 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Line overload with a line out of service and for loss of a line.

MILESTONES:

Transmission analysis	12/30/2011; based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.

PRIORITY 16: COOLIDGE-COLD RIVER K-32 LINE

Priority 16 addresses deficiency 15 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Line overload with a line out of service and for loss of a line.

MILESTONES:

Transmission analysis	12/30/2011; based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	12/31/2012; based on results of ISO-NE VT/NH Needs Assessment.

PRIORITY 17: ASCUTNEY TRANSFORMER

Priority 17 addresses deficiency 6 (Figure 4-1) in the 2009 Plan.

DESCRIPTION: Loss of transformer causes loss of load, low voltages and overloads.

MILESTONES:

Transmission analysis	6/30/2011
NTA screening/analysis	9/30/2011
Solution selection, cost allocation & implementation strategy	12/31/2011

PRIORITY 18: COOLIDGE TRANSFORMER

Priority 18 addresses deficiency 16 (Figure 4-1) in the 2009 Plan. Milestones to address this issue will not be established before its analysis is revisited in the 2012 Plan update.

DESCRIPTION: Loss of transformer causes low voltages and overloads.

MILESTONES:

Transmission analysis	12/30/2011; based on results of ISO-NE VT/NH Needs Assessment.
NTA screening/analysis	12/31/12; based on results of ISO-NE VT/NH Needs Assessment.
Solution selection, cost allocation & implementation strategy	12/31/12; based on results of ISO-NE VT/NH Needs Assessment.

PRIORITY 19: BARRE

Priority 19 addresses deficiency 19 (Figure 4-1) in the 2009 Plan. Milestones to address this issue will not be established before its analysis is revisited in the 2012 Plan update.

DESCRIPTION: Loss of transformer causes low voltages and overloads.

MILESTONES:

Transmission analysis	To be determined following the 2012 Plan update.
NTA screening/analysis	To be determined following the 2012 Plan update.
Solution selection, cost allocation & implementation strategy	To be determined following the 2012 Plan update.

PRIORITY 20: CHELSEA

Priority 20 addresses deficiency 4 (Figure 4-1) in the 2009 Plan. Milestones to address this issue will not be established before its analysis is revisited in the 2012 Plan update.

DESCRIPTION: Loss of transformer causes low voltages. Loss of line causes voltage collapse.

MILESTONES:

Transmission analysis	To be determined following the 2012 Plan update.
NTA screening/analysis	To be determined following the 2012 Plan update.
Solution selection, cost allocation & implementation strategy	To be determined following the 2012 Plan update.

PRIORITY 21: PLATTSBURGH-ESSEX

Priority 21 addresses deficiencies 21, 22, and 23 (Figure 4-1) in the 2009 Plan. The timing of this deficiency is undetermined at this time. Given the uncertainties, milestones to address this issue will not be established before its analysis is revisited in the 2012 Plan update.

DESCRIPTION: Severe voltage concerns and multiple overloads.

MILESTONES:

Transmission analysis	To be determined following the 2012 Plan update.
NTA screening/analysis	To be determined following the 2012 Plan update.
Solution selection, cost allocation & implementation strategy	To be determined following the 2012 Plan update.