VERMONT SYSTEM PLANNING COMMITTEE

ANNUAL REPORT TO THE PUBLIC SERVICE BOARD AND PUBLIC SERVICE DEPARTMENT

FEBRUARY 11, 2010

INTRODUCTION

In accordance with the Memorandum of Understanding (MOU) approved by the Public Service Board in Docket 7081[1], this document comprises the 2010 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 2010 VSPC annual report.[4] 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 2009.

VSPC MEETINGS AND PROCESS

The past year was the second full year of VSPC operation. It represented an important milestone in the Docket 7081 process: the commencement of the first full planning cycle under the MOU, which was initiated by the issuance of VELCO's draft three-year update of the 20-year *Long-Range Transmission Plan* (the Plan),

In January and February, the VSPC reviewed and provided input on the VSPC review draft of the Plan. VELCO incorporated VSPC input and issued a public review draft of the plan in April, 2009. A public engagement process to gather input on the plan included six public meetings held around the state, and other means for comment. VSPC members advised on the process and served as resources at the public meetings. The final plan, incorporating the public input, was filed with the Board by July 1, 2009. The VSPC began work in the fall on the *Project Priority List* and the final assignment of affected and lead utilities for dealing with the reliability deficiencies identified in the 2009 Plan. The resulting *Project Priority List* is expected to be filed in the first quarter of 2010.

During 2009, the VSPC completed the following work[5]:

1/26/2009	Filed *VSPC Annual Report* with PSB.
3/25/2009	Workshop for VSPC to update the PSB on progress to date.
12/21/2009	Filed *Evaluation of the Docket 7081 Planning Structure* with the PSB.

The VSPC held the following full committee meetings during 2009:

2/23/2009	Special meeting to discuss VELCO's draft *Long-Range Transmission Plan*, South Burlington.
3/11/2009	Regular quarterly meeting, Randolph.

[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] On January 13, 2009, the VSPC voted at a special meeting to request an extension of one month to file its Annual Report with the PSB. On January 21, 2010, the Board granted the request and required that the report be filed by February 16, 2010.
[5] All VSPC filings and products referenced in this report are posted at http://bit.ly/ahQUc1 unless otherwise noted.

6/10/2009	Regular quarterly meeting, Montpelier.
9/9/2009	Regular quarterly meeting, Rutland.
9/30/2009	Special meeting to discuss regional funding of non-transmission alternatives with Stephen Rourke, Vice President for System Planning, ISO-New England, Montpelier.
10/21/2009	Special workshop meeting to review the draft *Evaluation of the Docket 7081 Planning Structure*, Montpelier.
12/9/2009	Regular quarterly meeting, South Burlington.

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

- Energy Efficiency & Forecasting Subcommittee: Met frequently during 2009 during the preparation of Efficiency Vermont's Forecast 20 and to address other items in its work plan. Meetings were held February 6, June 4, July 28, August 28, November 12, November 18 and November 24. The subcommittee's work resulted in a high level of communication among utility personnel, VELCO planners, EVT and DPS concerning forecasting.

- Generation Subcommittee: The Generation Subcommittee met on July 27.

- Procedures Subcommittee: The Procedures Subcommittee spent much of 2009 addressing issues related to Critical Energy Infrastructure (CEII), particularly the development of a standard *Non-Disclosure Agreement* for the VSPC, pursuant to the *Information Protocol* filed by the VSPC with the Board in 2008. VELCO offered its own NDA in connection with the Plan, but the *VSPC Information Protocol* calls for the VSPC to develop and adopt an NDA to cover information necessary to the group's deliberations that is also CEII or otherwise confidential. Final action is expected on the NDA in early 2010. Procedures met on January 12, May 27, and October 21, and members conducted a number of additional conference calls to advance the issues under discussion.

- Public Participation Subcommittee: The Public Participation Subcommittee met several times during the year to advise on public outreach for draft Plan, gather input for the Docket 7081 process and consider develop strategies for increasing public participation and awareness in planning for transmission and non-transmission alternatives. The subcommittee met February 13, July 9 and October 16.

- Technical Coordinating Subcommittee: The Technical Coordinating Subcommittee met quarterly to plan the agendas for regular VSPC meetings and also convened a workshop meeting for all interested participants to hear the results of the Lyndonville project non-transmission alternatives screening. The subcommittee met January 12, February 12, March 4, May 27, August 25, August 27 and November 30.

- Transmission Subcommittee: The Transmission Subcommittee agendas focused on reviewing the St. Albans transmission analysis, developing the *Project Priority List* pursuant to the 2009 Plan, and providing input into the Docket 7081 evaluation. The subcommittee met August 3 and August 24.

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. Initially the VSPC was operating under dates for these steps that had been established in Attachment F of the MOU. In June, 2008, however, the VSPC submitted its first *Project Priority List*, which had the effect, with Board approval[6], of modifying the relevant dates and consolidating the timelines for all projects under one set of deadlines.

The MOU requires that the VSPC submit a *Project Priority List* to the PSB following each *Long-Range Transmission Plan* update. The *Project Priority List* tracking the 2009 *Plan* update was finalized and submitted to the PSB on February 10, 2010, and is attached to this report. This annual report tracks the reliability deficiencies identified in the 2009 *Plan* using the *Project Priority List* as the reporting framework. In this *Annual Report* updates the Board on progress in relation to the deadlines established in the *Project Priority List* 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: Identification of the likely transmission solution, NTA screening, solution selection, cost allocation and implementation strategy are completed and a CPG application has been filed.

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 Rd. substation, including the installation of a 46kV 5.4 MVAR capacitor bank, in Bristol, Vermont; installation of new substation

[6] Docket 7081, Public Service Board order of 7/10/2008.

breakers at the VELCO Middlebury substation in Middlebury, Vermont; and installation of new substation breakers at the VELCO New Haven substation in New Haven, Vermont.

MILESTONES: Identification of the likely transmission solution, NTA screening, solution selection, cost allocation and implementation strategy are completed. CVPS filed for the Middlebury project on 1/29/2010.

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:

Transmission analysis	Completed 5/31/2009
NTA screening/analysis	Completed 10/31/2009
Solution selection, cost allocation & implementation strategy	Completed 1/31/2010

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	6/30/2010
NTA screening/analysis	Complete (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

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: SOUTH RUTLAND SUBSTATION/TRANSFORMER

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	6/30/2010
NTA screening/analysis	12/31/2010
Solution selection, cost allocation & implementation strategy	3/31/2011

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 2010 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	9/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	12/31/2010

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	6/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

PRIORITY 8B: QUEEN CITY CAPACITOR

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

***DESCRIPTION*:** Loss of line causes low voltage.

MILESTONES:

Transmission analysis	6/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

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.

MILESTONES:

Transmission analysis	6/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

PRIORITY 8D: BLISSVILLE CAPACITOR

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

***DESCRIPTION*:** Loss of line causes low voltage.

MILESTONES:

Transmission analysis	6/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

PRIORITY 9: ASCUTNEY CAPACITOR

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

***DESCRIPTION*:** Loss of line causes low voltage.

MILESTONES:

Transmission analysis	6/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

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	9/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	12/31/2010

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	3/31/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	6/30/2010

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	12/31/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	3/31/2011

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	6/30/2010
NTA screening/analysis	Completed (screened out)
Solution selection, cost allocation & implementation strategy	9/30/2010

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	To be determined
NTA screening/analysis	To be determined
Solution selection, cost allocation & implementation strategy	To be determined

PRIORITY 15: ASCUTNEY-ASCUTNEY TAP K-149 LINES

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	12/31/2010
NTA screening/analysis	5/30/2011
Solution selection, cost allocation & implementation strategy	9/30/2011

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	12/31/2010
NTA screening/analysis	6/30/2011
Solution selection, cost allocation & implementation strategy	9/30/2011

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	3/30/2011
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. This deficiency occurs at a load level of 1210, which is not projected until 2016 based on the 2008 load forecast. 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 19: BARRE

Priority 19 addresses deficiency 19 (Figure 4-1) in the 2009 Plan. This deficiency occurs at a load level of 1275, which is not projected until 2018 based on the 2008 load forecast. 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. This deficiency occurs at a load level of 1275, which is not projected until 2018 based on the 2008 load forecast. 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. This deficiency may arise in the 2016 timeframe or sooner depending upon various scenarios. An economic project that would also resolve the reliability issue is currently under study in the region. Given the timing and 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 beyond 10-year horizon. Severe voltage concerns and multiple overloads with Highgate removed within the 10-year horizon.

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

RECOGNITION OF THE REGIONAL PLANNING PROCESS

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), and conducts regional transmission planning. ISO-NE directs regional 10-year studies, including the Vermont ISO-NE 10-yr study, and conducts its own studies. The 2009 Vermont Long-Range Transmission Plan was conducted before the completion of regional studies that are due for release in 2010. These regional studies may indicate the need for transmission upgrades in Vermont to address regional reliability concerns. Further, transmission projects may be proposed in Vermont for economic purposes. These projects could be proposed by a Vermont utility or by an independent entity. Projects that may be proposed for regional or economic needs are not address in this report, which focuses on the requirements of the Docket 7081 in-state reliability planning process. More concrete information is needed before specific regional or economic transmission projects can be described.

TIMING OF PROJECT STEPS FOR ALL IDENTIFIED RELIABILITY PROJECTS

	Year Needed *	Load MW Needed	Completed	CALENDAR QUARTERS 2010 1	2	3	4	2011 1	2	3	4	2012 1	2	3	4
Priority 1 : St. Johnsbury	pre 2009	400	T, N, SCI												
Priority 2 : Middlebury	pre 2009	700	T, N, SCI												
Priority 3A : St. Albans	pre 2009	850	T, N, SCI												
Priority 3B : Georgia substation	pre 2009	800			T	SCI									
Priority 3C : Georgia - St. Albans	pre 2018	1275	TBD												
Priority 4 : South Rutland substation / transformer	pre 2009	1000			T		N	SCI							
Priority 5 : Blissville - transformer	pre 2009	800	TBD**												
Priority 6 : Hartford - transformer	pre 2009	800							T	N	SCI				
Priority 7 : Ascutney substation	pre 2009	750				T	SCI								
Priority 8 : Newport capacitor	pre 2009	1000			T	SCI									
Priority 8 : Queen City capacitor	pre 2009	<1120			T	SCI									
Priority 8 : West Rutland capacitor	pre 2009	<1120			T	SCI									
Priority 8 : Blissville capacitor	pre 2009	<1170			T	SCI									
Priority 9 : Ascutney capacitor	pre 2009	<1170			T	SCI									
Priority 10 : Bennington substation	pre 2009	500				T	SCI								
Priority 11 : reactors @ transmission voltage	pre 2009	400		T	SCI										
Priority 12 : Coolidge - Ascutney K-31 line	pre 2009	n/a					T	SCI							
Priority 13 : VY - Vernon Road Tap K-186 line	pre 2009	n/a			T	SCI									
Priority 14 : Vernon	2010	1185	TBD												
Priority 15 : Ascutney - Ascutney Tap K-149 line	2013	1210					T		N	SCI					
Priority 16 : Coolidge - Cold River K-32 line	2013	1210					T		N	SCI					
Priority 17 : Ascutney - transformer	2013	1210						T		N	SCI				
Priority 18 : Coolidge - transformer	2016	1245	TBD												
Priority 19 : Barre	2018	1275	TBD												
Priority 20 : Chelsea	2018	1275	TBD												
Priority 21 : Plattsburgh - Essex	Note ***	n/a	TBD												

2012 Long Range Transmission Plan Published

Note * : Based upon 2008 load forecast

Note: See VSPC annual report for discussion of operational measures to address this deficiency prior to 2012 Plan update.**

Note*: Timing may be 2016 or earlier depending upon other possible scenarios**

Key: (color denotes activity in progress**)**

T = Transmission analysis
N = Non-transmission alternative analysis (priorities with no "N" entry screened out of further NTA analysis in Long-Range Plan
S = Solution selection
C = Cost allocation
I = Implementation strategy
TBD = To Be Determined after the completion of the 2012 Long Range Transmission Plan
n/a = Not applicable

2/11/2010