

## VERMONT SYSTEM PLANNING COMMITTEE

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February 12, 2013

Mrs. Susan Hudson, Clerk  
Vermont Public Service Department  
112 State St.  
Montpelier, VT 05620-2701

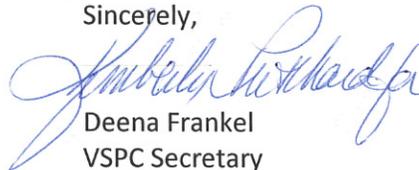
Dear Mrs. Hudson:

The Vermont System Planning Committee (VSPC) is pleased to submit its 2012 Annual Report to the Public Service Board as required by the Docket 7081 Memorandum of Understanding.

This report details activities of the VSPC during 2012 and the status of VSPC work on the reliability deficiencies identified in the 2012 Vermont Long-Range Transmission Plan.

Attached please find an original and four copies of the Annual Report. This report has also been filed with the Public Service Department.

Sincerely,



Deena Frankel  
VSPC Secretary

cc: Vermont System Planning Committee

## VERMONT SYSTEM PLANNING COMMITTEE

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February 12, 2013

Commissioner Christopher Recchia  
Vermont Public Service Department  
112 State St.  
Montpelier, VT 05620-2601

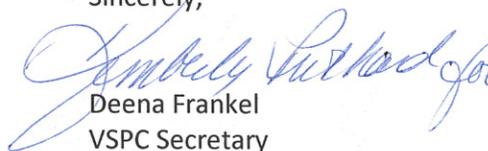
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Deena Frankel  
VSPC Secretary

cc: Vermont System Planning Committee

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# VERMONT SYSTEM PLANNING COMMITTEE

## ANNUAL REPORT TO THE PUBLIC SERVICE BOARD & PUBLIC SERVICE DEPARTMENT

FEBRUARY 15, 2013

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### INTRODUCTION

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In accordance with the Memorandum of Understanding (MOU) approved by the Public Service Board in Docket 7081 as amended<sup>1</sup>, this document comprises the 2013 annual report of the Vermont System Planning Committee (VSPC).

Among its provisions, the Docket 7081 MOU requires that the VSPC provide a report to the Public Service Board (PSB or Board) and Public Service Department (PSD) by February 15 of each year and post that report on the VSPC website. The report must consist of at least the following:

89. A report on each Reliability Deficiency identified to date in the [Long-Range Transmission] 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.

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<sup>1</sup> Investigation into Least-Cost Integrated Resource Planning for Vermont Electric Power Company, Inc.'s Transmission System. Amended 1/30/2012 and 8/1/2012.

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

This document represents the 2013 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 2012.

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## VSPC ACCOMPLISHMENTS, MEETINGS AND PROCESS

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The past year was the fifth full year of VSPC operation. During this year, the major activities and accomplishments of the Committee included:

- Reviewed and provided feedback to VELCO’s VSPC draft of the *2012 Vermont Long-Range Transmission Plan* (the Plan).
- The affected utilities (all Vermont utilities), led by Green Mountain Power (GMP) as the lead utility, met throughout the year as the Central Vermont Non-Transmission Alternatives (NTA) Study Group to ensure timely consideration of cost-effective NTAs for the one “screened in” bulk system deficiency identified in the 2012 Plan that arises within the next 10 years. The study group reported to the VSPC throughout the year.
- Obtained briefings on SPEED, standard offer and net metering programs that led to increasingly robust and detailed incorporation of information about small renewable resources into Vermont utilities’ planning processes.
- Obtained consensus on revisions to the NTA screening tool to improve the efficiency and effectiveness of the process, and filed the revisions with the Board.
- Presented to ISO-New England (ISO-NE) planning and to the ISO-NE Planning Advisory Committee the preliminary results of the Central Vermont NTA study to demonstrate the large impact of distributed renewable resources on the forecast and to advocate for a mechanism to take these small-scale resources into account in ISO planning.
- Increased the breadth and regularity of information on ISO-NE-related developments to VSPC. Illustrative presentation topics include: FERC Order 1000 compliance filings, ISO-NE strategic initiative to align markets and planning, and NESCOE’s NTA analysis proposal.
- Following 1/30/2013 PSB approval of amendments to the Docket 7081 MOU, began the process of implementing Project-Specific Action Plans and planning for structural changes recommended by the Ad Hoc Process Improvement Group.

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<sup>2</sup> ¶ 86 requires the VSPC to take advisory votes to resolve disputes regarding determinations of affected utilities and cost allocation.

<sup>3</sup> Docket 7081 MOU at 35-36.

- Provided an annual update of VSPC recommendations to the PSB, in accordance with the Board's 8/1/11 Demand Resource Plan order, on areas of the state to receive geographically targeted energy efficiency services.
- Convened and facilitated Working Group A in Docket 7873 (programmatic changes to the standard offer program) to develop recommendations concerning identifying and quantifying reliability gaps.

The VSPC held the following full committee meetings during 2009:

2/13/2012	Special meeting to review the VSPC draft of the 2012 Plan, Waterbury
3/14/2012	Quarterly meeting, Burlington
6/13/2012	Quarterly meeting, Montpelier
9/12/2012	Quarterly meeting, Rutland
12/12/2012	Quarterly meeting, Burlington

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

- Energy Efficiency & Forecasting Subcommittee: The Energy Efficiency & Forecasting Subcommittee met seven times including: April 26, May 24, August 29, September 5, September 19, September 28 and November 13. Key work products included recommendations on future funding mechanisms for geographical targeting of energy efficiency and specific recommendations for areas to be geotargeted.
- Generation Subcommittee: The Generation Subcommittee did not meet.
- Procedures Subcommittee: The Procedures Subcommittee did not meet.
- Public Participation Subcommittee: The Public Participation Subcommittee did not meet.
- Technical Coordinating Subcommittee: The Technical Coordinating Subcommittee met February 29, May 29, August 28, and November 28 to plan the agendas for regular VSPC meetings.
- Transmission Subcommittee: The Transmission Subcommittee did not meet.
- Ad Hoc Process Reform Group: The Ad Hoc Process Improvement Group met January 4, February 3, March 16, May 3 and August 23 to develop recommendations to the full VSPC for implementation of amendments to the Docket 7081 MOU and for committee structure changes to increase efficiency and effectiveness of the VSPC process. Subcommittee restructuring was in progress at the end of 2012 that will, when complete, eliminate subcommittees that do not meet the evolving needs of the VSPC, establish one or more new standing and/or ad hoc subcommittees, and develop updated charters for all subcommittees that include expiration dates where appropriate.

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 full VSPC meetings are posted on the VSPC website at:  
<http://www.vermontspc.com/VSPC%20Meetings/Forms/By%20Meeting.aspx>

No advisory votes were taken in 2012.

## REPORT ON IDENTIFIED RELIABILITY DEFICIENCIES

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Paragraph 51 of MOU states:

51. Following the filing of the Plan, for each identified reliability deficiency or group of deficiencies categorized under Paragraph 6b<sup>4</sup>:

a. The VSPC shall develop a project-specific action plan that describes a non-generic critical path from identification to resolution, including, but not limited to, dates for key milestones and coordination with anticipated regulatory and stakeholder processes;

b. The VSPC shall, subject to the rights and obligations of the DUs and all other parties to this MOU, select areas for focused NTA consideration and draft specific plans for moving that development forward; and

c. The affected VSPC subgroups, VELCO and the DUs, as applicable, will report progress in relation to the project action plan to the full VSPC quarterly and to the Board and Department not less than annually. Where milestones have been modified, progress reports shall state in reasonable detail the reason for such modification.

Following a two-month VSPC input process and an extensive public outreach process, VELCO filed the 2012 Plan with the Board on June 29, 2012, identifying reliability deficiencies and screening them to determine which had the potential to be resolved through NTAs. The Plan identifies four deficiencies that screened in for full NTA analysis: Central Vermont, Northwest Vermont, Hartford/Ascutney and the Rutland area. One of these—Northwest Vermont—was analyzed by the Central Vermont NTA study group being led by GMP, which concluded with VELCO that the project’s need date will not arise within the initial 10-year horizon. As a result, no additional activity on the Northwest Vermont deficiency is contemplated before the 2015 long range plan update. Project-specific action plans are provided below for the remaining three deficiencies that screened in.

Following the discussion of project-specific action plans, a brief update is provided below for remaining reliability deficiencies identified in the Plan.

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<sup>4</sup> This reference should state 6.a.ii, which categorizes projects that require full NTA analysis and therefore a project-specific action plan under paragraph 51. The quoted reference is a scrivener’s error that VELCO is in the process of correcting with the Board through a separate filing.

PROJECT-SPECIFIC ACTION PLANS

Project-Specific Action Plan: Central VT Reliability Deficiency																																																																			
<b>Lead utility</b>	GMP																																																																		
<b>Affected utilities</b>	All VT DUs																																																																		
<b>Description of deficiency</b>	<p>The ISO New England VT/NH Needs Assessment system modeling found voltages below acceptable limits in a sub-area including the Blissville, West Rutland, North Rutland, Cold River and Coolidge 115 kV substations. Several transmission facilities overloaded, including the Coolidge 345/115 kV autotransformer, and the 115 kV lines from Coolidge to Cold River to North Rutland to West Rutland.</p> <p>The overloads could occur when more than one element is out of service (N-1-1 conditions), particularly when power is flowing from west to east regionally. Vermont Yankee can aggravate or reduce the overload depending on whether it is running or out of service, respectively.</p>																																																																		
<b>Critical load level / timing of need</b>	<p>The so-called Central VT reliability area includes three transmission lines that would overload to a varying degree and timing, which can be illustrated by the following graph of reliability gaps, where a negative gap represents a deficiency. Analysis showed that two of the affected elements would overload within the next ten years. Below are the reliability gaps for those two line elements updated from the VELCO 2012 LRTP by the Central VT NTA Study. These gap curves indicate that the K32 line concern is immediate, and the K35 line concern would emerge in 2017.</p> <div style="text-align: center;"> <table border="1"> <caption>Central VT Reliability Gaps (Estimated Data)</caption> <thead> <tr> <th>Year</th> <th>K32 (C-CR) [MW]</th> <th>K35 (CR-NR) [MW]</th> </tr> </thead> <tbody> <tr><td>2012</td><td>0</td><td>0</td></tr> <tr><td>2013</td><td>-20</td><td>0</td></tr> <tr><td>2014</td><td>-25</td><td>0</td></tr> <tr><td>2015</td><td>-28</td><td>0</td></tr> <tr><td>2016</td><td>-30</td><td>0</td></tr> <tr><td>2017</td><td>-32</td><td>-5</td></tr> <tr><td>2018</td><td>-35</td><td>-10</td></tr> <tr><td>2019</td><td>-38</td><td>-15</td></tr> <tr><td>2020</td><td>-40</td><td>-20</td></tr> <tr><td>2021</td><td>-42</td><td>-25</td></tr> <tr><td>2022</td><td>-45</td><td>-30</td></tr> <tr><td>2023</td><td>-48</td><td>-35</td></tr> <tr><td>2024</td><td>-50</td><td>-40</td></tr> <tr><td>2025</td><td>-52</td><td>-45</td></tr> <tr><td>2026</td><td>-55</td><td>-50</td></tr> <tr><td>2027</td><td>-58</td><td>-55</td></tr> <tr><td>2028</td><td>-60</td><td>-60</td></tr> <tr><td>2029</td><td>-62</td><td>-65</td></tr> <tr><td>2030</td><td>-65</td><td>-70</td></tr> <tr><td>2031</td><td>-68</td><td>-75</td></tr> <tr><td>2032</td><td>-70</td><td>-80</td></tr> </tbody> </table> </div>	Year	K32 (C-CR) [MW]	K35 (CR-NR) [MW]	2012	0	0	2013	-20	0	2014	-25	0	2015	-28	0	2016	-30	0	2017	-32	-5	2018	-35	-10	2019	-38	-15	2020	-40	-20	2021	-42	-25	2022	-45	-30	2023	-48	-35	2024	-50	-40	2025	-52	-45	2026	-55	-50	2027	-58	-55	2028	-60	-60	2029	-62	-65	2030	-65	-70	2031	-68	-75	2032	-70	-80
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<b>Geographical area</b>	<ul style="list-style-type: none"> <li>• Voltage concerns at the Blissville, West Rutland, North Rutland, Cold River &amp; Coolidge 115 kV substations.</li> <li>• Coolidge 345/115 kV autotransformer (in Cavendish).</li> <li>• 115 kV lines from Coolidge to Cold River to North Rutland to West Rutland (through Ludlow, Mount Holly, Shrewsbury, Clarendon, Rutland and West Rutland).</li> </ul>																																																																		

<b>Transmission solution(s) &amp; study status</b>	<p>The preferred solutions identified by the VT/NH Needs Assessment include:</p> <p>Construction of a second 345 kV line between Coolidge and West Rutland with a 60 MVAR 345 kV variable shunt reactor at West Rutland.</p> <p>Estimated cost: \$157M, which includes substation costs. (Approx. VT share if all project costs are considered PTF: \$6.3M.)</p>
<b>NTA screening</b>	Screened in to full NTA analysis in the 2012 L RTP
<b>NTA solution(s) &amp; study status</b>	<p>In November of 2011, based on results of ISO New England’s VT/NH Needs Assessment, GMP convened an NTA Study Group, including all the VT DUs and VELCO, to conduct a full NTA study to determine the feasibility and economics of avoiding a transmission solution to the Central VT deficiency. Although not technically required to convene until after the July 1, 2012, publication of the Plan, the study group began meeting early to ensure adequate time to complete its work.</p> <p>Following more than a year of study, including updated load forecasts, the group has concluded the following:</p> <p>Resources already being implemented under existing state programs and policies may meet all of the reliability need on the K-35 line, thus the reliability need may be postponed beyond ten years from now. Whether or not a reliability gap exists for the K-32 line is uncertain at this time. Significantly more resources, such as those acquired through the ISO-NE forward capacity market or those developed independently, may be added in the next few years.</p> <p>VELCO will continue to monitor the system to confirm whether there is a continuing need to reinforce the system. ISO-NE is undertaking an update of the VT/NH Needs Assessment in 2013 that will utilize ISO-NE’s most recent load forecast, which projects declining load as a result of incorporating long-term energy efficiency and other resources. As a consequence of these developments, and its own work to date described below, the NTA Study Group has concluded that it is premature to quantify a need until the ISO-NE study is completed and the existence and size of a gap for the K-32 line can be more firmly established.</p>
<b>NTA/TA hybrid solution(s) &amp; study status</b>	<p>Study of the Central VT deficiency, based on the existing ISO-NE VT/NH Needs Assessment, indicates that avoiding a transmission solution to the K-32 and K-35 elements will require implementing the Coolidge Autotransformer at an estimate cost of \$23 million. However, it is possible that ISO-NE 2013 will show that the autotransformer is not needed in the near term since the critical load level is likely to exceed recently experienced peaks.</p>
<b>Solution selection</b>	ISO-NE is re-studying the VT/NH area in 2013. Solution selection for the Central VT deficiency will be subject to completion of the ISO-NE re-study and the NTA Study.
<b>Cost allocation</b>	Based on the study group’s tentative conclusion that the ISO-NE 2013 study update will likely confirm that no additional resources will need to be acquired to address the Central VT reliability gap, no cost allocation issue currently exists for a reliability solution.
<b>Public outreach</b>	Public outreach on the Central VT deficiency was conducted as part of the L RTP public outreach process. Subsequently, a public outreach plan was implemented in conjunction with the NTA Study as required by the Docket 7081 MOU. Phase 1 of the public outreach plan was conducted in the summer of 2012. A second phase of public outreach will be implemented when the NTA Study Group issues a draft report.
<b>Implementation</b>	Implementation planning will be undertaken following solution selection as discussed above.

<b>Factors that may affect project timing</b>	The key factor affecting project timing will be completion of the ISO-NE re-study of the VT/NH system needs.
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Project-Specific Action Plan: Hartford Area <sup>5</sup>		
<b>Lead utility</b>	GMP	Date of this plan:
<b>Affected utilities</b>	GMP	January 11, 2013
<b>Description of deficiency</b>	Low voltages and subtransmission line overloads in the Hartford subarea occur when a single element is out of service (VELCO’s Hartford 115/46 kV autotransformer). This is a predominantly bulk deficiency that affects the subtransmission system.	
<b>Critical load level / timing of need</b>	Approximately 80% of peak load (i.e., approximately 800 MW statewide or approximately 120 MW within the local load pocket.) Therefore, the timing is in the past.	
<b>Geographic Area</b>	The area of concern includes Salisbury and eastward, Chelsea and southward, Bradford and southward, Springfield and northward, and Bellows Falls and westward. The load in this “pocket” is assumed to grow at the very modest rate of 0.5% per year, or approximately 10% in 20 years.	
<b>Transmission solution(s) &amp; study status</b>	<p>Studies, including cost estimates, are scheduled to be completed by 11/13.</p> <ul style="list-style-type: none"> <li>• Wilder tie closure [Close the normally open Wilder 46/13.8/115 kV tie to the NGRID system]. <b>Status:</b> Supplemental analysis requested by NGRID, which was not part of the original study scope, is required to assess potential adverse impact on NGRID. This alternative’s cost estimate is still being formulated and may depend on the results of the pending supplemental analysis.</li> <li>• “Eastern Loop” creation [Close the normally open Bradford 736 switch and replace the thermally-limiting 18.75 MVA Ryegate 46/34.5 kV transformer with a unit of at least 25 MVA summer normal nameplate rating. Reconductor the thermally-limiting Newbury tap-Woodville 46 kV line]. <b>Status:</b> This alternative’s cost estimate is still being formulated.</li> <li>• “Cap and reconductor” [Add a 5.4 Mvar SCADA-switched shunt capacitor at GMP’s planned White River substation and reconductor the thermally-limiting Taftsville-Quechee-Norwich 46 kV line]. <b>Status:</b> Complete.</li> <li>• “Dynamic comp and reconductor” [Add a +5.0/-2.5 Mvar solid-state var compensator at GMP’s planned White River substation and reconductor the thermally-limiting Taftsville-Quechee-Norwich 46 kV line]. <b>Status:</b> Complete.</li> <li>• New Transformer [Add a second 115/46 kV autotransformer at Hartford for parallel operation with the existing bank].</li> </ul>	

<sup>5</sup> Referred to as “Hartford Area (Hartford, Chelsea) in 2012 Vermont Long-Range Transmission Plan, page 33.

	<p><b>Status:</b> Complete.</p> <p>Preferred transmission alternative will be presented to VSPC in 12/13.</p>
<b>NTA screening</b>	This deficiency screened in for full NTA analysis in the 2012 VT Long-Range Transmission Plan.
<b>NTA solution(s) &amp; study status</b>	<p>NTA analysis was completed in 2011. The study concluded that energy efficiency and/or generation could not feasibly and economically resolve the deficiency for the following reasons: The potential transmission solutions for this area are low in cost relative to the size of the problem. The first four of the five possible alternative solutions in the list above are estimated to have capital costs of less than \$5M, and two of them are less than \$2.5M. In contrast, it is estimated that NTA resources of 5 MW (as soon as possible) and an additional 6 MW (within ten years) would be required instead. Given the impracticality of procuring these resources in the form of DR or EE within an area of this limited size and loading (particularly for the near-term need) it is assumed that most if not all of these resources would have to be peaking generation. An estimated capital cost of such generation would be \$1.2 M/MW or \$6.0 M as soon as possible and an additional \$7.2 M within ten years. Accordingly, for this particular system deficiency, any one of several transmission solutions would clearly be less costly than the cheapest NTA.</p> <p>The NTA analysis will be presented to the VSPC by 11/13.</p>
<b>NTA/TA hybrid solution(s) &amp; study status</b>	Some modest NTA elements might be combined with the transmission alternatives listed above. No analysis yet.
<b>Solution selection</b>	Pending completion of supplemental analysis (described above) and completion of cost estimates.
<b>Cost allocation</b>	Pending solution selection.
<b>Public outreach</b>	The public outreach plan will be developed in 2014 following solution selection.
<b>Implementation</b>	The anticipated date by which a Section 248 application will be filed is beyond 2015.
<b>Factors that may affect project timing</b>	<p>The following considerations may affect project timing:</p> <ul style="list-style-type: none"> <li>• NGRID commitment/cooperation re Wilder alternative</li> <li>• Results and timing of Wilder alternative supplemental analysis</li> </ul>

Project-Specific Action Plan: Rutland/Cold River Area <sup>6</sup>		
<b>Lead utility</b>	GMP	Date of this plan:
<b>Affected utilities</b>	GMP	January 11, 2013
<b>Description of deficiency</b>	<p>Among the most difficult contingencies for this area is the loss of any one of the VELCO 115/46 kV transformers that supply it, meaning those at North Rutland, Cold River, or Blissville. Following such a loss, at least one of the remaining two transformers may overload at higher load levels, accompanied by local 46 kV line overloads and/or system under-voltage. Further load growth without remediation will exacerbate these existing problems. This is a predominantly bulk deficiency that</p>	

<sup>6</sup> Referred to as Rutland area (Blissville, North Rutland, Cold River) in the 2012 Vermont Long-Range Transmission Plan, page 32.

	affects the subtransmission system. Additionally, the recently acquired Vermont Marble Power Division (VMPD) system is sourced solely from VELCO's Florence 115/46 kV transformer. Redundant sourcing would be preferred for a load of this magnitude.
<b>Critical load level / timing of need</b>	Approximately 81% of peak load (i.e., approximately 810 MW statewide or approximately 78 MW within the local load pocket) / Past
<b>Geographical Area</b>	The GMP system in the greater Rutland area includes the 46 kV transmission system, 12.5 kV distribution system, and the concentration of customer loads in the Rutland and Cold River areas that are fed primarily by VELCO's North Rutland and Cold River 115/46 kV transformers, extending eastward to Cavendish. It also includes the 46 kV transmission and distribution systems feeding the somewhat sparser loads to the south and west of Rutland that are fed by VELCO's Blissville 115/46 kV transformer and that extend down to Dorset. It also includes the VMPD system. It is summer peaking at about 96 MW (not counting VMPD). The load in this "pocket" has grown at an average rate of 1.22% per year for the past eight years, or approximately 13% in 10 years. However, new load management and distributed generation initiatives may substantially mitigate that growth going forward, so the assumed growth rate must be reassessed.
<b>Transmission solution(s) &amp; study status</b>	<p>Studies, including cost estimates, were completed by in 2012. Reduced load projections, along with emerging resources associated with standard offer and the Solar Capital initiative require study updates.</p> <p>Three transmission solution options were evaluated in this study. All three feature a single new interconnection (i.e., transformation) from VELCO's 115 kV network to the area's 46 kV network. They would be located at North Rutland (expansion of the existing VELCO North Rutland 115/46 kV substation with a second transformer), South Rutland (new substation), or West Rutland (expansion of the existing VELCO West Rutland 345/115 kV substation). All three would also include 46 kV line reconductoring. Their evaluations have been completed, and the area's emerging load management and distributed generation initiatives are not likely to significantly change these solution options' need and timing.</p> <p>The availability of an existing 115 kV bay position at VELCO's West Rutland sub is in question, due to its possible claim by a local generation project which may or may not prove to be commercially viable. This uncertainty must be resolved in order to confidently estimate and compare all option costs, including NTAs.</p> <p>A preferred transmission alternative will be presented to the VSPC in June of 2013.</p>
<b>NTA screening</b>	This deficiency screened in for full NTA analysis in the 2012 VT Long-Range Transmission Plan.
<b>NTA solution(s) &amp; study status</b>	The preferred NTA ("NTA Option 2") has two main features. First, there is a cluster of new generation units assumed at Lalor Avenue (in Rutland City), totaling 15 MW @ 90% power factor capability at present day and 30 MW @ 90% power factor capability in 10 years. Second, the normally open 46 kV B7 connection between West Rutland and VMPD is assumed to be normally closed, GMP West Rutland to Proctor 46 kV is assumed to be reconducted/rebuilt as 477 MCM "T", and the 7 MW OMYA GT is assumed to be dispatched post-contingency, if needed to provide further area support in both time frames (present-day and 10 years). Lastly, the

	<p>normally open 46 kV West Rutland tap to Lator 46 kV line is assumed to be normally closed to further leverage the benefit of the added generation.</p> <p>However, the area’s emerging load management and distributed generation initiatives are likely to significantly change the timing, general scope and cost of the later 15 MW generation addition. Further analysis is required to reassess this need.</p> <p>The NTA analysis will be presented to the VSPC in September of 2013.</p>
<b>NTA/TA hybrid solution(s) &amp; study status</b>	Technically, the “preferred NTA” described above is really a NTA/TA hybrid because it includes significant 46 kV line upgrades and 46 kV network reconfiguration.
<b>Solution selection</b>	Pending completion of reassessment of preferred NTA (described above) and completion of cost estimates.
<b>Cost allocation</b>	Pending solution selection.
<b>Public outreach</b>	The public outreach plan will be developed in 2014 following solution selection.
<b>Implementation</b>	The anticipated date by which a Section 248 application will be filed is 2015.
<b>Factors that may affect project timing</b>	<p>The following considerations may affect project timing:</p> <ul style="list-style-type: none"> <li>• VELCO priorities and schedule</li> <li>• Resolution of open 115 kV bay at West Rutland substation.</li> </ul>

**STATUS UPDATES ON PROJECTS THAT SCREENED OUT OF FULL NTA ANALYSIS**

<i>Status update: Southeast Vermont</i>	
<b>Lead utility</b>	Green Mountain Power
<b>Description</b>	Bulk system deficiency (see page 20 of Plan). Location: Vernon to Northfield 345 kV line exceeded its current carrying capacity.
<b>NTA Screening</b>	Screened out using NTA Screening Tool
<b>Preferred alternative</b>	Rebuild the Vermont portion of the Vernon to Northfield 345 kV line.
<b>Status of decision-making on cost allocation</b>	This alternative will be funded per ISO-NE planning procedure 4 regarding pool transmission facilities, where New England utilities fund projects per their load ratio share of the New England load.
<b>Status and timing of implementation</b>	This solution is on hold. It will be implemented once Vermont Yankee retires.

<i>Status update: Connecticut River Valley</i>	
<b>Lead utility</b>	Green Mountain Power

<b>Description</b>	Bulk system deficiency (see page 22 of Plan). Location: Ascutney 115 kV line exceeded its current carrying capacity, and, with the Coolidge-Ascutney line out of service, voltages were below acceptable limits in a subarea including the Chelsea, Bellows Falls and North Road 115 kV substations.
<b>NTA Screening</b>	Screened out using NTA Screening Tool
<b>Preferred alternative</b>	Construction of a second 115 kV line between the Coolidge and Ascutney substations.
<b>Status of decision-making on cost allocation</b>	This alternative will be funded per ISO-NE planning procedure 4 regarding pool transmission facilities, where New England utilities fund projects per their load ratio share of the New England load.
<b>Status and timing of implementation</b>	VELCO will complete the I.3.9 analysis by December 2013. VELCO will file a 248 permit by June 2014. VELCO will complete the construction by June 2017.

#### *Status update: Colchester*

<b>Lead utility</b>	Green Mountain Power
<b>Description</b>	Predominantly bulk deficiency (see page 30 of Plan) involving low voltage and overloads on the sub-transmission system in N-1 conditions.
<b>NTA Screening</b>	Screened out using NTA Screening Tool
<b>Preferred alternative</b>	The preferred alternative is to reconductor the 34.5 kV GMP 3309 line using 795 ACSR (utilizing the cable equivalent to 795 ACSR for underground sections) to support post-contingency current flows along this line. Feasible alternatives do not exist.
<b>Status of decision-making on cost allocation</b>	GMP will support the costs of this project.
<b>Status and timing of implementation</b>	Reconductoring of the 3309 Line is proposed to occur in three phases: <ol style="list-style-type: none"> <li>1. The section of line between the 46Y1 tap and Structure #11 will be reconducted as part of the proposed Winooski Relocation Project. As of January 2013, this project was under consideration by the Public Service Board in Docket No. 7846.</li> <li>2. The section of line between the GMP Gorge Substation and the east end of Winooski Falls Way will be reconducted in conjunction with the development of the 16Y3, 34.5 kV distribution feeder into the downtown Winooski area. GMP intends to petition the Board under Section 248 for this project in 2013.</li> <li>3. The remainder of the reconductoring of the 3309 line is planned to occur in the 2015 to 2016 time frame.</li> </ol>

#### *Status update: St Albans/East Fairfax*

<b>Lead utility</b>	Green Mountain Power
<b>Description</b>	Predominantly bulk deficiency (see page 31 of Plan) involving 46 kV system undervoltage and overloads for loss of Nason Street source and other contingencies.
<b>NTA Screening</b>	NTAs screened in but are more costly than the preferred transmission alternative.
<b>Preferred alternative</b>	The preferred alternative is a new 115/34.5 kV transformer at VELCO's Georgia substation and a new 34.5 kV line to (and new circuit breakers at) GMP's nearby Wyeth tap.
<b>Status of decision-making on cost allocation</b>	It is anticipated that all costs will be shared by VELCO and GMP according to ownership of new facilities.
<b>Status and timing of implementation</b>	Report completion and drafting of testimony are pending, and will be completed by September 2013.

**Status update: Northern Area (Highgate, Jay, Newport, Irasburg, Burton Hill)**

<b>Lead utility</b>	Vermont Electric Cooperative
<b>Description</b>	Predominantly bulk deficiency (see page 34 of Plan) involving low voltages in the northern subarea that occur in N-1 conditions.
<b>NTA Screening</b>	A full NTA analysis was completed by VEC and VELCO. That analysis showed that an NTA would not be cost effective.
<b>Preferred alternative</b>	Complete the following upgrades sequentially at various times: <ul style="list-style-type: none"> <li>• Installation of capacitor banks at Burton Hill 46 kV</li> <li>• Upgrade the Newport 115 kV station</li> <li>• Upgrade the Irasburg substation</li> <li>• Upgrade Moshers Tap</li> </ul>
<b>Status of decision-making on cost allocation</b>	Upgrades affecting the networked transmission system will be funded by New England utilities per their load ratio share of the New England load. Cost allocation for the near term upgrades affecting the sub-transmission system will be addressed by December 2015.
<b>Status and timing of implementation</b>	VELCO and VEC are reviewing the load forecast and the load power factor. Following that review, VELCO and VEC will decide whether the timing of the proposed upgrades has changed. Confirmation of the timing will be completed by December 15, 2013.

**Status update: IBM Area**

<b>Lead utility</b>	Green Mountain Power
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<b>Description</b>	Predominantly bulk deficiency (see page 35 of Plan) involving the potential for loss of load on the 115 kV line supplying IBM due to the presence of multiple taps.
<b>NTA Screening</b>	Screened out using NTA screening tool.
<b>Preferred alternative</b>	VELCO is evaluating the transmission alternatives. This analysis is scheduled to be completed in June 2013.
<b>Status of decision-making on cost allocation</b>	Cost allocation will be addressed after the preferred transmission alternative has been selected. This decision is scheduled to be completed by December 15, 2013.
<b>Status and timing of implementation</b>	Implementation strategy will be addressed after the preferred transmission alternative has been selected. This decision is scheduled to be completed by December 15th, 2013.

<b>Status update: Vernon Road 115 kV Station</b>	
<b>Lead utility</b>	Green Mountain Power
<b>Description</b>	Predominantly bulk deficiency (see page 36 of Plan) involving the potential for loss of load in the Brattleboro subarea in N-1 conditions.
<b>NTA Screening</b>	Screened out using NTA screening tool.
<b>Preferred alternative</b>	The preferred alternative is a new 115 kV breaker at the Vernon Road substation on the 115 kV N-186 line to New Hampshire, permitting a post-contingency back-feed from the Southern Loop's 46 kV system (recently reinforced by the Newfane 115/46 kV interconnection) to Brattleboro's 69 kV system.
<b>Status of decision-making on cost allocation</b>	It is anticipated that all costs will be shared by VELCO and GMP according to ownership of new facilities.
<b>Status and timing of implementation</b>	A CPG has been received. Construction will be completed in 2013.