

Project-Specific Action Plan For the Hartford/Ascutney Area¹

Lead utility	GMP	Date of this plan:
Affected utilities	GMP	September 12, 2012
Description of deficiency	Low voltages and subtransmission line overloads in the Hartford subarea which occur when one element is out of service (VELCO's Hartford 115/46 kV autotransformer). This is a predominantly bulk deficiency that affects the subtransmission system.	
Critical load level & timing of need	Approximately 800 MW Past	
Transmission solution(s) & status	<p>Studies, including cost estimates, are scheduled to be completed by <u>TBD</u>.</p> <ul style="list-style-type: none"> • Wilder tie closure [Close the normally open Wilder 46/13.8/115 kV tie to the NGRID system]. Status: 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. • "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]. Status: This alternative's cost estimate is still being formulated. • "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]. Status: Complete. • "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]. Status: Complete. • New Transformer [Add a second 115/46 kV autotransformer at Hartford 	

¹ Referred to as "Hartford Area (Hartford, Chelsea) in 2012 Vermont Long-Range Transmission Plan, page 33.

	<p>for parallel operation with the existing bank].</p> <p>Status: Complete.</p> <p>Selection of the transmission alternative will be completed by <u>TBD</u>.</p>
NTA screening	<p>This deficiency screened in for full NTA analysis in the 2012 VT Long-Range Transmission Plan.</p>
NTA analysis	<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 unusually 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. A conservative estimate for the 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 [TBD].</p>
Public outreach	<p>The public outreach plan will be developed by <u>TBD</u> following solution selection.</p>
Section 248 application	<p>The anticipated date by which a Section 248 application will be filed is <u>TBD</u>.</p>
Factors that may affect project timing	<p>The following considerations may affect project timing:</p> <ul style="list-style-type: none"> • VELCO priorities and schedule • NGRID commitment/cooperation re Wilder alternative • Results and timing of Wilder alternative supplemental analysis