

# V S P C

## Vermont System Planning Committee

Draft Meeting Minutes  
July 12, 2017  
Double Tree Hotel  
South Burlington, VT

The Vermont System Planning Committee (VSPC) held a regular meeting on July 12, 2017, at DoubleTree Hotel, South Burlington, Vermont. Deena Frankel called the meeting to order at 9:35 a.m.

Steve Litkovitz moved approval of the April 26, 2017, minutes; Hantz Pr sum  seconded. VEIC proposed that the following addition (shown in redline) be made to the Geographic Targeting Subcommittee section of the minutes on page 2:

### Subcommittee Reports

#### GEOGRAPHIC TARGETING SUBCOMMITTEE

Ms. Frankel reported that the Geographic Targeting Subcommittee met in March to review the St. Albans NTA screening, review GMP's Hinesburg Reliability Plan, and prepare for the annual project review that identifies reliability issues that have the potential to be resolved through non-wires alternatives. The subcommittee is currently in the process of gathering reports from distribution utilities and is scheduled to meet on May 23.

Mr. Pr sum  provided an overview of the St. Albans non-transmission alternatives (NTA) screening. The St. Albans substation was constructed in 1958 and currently has several asset condition concerns, including severe cracking on concrete foundation, obsolete and degraded protection equipment, damaged control house, circuit switchers below short circuit level, and circuit breakers significantly beyond useful life. VELCO proposes to make upgrades to the substation, the tap line and the tap station. A detailed scope of work is available in the meeting materials. An NTA screening concluded that an NTA would not eliminate or defer the need of the upgrade. VEIC noted that the St. Albans area has been the location for geo-targeting energy efficiency efforts from 2007-2014, which has helped reduce load growth in the area, but the current project appears to have less to do with load growth as it does with age and condition of the assets. A petition for a certificate of public good will be filed in June.

It was agreed the revision would be circulated and, if there was no objection to the language, the minutes would be revised as shown.

### Introductions

Participants introduced themselves. A list of attendees by sector appears on page 6 of these minutes.

### SHEI Presentation and Discussion

Ms. Frankel opened the meeting with an introduction to the Sheffield-Highgate Export Interface (SHEI) limit and provided ground rules for the discussion including information restrictions related to Critical Energy Infrastructure Information (CEII), Federal Energy Regulatory Commission (FERC) Standards of Conduct for Transmission Providers and ISO-New England (ISO-NE) information policy.

Frank Etori, VELCO Director of ISO New England Relations, continued with a thorough overview of the SHEI limit issue, identifying the growth of renewable generation, market rule changes, and essential system maintenance as contributing factors to generation curtailment in the constrained area. Historically, the transmission system in Vermont's northern tier was built to serve small load and is served by the smallest wire size on VELCO's system. In recent years, substantial new generation, including utility-scale, net-metered and standard offer systems, has interconnected in Northern Vermont, leading to the need to delineate an interface area to protect system reliability. In 2013, ISO New England identified the SHEI boundaries and established generation operating limits to protect the system and ensure its stability. The limit varies based on system conditions, such as load level, generation dispatch and equipment status. Any event that reduces system strength will reduce the limit to an extent commensurate with the event's severity or the amount of grid support that the disconnected equipment provides. When the limit is reached, generation export capacity is restricted or curtailed or becomes uneconomic to run. Additional distributed generation, which has been proposed to be built in the constrained area, would likely result in further curtailment unless load in the area increases or other steps are taken to increase export capacity.

In 2016, ISO-NE implemented the Do-Not-Exceed (DNE) system, which sends dispatch instructions to generators electronically. The DNE provides a generation limit value. When resources need to be curtailed, curtailment priority is based on bid price, distribution factor and dispatch range. Behind-the-meter resources do not participate in ISO-NE markets and compensation is generally not based on market prices. Generators with Power Purchase Agreements (PPA) get paid based on PPA terms, which frequently do not reflect ISO-NE market prices.

Craig Kieny of Vermont Electric Cooperative (VEC) provided an overview of the ISO-NE energy markets, utility settlements with ISO-NE and the financial impacts to utilities from the distribution utility perspective. ISO-NE monitors load on the New England system, and dispatches generation resources from the least expensive to the most expensive until the load and generation are balanced. The auction process is designed to match electricity supply to demand at the lowest possible price point. Generators submit bids, which ISO-NE sorts in ascending order to determine how much supply is available at different price points. The lowest-priced combination of offers required to meet demand are selected as the winning bids. The clearing price is set based on the marginal unit of generation required to meet demand.

Mr. Kieny provided an example of a settlement with ISO-NE for May 1, 2017, hour ending 1200. On that day and time the SHEI area was severe congested and ISO-NE lowered the price to be paid to the generating resources (highlighted in yellow on slide 5) in the SHEI area, making it uneconomical for generators to operate at that time.

Chris Root, VELCO COO, provided an overview of potential solutions to reduce SHEI curtailments. He began with non-transmission solutions, including limiting generation growth, energy storage, dynamic voltage support, and line upgrades. VELCO has hired a consultant to perform a Sheffield-

Highgate Export Interface Alternatives Study to enable VELCO and distribution utilities to evaluate all potential solutions including reactive support, transmission, subtransmission and battery storage. The study will be completed in late August. Information will be provided to interested stakeholders as the study proceeds. VELCO will evaluate technical solutions such as voltage regulation, additional equipment installations, line upgrades and new transmission lines. It is important to note, these will not be regional reliability projects and the costs will not be shared as Pooled Transmission Facilities (PTF) New England-wide.

Ed McNamara, Department of Public Service (DPS) Planning Director, described state policy implications and the Department's approach to the SHEI issue. DPS will continue to look at transmission and non-transmission alternatives. Load management will need to be specifically addressed, and all applications for Certificates of Public Good (CPGs) will be scrutinized for load management potential. Battery storage is a possibility, but it is only useful for a limited number of hours, and will not solve all problems. Strategic electrification will continue to be practical primarily as a long-term solution given low oil prices. It will be important to evaluate the specific effects of energy efficiency and net metering in the SHEI area. One potential solution may be to lower the value of net metering and energy efficiency for the SHEI area, but these are only concepts for discussion at this time. The system has changed considerably, and it may now be appropriate to consider locational value with regard to energy efficiency and net metering. System constraints may also need to be considered in future siting of renewable generation to avoid situations like the SHEI in other areas of the state.

## **Subcommittee Reports**

### **GEOGRAPHIC TARGETING SUBCOMMITTEE**

Mr. Litkovitz reported that the subcommittee met in May to complete the review of non-wires alternatives screenings and identify those that may require reliability plans. The subcommittee received reports from Green Mountain Power (GMP) and VEC, and verbal reports from Washington Electric Cooperation and Vermont Public Power Supply Authority. Staff has followed up with Stowe Electric and Burlington Electric Department. Preliminarily, the subcommittee concluded that no projects appear to "screen in" for full non-wires alternatives analysis. The subcommittee will present findings at the October quarterly meeting for approval of a formal recommendation to be filed with Public Utilities Commission (PUC) in November.

### **FORECASTING SUBCOMMITTEE**

Ms. Frankel reported that the subcommittee met in June to provide input to the load forecast for the 2018 Vermont Long-Range Transmission Plan update. The subcommittee discussed scenarios and trends such as beneficial electrification and electric vehicles. The subcommittee will meet again in August to continue reviewing and providing input on assumptions and scenarios.

Mr. Pr sum  reported on the preliminary results of Itron's load forecast. Vermont's baseline forecasts will be impacted by heat pumps and distributed generation. The analysis shows Vermont loads are declining or flat, likely meaning that no load growth-related transmission projects will be needed over the next 20-year period.

## COORDINATING SUBCOMMITTEE

Ms. Frankel reminded the subcommittee of the meeting dates and locations for 2017-2018.

- October 18, 2017—Holiday Inn, Rutland
- January 24, 2018—Double Tree Hotel, South Burlington
- July 18, 2018—Capitol Plaza, Montpelier
- October 17, 2018—Holiday Inn, Rutland

Ms. Frankel reported that the VSPC membership vacancies have been filled, however, the PUC has not yet acted on the docket it opened to consider adding a seat to VSPC representing the planning community. All public member terms will expire on the same date—April 28, 2018. The Public Participation subcommittee will convene to discuss ways to help recruit and retain new members.

## 2018 LRTP Progress Update

Mr. Pr sum  provided an overview of the Vermont transmission planning process and reported on the development of the 2018 study plan. VELCO will provide a draft report in December to the VSPC. Between January and March, the VSPC formally provides comments. Any identified need for a transmission upgrade will be screened in the plan for its potential to be addressed with a non-wires alternative. Projects that “screen in” (i.e., have the potential to be addressed with non-wires alternatives) will subsequently receive a detailed analysis, led by the distribution utilities, with an opportunity for all stakeholders to provide input before solutions are selected. The final 2018 plan update must be filed with regulators by July 1, 2018. Public outreach will include two workshop type meetings, one in southern Vermont and one in northern Vermont, and a public hearing in Montpelier.

VELCO’s transmission system must meet NERC planning standard TPL-001-4 that requires testing of various scenarios, including no outages, outage of one element, and the outage of two or more elements. NERC and ISO-NE PP3 standards requires the system model stressed conditions such as extreme weather load, two significant resources unavailable, and maximum regional power transfers.

Next steps include reviewing the VSPC comments on scope, performing analysis and consulting distribution utilities on results and presenting the draft report at the January VSPC quarterly meeting.

## Vermont Loss of Load Exposure

Mr. Pr sum  presented on “non-consequential load shedding,” its significance to PTF assets, and ultimately how transmission projects are funded throughout New England. As a result, areas within Vermont are susceptible to single and multi-element N-1 and N-1-1 contingencies that would result in loss of load that, per planning criteria, is considered acceptable.

Mr. Pr sum  provided a brief review of TPL-001-4 standard, which requires utilities that want to use load shedding to comply with a standard to go through a stakeholder process to inform the affected communities. See meeting materials for threshold chart. The end result is that contingencies within Vermont resulting in loss of load  $\geq 300$  MW are eligible for PTF funding;  $<300$  MW load loss is acceptable and will not be addressed via ISO-NE and PTF funded projects. If the  $<300$  MW of potential load loss is mitigated, those projects costs will be funded by Vermont ratepayers.

To date VELCO has not used non-consequential load loss to meet NERC performance standards. Potential loss of load greater than 300 MW is currently being mitigated by the Connecticut River project and no mitigation is proposed for losses of load less than 300 MW.

## Regional Updates

Molly Connors from ISO-NE provided an update on the Integrating Markets and Public Policy initiative. In 2016, market participants launched a stakeholder process to discuss potential market rule changes to integrate the region's wholesale electricity markets with the public policy goals of the New England states. ISO-NE offered a conceptual approach, called Competitive Auctions with Subsidized Policy Resources (CASPR), which could be implemented in the near term. A paper describing the proposal is available on the ISO-NE website.

Ms. Connors gave an overview of changes to the regional transmission process to comply with FERC Order 1000. In addition to an open stakeholder process to develop long-range plans to address future system needs, ISO-NE initiated the Public Policy Transmission Upgrade (PPTU) process in January 2017, with a public notice requesting input on state, federal, and local public policy requirements driving transmission needs. ISO-NE and the New England States Committee on Electricity (NESCOE) agreed there are no federal or local public policies that drive the need for transmission in the regional planning process. NESCOE's and other stakeholders' input can be found on the ISO-NE Planning Advisory Committee website.

## Project Updates

**Connecticut River Valley:** Mr. Pr sum  reported that the Hartford substation component of the project has been completed and the rest of the project remains under construction.

**Northern Area:** Mr. Pr sum  reported the area will be part of the 2018 Vermont Long-Range Transmission Plan study.

**Rutland:** Mr. Kirby reported that Green Mountain Power received the CPG for the Florence project and it is expected to be complete in 2018.

**Hinesburg:** Mr. Litkovitz reported the plan has been approved by the Public Utility Commission. The plan includes installation of battery storage solution and a joint substation with VEC.

### OTHER VELCO PROJECTS

**PV20:** Mr. Pr sum  reported that VELCO is replacing cables under Lake Champlain. Drilling is currently taking place on the New York and Vermont borders for the new cables. Installation of the new cables is scheduled to be complete in fall 2017.

**Structure Condition Improvement Project:** Mr. Pr sum  reported the project aims to replace aging structures and is currently replacing 300 structures per year.

### MERCHANTS PROJECTS:

**Vermont Green Line:** Mr. Pr sum  reported the developer placed the project on hold and there is no current activity.

**New England Clean Power Link:** Mr. Pr sum  reported the studies are complete. VELCO continues discussion with developer to determine cost estimate before moving into an interconnection agreement. The project’s CPG needs to go back into the permitting process to determine necessary transmission upgrades.

**Granite State Power Link:** Mr. Pr sum  reported the studies have begun.

### **Adjournment and next meeting**

The meeting was adjourned at approximately 3:30 p.m. The next quarterly meeting is scheduled to be held from 9:30 a.m. to 4:00 p.m. on October 19, 2017, at the Holiday Inn, Rutland, VT.

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## ATTENDANCE

\*Indicates voting member

\*\*Indicates alternate

### PUBLIC SECTOR

Michael Kirick  
Michael Wickenden

### TRANSMISSION UTILITY (VELCO)

Hantz Pr sum , VELCO  
Frank Ettori, VELCO

### DISTRIBUTION UTILITIES PROVIDING TRANSMISSION (GMP, VEC)

\*Steve Litkovitz, GMP  
\*\*Rip Kirby, GMP  
\*Cyril Brunner, VEC

### LARGE TRANSMISSION-DEPENDENT DISTRIBUTION UTILITIES (BED, WEC)

\*Bill Powell, WEC  
\*James Gibbons, BED

### TRANSMISSION DEPENDENT DISTRIBUTION UTILITIES (MUNICIPALS)

Melissa Bailey, VPPSA

### SUPPLY & DEMAND RESOURCES

Nathan Vandal  
Gillian Eaton, VEIC  
Dave Westman, VEIC

### NON-VOTING MEMBERS

Ed McNamara, PSD

### STAFF

Deena Frankel, VELCO  
Shana Louiselle, VELCO

### GUESTS

Syed Ahmed  
Olivia Campbell Anderson, REV  
David Blittersdorf, All Earth Renewables  
Janet Bombardier, GMP  
Jake Brown, RAP  
Ellen Burt, Stowe Electric  
Sam Carlson, Green Lantern  
Kristin Carlson, GMP  
Jess Carney, VELCO  
Josh Castonguay, GMP  
Louis Cecere, VELCO  
Andrea Cohen, VEC  
Molly Connors, ISO-NE  
Robert Dostis, GMP  
Warren Coleman, MMR  
Dean Denis, VEC  
Tom Dunn, VELCO  
Jeff Fenn, SGC  
Steve Garwood, PowerGrid Strategies

Dave Haas, VELCO  
Scott Harding David Hill, VEIC  
Rob Hornton, GMP  
Kerrick Johnson, VELCO  
Phil Kearney, VELCO  
John Keene, SunEdison  
Craig Kieny, VEC  
Tom Knauer, PSB  
Abigail Krich, Boreas Renewables  
Anthony LaRusso, National Grid  
Joshua Leckey  
Nan Li, Constellation Energy  
Tom Lyle, BED  
Anne Margolis, PSD  
Johanna Miller, VNRC  
Derek Moretz, Encore Renewable  
Craig Myotte  
Dwarakesh Nallan, Daymark Energy  
Margaret Neves, Power Engineers

Andrew Quint, GMP  
Patty Richards, WEC  
Chris Root, VELCO  
Peter Rossi, VEC  
Mathew Rubin, V  
Zachary Samuels, Eversource  
Mark Sciarrotta, VELCO  
Ron Shems, Diamond & Robinson  
Chris Sherman, NH Transmission

James Slicer, TerraForm Power  
Doug Smith, GMP  
Jaime Smyrski, VELCO  
Tim Tremblay, VELCO  
Ken Tripp, Northern Reliability  
Charlie Van Winkle  
George Young, PUC  
John Zimmerman, VERA

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