

DRAFT VELCO Operating Committee MINUTES

Date: May 16, 2019, 11:00 a.m. – 3:00 p.m.

Location: Green Mountain Power Montpelier, VT

Call-in: 1-866-720-4556, Code: 6027065

PARTICIPATING MEMBERS

- **Burlington Electric Department (BED):** James Gibbons
- **Green Mountain Power (GMP):** Mike Burke, Ken Couture
- **Stowe Electric Department (SED):** Ellen Burt, David Kresock
- **Vermont Electric Cooperative (VEC):** Peter Rossi
- **Vermont Electric Power Company (VELCO):** Chris Root, Frank Etori, Jason Pew
- **Vermont Public Power Supply Authority (VPPSA):** Stephen Fitzhugh
- **Washington Electric Cooperative (WEC):** Bill Powell

OTHER PARTICIPANTS

Lou Cecere (VELCO), Brian Connaughton by phone (VELCO), Jeff Disorda (VELCO), Tom Dunn (VELCO), John Flynn (VELCO), Shana Louiselle by phone (VELCO), Colin Owyang (VELCO), Mark Sciarrotta (VELCO), and Chris Smith (VEC)

OPENING REMARKS

Mr. Root called the meeting to order at 11:06 a.m.

SAFETY TOPIC

Mr. Root discussed an operating event in an adjacent area that resulted in an electrical shock to a line worker. A sub-transmission line was removed from service, grounded, and removed from a structure and allowed to slack close to the ground. A worker was walking past the grounded line and made contact with it through his shoulder. This contact resulted in an electrical shock, from what is now known to be induced voltage from an adjacent transmission line. The worker was electrocuted and was knocked to the ground. The use of an AED was required to restart his heart. A full recovery is anticipated.

The potential for a similar event to occur in VT was discussed; several areas within the state that have parallel lines on shared structures or within shared ROW.

Mr. Dunn proposed a future agenda item to discuss potential areas of concern. Additionally, the grounding practices of VELCO and the VDUs could be discussed to ensure they are adequate for ensuring worker safety.

Mr. Rossi requested VELCO Safety contact VEC Safety (John Varney) to discuss. Mr. Root suggested all of the VDU safety representatives have a group discussion on the matter. This was captured as a future agenda item.

CYBER MOMENT

Mr. Root discussed the creation of a VT Utility Cyber Working Group and the possible inclusion of Mr. Jordan of the VT DPS. The group agreed unanimously that Mr. Jordan's participation in the group would be beneficial to everyone. It was also noted that Mr. Jordan would attend every other OC meeting to discuss emerging and current cyber topics.

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Mr. Dunn reported that he and other Utilities were contacted by the PUC to discuss the ongoing cyber activities in the industry.

Mr. Fitzhugh reported that Norwich University and Sandia National Laboratories have been working together and may provide additional resources for the group. Additionally, Mr. Fitzhugh is investigating hosting an OC meeting on the Norwich campus; allowing for a tour of the Norwich Cyber Security Center.

Mr. Smith discussed a recent article involving WhatsApp, a messaging application widely used and trusted for its encryption capability. It is believed that a state sponsored (Israel) group developed software that could allow smart phones with the application installed to be compromised.

MINUTES APPROVAL

Mr. Root presented the meeting minutes from April 18, 2019 for approval.

Mr. Fitzhugh moved for approval with one noted edit to correct a misspelling, Mr. Rossi seconded, and the minutes were unanimously approved.

SHEFFIELD HIGHGATE EXPORT INTERFACE (SHEI) UPDATE

Mr. Cecere provided an overview of the SHEI working group and their efforts to limit the effect to generation within the constrained area.

Mr. Rossi inquired about how this and other information would be shared with the group formed to discuss the potential curtailment of non-market generators headed by Mr. McNamara of the VT Department of Public Service (DPS). Mr. Rossi expressed his concern that one group is coming up with potential solutions that is overlapping or potentially in conflict with the VT utility working group currently being discussed. He further noted a meeting is scheduled for tomorrow (5/17/19) and that perhaps a merging of the groups might provide benefit to one another.

Mr. Gibbons reported that he does not believe the groups need to be merged, admittedly, they have overlapping issues, but each group has its own distinct focus. The group formed under the DPS is working to decide how to add generation without negative impact to the generators within the constrained area; this is an attempt at providing a long-term solution to future growth of non-market generation. The group formed by the VT utilities is designed to increase the export capability of the area by identifying several incremental changes that could sum up to larger export capabilities.

Mr. Owyang noted that with the exception of the VELCO representation, there are similar participants in each group. VELCO representation is different in that VELCO Operations is present for the DPS group and VELCO Planning is present for the VT utility group.

Mr. Cecere continued by discussing the following:

- Sheldon Springs AVR addition; ISO is reviewing the recent data from the AVR testing. Any update is not likely until mid-June at the earliest.
- Sheffield AVR addition; communication is ongoing with the plant owner. This will require a

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confirmation of technical ability and likely contained to a software update. Timing and costs have yet to be determined.

- B20 rebuild and B22 reconductor; asset condition and the subsequent need to replace aging infrastructure has provided an opportunity to make proposed changes to both the B20 and B22 sub-transmission lines. This project includes an upgrade of a sub-transmission transformer to relieve a potential thermal limitation.
- K42 rating increase; an increase of the emergency ratings will result in the potential thermal limitation on the line due to contingent thermal issues. New LIDAR data and a change of philosophy of how to calculate emergency ratings will unlock approximately 100 MVA of additional thermal capacity for use only following a contingency.

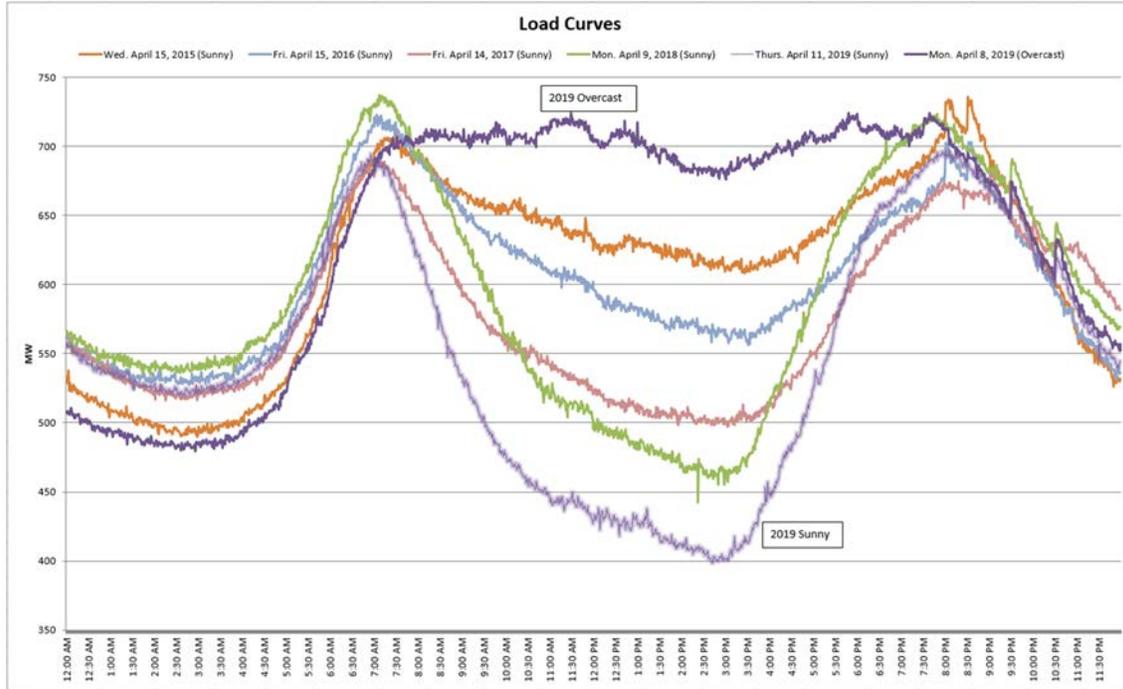
Mr. Root commented on the “Team VT” energy that has resulted in the possible solutions to the SHEI constraint. Others agreed that the collaborative effort has been beneficial for all participants.

- Battery Storage; additional considerations are being investigated beyond an earlier study that suggested a 16 MW/1 hr battery. Consideration of additional value streams beyond the mitigation of curtailments are being discussed that include peak reduction, forward capacity market, and regulation market.
- Load Building and Shifting; additional load within the constrained area can help mitigate curtailments as local load decreases the amount of export necessary. Load flexibility, cost of adding load, and other items are being discussed with efficiency VT and VEC.
- K42 Evaluation; VELCO is continuing its asset condition on the line. Items that include larger conductors, parallel line construction, and differing the conductor design/configuration are all being considered in lieu of replacement in kind. Mr. Root noted this type of solution could be a long-term mitigation project.
- In addition to the efforts being discussed to mitigate the constrained area, there are two proposed 20MW solar facilities in the ISO queue. The addition of new solar generation with the already constrained would require system upgrades that would benefit the whole area. The potential asset owner has been in contact with the VT utility working group on possible upgrades and their associated costs.
- Stakeholder engagement; both the public and state representatives are being educated on the issues within the constrained area through regular presentation to the Vermont System Planning Committee, work with the DPS, more people are being educated on the issues within the constrained area.

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2019 SPRING DUCK CURVE

Mr. Root presented a plot of April Load comparisons from 2015 through 2019. Noted is the continued trend of daytime lows exceeding the nighttime low steadily for the past 5 years and effect of the distributed solar as seen in the 2019 Overcast vs 2019 Sunny load curves.



ISO-NE UPDATE

Mr. Etori provided an overview of the New England Markets, Reliability, and Transmission groups he participates in:

- Markets Committee
 - Multi-day ahead market (4-7 days)
 - New ancillary services in the day-ahead market (add reserves to day-ahead market)
 - Seasonal forward market (yet to be determined)
- Reliability Committee
 - FERC Order 100, Greater Boston transmission needs will be the first New England Order 1000 project
- Transmission Committee
 - Interconnection Regional Operating Limit (IROL) critical generators are being identified for possible CIP cost reimbursements, similar to Designated Blackstart Resources (DBR)
 - FERC Orders 845/845A will allow interconnecting customers the option of building their own needed infrastructure for connection.
 - New England States Committee on Electricity (NESCOE) is investigating how to contain the cost of transmission construction. Specifically, they are looking for input and potential solutions.
- Additional items of note

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- Eversource is performing an unofficial survey of how each TO calculates the Regional Network Load (RNL)
- An author/contributor to RTO Insider (Regional Transmission Owner), an industry journal, has been approved for participation in NEPOOL committees
- Pilgrim nuclear power plant is shutting down 5/31/19

NORTHVIEW WEATHER UPDATE

Mr. Owyang presented the Short-term and Long-term Northview Weather proposals.

- Short-Term, the cost estimate and proposed cost allocation was discussed. Alternate cost allocations were discussed. As proposed, the short-term project remains uncommitted, as the cost allocation was not agreed upon amongst the VDUs. The OC requested that Mr. Owyang follow up with Northview to advance a proposal on tentative cost allocation and pricing subject to further discussion.
- Long-Term climate change modeling to project risk areas. Since transmission assets/VELCO will receive a benefit from a planning perspective, VELCO will therefore participate. Cost allocation for the Long-term project was discussed. A Consensus from all members was in support of VELCO pursuing the Long-term project. As such, costs associated with it will be distributed under the ISO OATT and the 91 Agreement.

EMERALD ASH BORER (EAB) UPDATE

Mr. Disorda provided a review of the EAB working group. Current discussions amongst the group through two meetings included:

- Public outreach, work has begun to educate the public on the various dangers associated with EAB and the need and means to mitigate them
 - Mr. Disorda noted that it appears that the word is getting out and landowners have been receptive to cutting live trees before they can pose a safety or reliability risk
- Training and safety
 - Tree/vegetation workers
 - Line workers
 - There is discussion of having a regional Train-the-Trainer (it was suggested by the group to include town and road workers, landscapers, etc. to get as much value from a training as possible)
- VELCO has created a door hanger with EAB information to be shared with land owners
 - This was also shared among the EAB group participants
- A generic bill stuffer for anyone to use has been proposed
 - The inclusion of all VT electric utility logos' was desired as it would show the collaborative effort being employed to mitigate possible safety and reliability risks

A discussion to request a representative of the DPS to participate in the EAB group was had. The consensus was that such representation, such as Mr. Jordan, would benefit all involved

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parties. Mr. Root will take an action item to reach out to Mr. Jordan to make the request as agreed to by the members.

OTHER BUSINESS

None

Next meeting

Date: June 20, 2019, 11:00 a.m. – 3:00 p.m.

Location: Green Mountain Power Montpelier, VT

Possible topics for discussion

- Follow-up with potential induced voltage on adjacent Sub-transmission lines, Mr. Root to discuss internally and determine a suitable provider and time.
- OP7 load shedding discussion as a follow-up to previous conversation – Mr. Pew
- Cyber topic to remain a constant on the Agenda
- Products and Services offerings – John Flynn
- Back-up Control Center, Back-up Data Center, and Disaster Recovery/Business Continuity space – Chris Root
- Current Topics in the legislature – John Flynn

MOTION TO ADJOURN

Mr. Gibbons moved to adjourn, Mr. Powell seconded, and the meeting was adjourned at 14:09pm.

Respectfully submitted,

Jason Pew
VELCO OC Secretary