VELCO Operating Committee
FINAL MINUTES

February 21, 2013, 11 a.m. – 3 p.m.
GMP Montpelier Office

Participating members: Ellen Burt by phone (Stowe Electric Department), Ken Couture (Green Mountain Power), Tom Dunn (VELCO), Ken Mason (Lyndonville Electric), Ken Nolan by phone (Burlington Electric Department), Kevin Perry by phone (Vermont Electric Cooperative), Bill Powell by phone (Washington Electric Cooperative), Paul Renaud (VELCO), Jeff Wright (Vermont Electric Cooperative).

Other participants: Chris Dutton (VELCO), Deena Frankel (VELCO), Dave Haas (VELCO), Mike Loucy (VELCO), Dan Nelson (VELCO), Thad Omand by phone (VELCO), Allen Stamp (VELCO).

Next meeting

March 21, 2013
11 a.m. – 3 p.m.

VELCO, Rutland

Meeting opening

- Mr. Dunn opened the meeting at approximately 11:00 am.

Safety topic

- Mr. Wright discussed the dangers of winter driving conditions, particularly given the number of miles driven by utility employees, and suggested we should be be continually mindful of this issue in our safety discussions.

Minutes approval

- Mr. Mason moved and Mr. Couture seconded approval of the minutes of January 17, 2013, which were approved without dissent. Mr. Wright abstained from voting.

Power Accounting

- Mr. Omand reviewed the power accounting materials in the Operating Committee (OC) package.
- Mr. Couture asked where losses are measured from in the loss calculation. Mr. Omand stated that metering is performed at the Highgate Converter's (Converter) south bus and Independent System Operator New England (ISO-NE) includes losses from the Canada-Vermont border to the Converter south bus in their hourly loss calculation. Prior to February 2013 ISO-NE had not included these losses in their calculation, reducing Vermont's settlement load. Vermont has received approximately $10 million of incorrect benefits over the past seven years due to this ISO-NE error.
- Mr. Dunn asked how the Converter loss analyses originated. Mr. Omand responded that, during a meeting held in February, 2012 with ISO-NE to align planning and settlement loads, the loss calculation was identified as a possible issue. As an outcome of this meeting, ISO-NE began researching the loss calculation. The ISO-NE hourly loss calculation is the only unknown in Vermont's load calculation and for several years VELCO has asked ISO-NE to explain how it is derived. ISO-NE's research determined that ISO-NE had neglected to account for losses between the Canada-Vermont border and the Converter south bus. Additionally, Ronald Coutu of ISO-NE has agreed to meet with VELCO on March 5, 2013, to explain in detail the methodologies used to determine Vermont's hourly load loss calculation.
- Mr. Dunn asked what is involved with converting from SCADA to MV90 for metering. Mr. Omand responded that the scope is DU-specific and dependent on the systems and number of meters a given utility employs. He

noted that particular locations provide continuous issues that the VELCO's Metering & Billing Forum would like to focus on and he would appreciate the OC's support in making these improvements.

- Mr. Nolan said it will also depend on how the metering is provided to the specific DU as some of the meters do not communicate with MV90. In certain instances, additional scope and associated costs would need to be determined. Mr. Nolan mentioned that to date BED has not been able to justify the investment of adding MV90 capabilities as it will likely require additional costs such as new hardware and phone lines.
- Mr. Wright said he likes the new load forecasting graph displayed on the Vermont Transco website, and asked if this was developed by VELCO. Mr. Nelson responded VELCO developed the tool with assistance from Competitive Computing (C2) of Colchester.
- Mr. Mason questioned the GMP and Lyndonville line loss calculation currently in use. Mr. Omand responded that historically Lyndonville was assessed 3% losses per their tariff with GMP. Subsequent to construction of the VELCO Lyndonville substation, this 3% loss calculation was left in place with the expectation that resolution of the line loss issue would occur quickly. When GMP and Lyndonville agreed to ignore losses on the line, VELCO performed a review of the metering point to ensure the metering was in agreement with the decision. The review discovered that losses were still being applied when power flows from GMP to Lyndonville. A calculation was performed to determine the amount that Lyndonville incorrectly paid for losses which will be corrected using the method agreed to in the Vermont true-up agreement.
- Mr. Dunn believes flows are normally from Lyndonville to GMP. Mr. Omand stated that losses were never charged to GMP and credited to Lyndonville when power flowed from Lyndonville to GMP.
- Mr. Mason stated that over a two-year period, since 2010, the costs were about $100 per month or about $2,800 to transport 2MW from GMP to Lyndonville, which should be reconciled to better understand the true losses. This is a much lower fee than the tariff rate charged to Lyndonville prior to the new substation being commissioned. Mr. Omand responded that since the commissioning of the VELCO Lyndonville substation, power primarily flows from Lyndonville to GMP resulting in a significantly lower overall loss value paid by GMP to Lyndonville. VELCO has the flow data but no study has been performed to determine what a more current percentage would be. Mr. Omand stated VELCO would be willing to look into the analysis if requested.
- Mr. Mason requested that VELCO pull together the historical data. Mr. Omand agreed to review the data and report back to the OC with the findings. Mr. Renaud added that he would work with Mr. Omand on pulling together the data that is available at VELCO to get a good determination the losses on the line.

Telecommunications

- **Fiber Project update**
    - Mr. Stamp and Mr. Loucy reviewed the Fiber Project update materials provided to the OC.
    - Mr. Couture asked if VELCO could distribute a recommended equipment list for DUs consideration to be better prepared to handle fiber that has become dislodged from its infrastructure. Mr. Loucy responded that a recommended list is provided within the Emergency Fiber Management presentation and he will extract the list and distribute to the OC members.
    - Mr. Dunn asked if VELCO has received make-ready schedules from affected DUs. Mr. Stamp responded that VELCO continues to work with the DUs to develop schedules both for providing the make-ready estimates and completing the work.
    - Mr. Mason asked why Hardwick Electric (Hardwick) chose not to participate in the network access agreement. The cost-benefit analyses showed, Mr. Loucy responded, that Hardwick would not realize benefits until they deploy AMI or otherwise could replace leased lines.

- Mr. Mason asked whether any municipal utility has deployed any VELCO electronics. Mr. Loucy responded in the negative because VELCO and the DUs are still developing an understanding of each DU's system and operations to evaluate benefits and generate business models. Mr. Loucy expects this preliminary work to be complete within a few weeks.
- Mr. Dunn asked how much of the 2013 fiber build is controlled by VELCO. Mr. Stamp responded that VELCO will be responsible for all of the work and utilize a combination of DU and other external resources to complete both the make-ready and fiber installation scopes of work.

- **Statewide Radio Project (SRP) update**
  - Mr. Nelson presented the SRP materials provided to the OC.
  - Mr. Dunn asked whether any real time hurdles have arisen during the testing phase and whether we had to recover from any outages. Mr. Wright responded that to date the VELCO response has been satisfactory. Mr. Nelson stated that VELCO dispatches through an automatic notification system and the DUs can also access the system information. The only challenge thus far identified is that the notification system is sophisticated and requires some familiarization time. Mr. Nelson further explained that VELCO plans to implement a more graphical presentation of the information to improve the users' experience.
  - Mr. Mason asked if a utility can buy several hand-held radios versus using vehicle installed radios as a backup system to Lyndonville's existing radio system. Mr. Nelson responded that the hand-held radios would work but being of less power they would not achieve the same coverage as the higher powered, vehicle-installed radios.

Substation condition assessment project

- Mr. Dunn discussed the materials presented to the OC.
- Mr. Wright asked who is completing the evaluations. Mr. Dunn responded that a significant portion of the assessments are being conducted by VELCO employees with some minor need to use consultant services.
- Mr. Couture asked whether any of the investigations have identified NERC compliance issues. Mr. Dunn responded that none have been identified to date but he could foresee the potential for a bus to need replacement.
- Mr. Mason asked whether the affected DUs will be apprised if substations are found that need upgrades. Mr. Dunn responded that the affected DUs would be notified of the findings and the tariff will govern how the costs would be treated, as common or specific facilities.
- Mr. Wright expressed the idea that VELCO should strongly look as using a consultant for the assessments. Mr. Dunn responded that VELCO plans to use engineering consulting services as needed. Mr. Renaud stated VELCO is creating criteria to provide for a common assessment perspective.Mr. Dutton asked if any of the DUs are conducting similar assessments of older substations. Mr. Wright stated VEC completed a substation assessment in 2008 and recently conducted a pole assessment program. Mr. Couture said that GMP North currently uses a third-party for pole assessments but has not embarked on a substation assessment to date.

Line losses between Lyndonville and St. Johnsbury follow up

- This item was covered within Power Accounting presentation, see above.

Circuit restoration philosophies

- Mr. Haas discussed the materials presented to the OC.

- Mr. Dunn asked if VELCO is required to monitor compliance with ANSI/IEEE 519. Mr. Haas responded that VELCO does have harmonic monitoring capability; however, we normally analyze harmonics only in response to a customer complaint. When a customer reports power issues at his or her facility VELCO will initiate a more in-depth review of potential harmonics problems within the electrical system.
- Mr. Mason asked what determines if VELCO uses one or two attempts for automatic reclosing. Mr. Haas responded that VELCO uses one-shot reclosing given the looped circuit design of the transmission system, public safety concerns, further equipment damage, and other factors.
- Mr. Dunn asked Mr. Haas to provide an example of potential equipment damage resulting from multiple attempts to reclose a line. Mr. Haas responded that the cumulative effect of high transformer through-fault events from reclosing attempts can cause internal transformer damage. Fault currents can cause transformer winding movements, especially on older units, that over time create an internal fault.
- Mr. Couture mentioned GMP is bringing back fault indicator data to help better isolate fault locations and was wondering if VELCO employs this technology. Mr. Haas responded that VELCO doesn't automatically receive fault data from protective relay devices within the substations, and the VELCO operators rely on contacting Engineering to remotely interrogate the relay devices.
- Mr. Dunn asked if bringing back field data to the operators in real time is a concern in regard to the CIP requirements. Mr. Haas responded that VELCO will transmit this data via SCADA, which is a secure communication medium.

Other business

Proposal to create a Transmission Subcommittee

- Ms. Frankel discussed a proposal resulting from discussions at the Vermont System Planning Committee (VSPC) to create a Transmission Subcommittee of the VELCO OC to provide a forum to discuss transmission solutions early in the review process. VSPC's structure included a Transmission Subcommittee, which was envisioned to consider transmission alternatives. The Transmission Subcommittee met very few times over the first five years of the VSPC's existence, and the VSPC Ad Hoc Process Reform Group, which has been looking at ways to increase efficiency and effectiveness, recently recommended eliminating the Transmission Subcommittee.
- During the consideration of the proposal to eliminate the Transmission Subcommittee, some VSPC members expressed concern that the overall planning process, beyond just the VSPC, is lacking a place where engineers can talk about detailed technical issues like bus configuration and transformer sizing.
- Conversation has taken place since the last VSPC meeting about potentially creating a Transmission Subcommittee of the VELCO OC as a place to have these more in-depth conversations about transmission solutions. As a straw man, here are some additional details:
    - Model would be similar to the Telecommunication Subcommittee of the OC, i.e., it would involve the relevant experts (engineers & planners), and would report to the Op Com.
    - Meeting twice a year or otherwise as needed.
    - Convened early enough in the planning process to provide meaningful input by utilities that may be participating in the cost but not be the primary parties.
- The next VSPC meeting is in mid-March. A decision by the OC regarding the concept of creating a Transmission Subcommittee would be helpful by then, but is not critical decision should the OC require additional time to consider the proposal.
- Mr. Nolan discussed his concern that VELCO and the lead DU tend to make design decisions about transmission solutions without significant input from the other affected DUs. Having a vehicle for the technical experts to understand the analyses before final solutions are indentified would be beneficial.

- Ms. Frankel discussed the need for transparency of the VSPC process and the effort to ensure effective communication with all stakeholders without excessive need to protect Critical Energy Infrastructure Information. Having the in-depth, technical conversation in the OC forum may provide the appropriate balance. Mr. Wright and Mr. Couture agreed that there is a need to identify and understand the analyses of the transmission alternatives earlier in the process.
- Ms. Frankel explained the initial thoughts are for the engineering reviews to be vetted earlier in the process and once a solution is identified briefing would be provided to the the VSPC as required quarterly.
- Mr. Renuad suggested that the project charters used by VELCO could include the milestones at which the analyses could be brought before a Transmission Subcommittee.
- Mr. Dunn expressed that he supported the concept of creating a Transmission Subcommittee of the VELCO OC.
- Mr. Mason asked if the Transmission Subcommittee proceedings could be used as evidence in any Board hearing. Ms. Frankel responded that the Transmission Subcommittee proceeding would not be a substitute for the normal VSPC process, which is primarily focused on the non-transmission alternatives screening and analysis. Mr. Nolan expressed this Transmission Subcommittee should be focused on the detailed engineering and costs so that these are vetted and better understood prior to going to the VSPC or OC.
- Mr. Dunn summarized that the OC's next steps are to work on a charter for a Transmission Subcommittee to be brought to the March OC meeting.

NPCC reporting on Hurricane Sandy update

- Mr. Haas discussed that the report was develop with support from the Vermont DUs and submitted last Friday 2/15 to the NPCC.
- Mr. Haas commented that this report pointed out the value meteorologist Roger Hill provides the VT utilities with his weather forecasting and utility support.

K21 project update

Mr. Dunn said that VELCO has completed its review of performing the work on the K41 line in an energized state and has determined that it can complete this work energized.

GMP head-end equipment and out-of-scope substations

- Mr. Stamp stated that VELCO has recently received the GMP South proposed head-end equipment costs to support the fiber electronics deployed in GMP South's system. Mr. Stamp agreed to move forward with developing project cost impacts and project rationale to take before the VELCO Challenge Board for review.
- Mr. Couture expressed that it would be beneficial to the DUs if VELCO could decide whether it will be able to support future requests to install fiber and electronics at additional subtransmission substations. Mr. Wright asked if VELCO would look at these requests in the same manner as any other general plant request. Mr. Dunn responded that VELCO would look at all requests to determine whether the work supports bulk transmission reliability. Mr. Dutton agreed the requests be evaluated and decided following the normal business process.
- Mr. Couture asked if VELCO could support non-substation device communication needs, such as operationally important line switches. Mr. Wright offered that connectivity to these devices would also likely benefit VELCO. Mr. Nelson responded that providing the fiber would likely benefit VELCO from operational recovery needs but that the actual data and electronics would more likely benefit the participating DU and therefore may not be consistent for VELCO ownership.

Proposed agenda topics

- Lyndonville GMP line historical line losses
- Notification of outages, recovery of SRP – how does it work
- VELCO policy governing completing work energized to minimize outage impacts

Adjournment

- Mr. Mason moved and Mr. Couture seconded adjournment, which was agreed to without objection. The meeting adjourned at approximately 2:55 pm.