

VSPC Generation Constraint Meeting

September 11, 2019 | 1:30 pm – 4:00 pm | Green Mountain Power Montpelier Office

Participants: Hantz Pr sum  (VELCO), Eric Harrold (VELCO), Dave Westman (EVT), Jay Pilliod (EVT), Jeff Forward (commercial rep), Bill Powell (WEC), Steve Litkovitz (GMP), TJ Poor (DPS), Steve Fitzhugh (NED), Kim Jones (GMP), Ed McNamara (DPS), Dan Kopin (Utility Services), Shana Louiselle (VELCO), Lou Cecere (VELCO)

By phone: Derek Moretz (Encore Renewables), Craig Ferreira (GMP)

Meeting Minutes:

Steve Litkovitz moved to approve the July 3, 2019 minutes, and Steve Fitzhugh seconded. The minutes were approved without objection.

The subcommittee discussed the definitions of a “generation constraint” and a “near generation constraint”:

- Consideration for defining “near generation constraint” with respect to percentage loading of limiting equipment
- Concern around having multiple definitions
- General consensus that there should be one, binary definition (“constrained” or “not constrained”)
- Confirmation that the draft definition encompasses two different conditions: 1.) Generators are curtailed 2.) No more generation can be connected
- Discussion of possible distinctions between curtailment by the distribution utility on distribution-connected generators, and curtailment by ISO-NE of transmission-connected generators
- GMP includes a small amount of load in calculation of potential loading on transformer due to backfeed from solar, but a lower amount than historical minimum load (if load goes away, e.g. industrial customer goes out of business, a higher loading on equipment than expected could result)
- Definition of a generation constraint agreed upon as a condition under which dispatchable generators are subject to curtailments, or new generators and other devices that export power to the grid cannot be connected without violating system operational criteria that includes not adversely impacting safety, power quality, or reliability.

The subcommittee reviewed a proposed work plan, addressing such issues as data collection, technical analysis of the data, qualitative analysis of the measures under consideration, and drafting conclusions:

- Agreement on working through the quantitative process for Vergennes as an example of the process, and using the results to inform qualitative conclusions
- Concerns around gathering load shapes for all measures listed in work plan
- May be possible to estimate load shapes where actual data is not available
- Concerns that performing time series power flow would require access to new software, large amounts of data, and large amounts of work
- Consideration of using Tableau to ingest and evaluate time series data
- Could evaluate only representative hours; not possible to consider side effects (in the trailing hours) of having used measures in the hour of concern
- General consensus to start with a full 8760 hour time series, and then narrow down to a few

stressed days if necessary

The group also discussed needs and wishes around data collection:

- Hourly PV output (behind the meter units can be estimated based on nearby metered units' output)
- Hourly energy storage output/consumption (should be possible to obtain actual data for Powerwalls)
- Hourly heat pump consumption (will have to be estimated)
- Hourly EV charging consumption (should be possible to obtain actual data for EVs in GMP charging program)
- Noted that GMP Vergennes substation feeds Vergennes as well as parts of: Starksboro, Monkton, Ferrisburgh, New Haven, Panton, and Addison
- With list of account numbers, EVT can retrieve incentive information for heat pumps installed on distribution feeders connected to the Vergennes substation
- Discussion around gap between CPG-approved PV installation and actual installed capacity
- Will need to start accounting for items listed in second section of provided data list in order to address potential constraints at other substations

GMP presented information on EV charging and Powerwall behavior during a recent peak event:

- Load for EVs brought to near-zero for a full two hours during peak event, with large increase in consumption immediately afterwards
- 350-400 EVs were connected and remained in the program during the event
- Charger locations are not currently broken up by substation, but should be possible to do so
- Powerwalls injected about 9 MW during the peak event, and began recharging hours later
- Recharging takes place based on a Tesla algorithm designed to not create another peak
- EV and Powerwall behavior could be targeted towards other periods than expected peak events

Next steps:

- VELCO to coordinate data collection call
- GMP to provide EVT with list of anonymized account numbers served from Vergennes substation
- GMP to provide data by mid- to late October
- Subcommittee to meet in early to mid-November (begin with EVT's Demand Resource Plan presentation)
- DPS to lead in assessing capabilities and qualities of measures