

MA TSRG July 27, 2016
National Grid HQ, Waltham, MA

Roll call

Babak Enayati, Ngrid
Mike Conway, Borrego Solar
Mike Brigandi, Eversource
Brian Ritzinger, DPU
Nancy Stevens, DPU
Tim Roughan, Ngrid
Mike Porcaro, Ngrid
Jeannie Piekarz, Ngrid
Reid Sprite, SourceOne
Paul Krell, Unitil
John Bonazoli, Unitil
Chris Riffle, Unitil
Carter Wilding White, CEC
Bob Andrew, Eversource
Fran Cumming, Peregrine Energy Group
Richard Gross, State/DOER
Kathleen Livelli, Safari Energy
Doug Cartin, CEC
Cindy Janke, Eversource (conf call)

1. Intro and Remarks

2. 1547 updates

- Full revision to enable grid functionalities - voltage regulation, ridethrough, etc
- 2003 says generator shall not do anything to the grid, .a allows regulation and ridethrough but presents no settings
- Review of Power Quality draft
 - Rapid voltage fluctuation, 1 second time scale
 - Based on IEEE 519 (harmonics and voltage variation)
 - Will be difficult to capture during system impact study process, because it requires a more detailed analysis than a typical SIS voltage evaluation
 - Flicker, longer than 1 second scale
 - Based on IEEE 1453-2015
 - New Plt and Pst values may be used as a benchmark that replace the GE borderline of visibility/irritability curve
 - The Plt and Pst values inform a voltage window that is very close - maybe negligible - to the voltage window resulting from the GE curve
 - To be used as an operational guideline, not something that will be tested on commissioning day.
- Overvoltage contribution
 - Captures effective grounding requirements - limits SLG overvoltage on unfaulted phases to 138%

- Also captures phase rotation and neutral shift - limits over LL overvoltages to 138%
- Transient and temporary overvoltage
 - 2x nominal for 1.6ms, 1.7x for 3ms,
 - Can be caused by load rejection, can be caused by transformer inrush, grounding situation on the feeder
 - Again - more of a performance based metric, not something you could test on commissioning day.
- Voltage regulation
 - PCC vs DER terminal
 - Need to regulate at PCC if a) aggregate DER 500kW+, AND
 - Has an average load demand of less than 10% of the DER nameplate (IPP)
 - If you're an IPP > 500kW, the regulation standard applies at the PCC, if else, it's applied at the DER terminals
 - Lead/lag var capabilities - at 100% capacity, inverter-based generators must be able to produce 44% of their nameplate capacity in VARs (lead/lag)
 - Reviewed four voltage regulation methodologies
- First ballot voting later this year, then comments
- Spring 2017 target for new IEEE1547 going live

3. Break

4. Eversource PCC recloser standard (500kW vs 1MW)

- WMECO had a 500kW standard and Eversource mostly adopted it for consistency's sake
- Standard is open to review by an Eversource internal group looking at policy
- What value does the recloser provide that can't be provided by a simpler protection device (fuses, load break, etc).
 - Enables additional operational flexibility if there are N-1 contingencies.
- **Unitil moving to 500kW for SCADA though not necessarily a recloser**
 - **SCADA meter that integrates with SCADA, uses the same instrument transformer cluster**
- **Eversource East and West going with 500kW (IPP or /of export) PCC recloser**

5. Common Guideline review

- Should this group be going back through the non-common items in the guideline and trying to come to consensus on some of the items in the guideline.

Break

6. National Grid Solar Phase II update

- Testing the impacts of smart inverter functions on the local EPS
- No utilities currently allow smart functions like voltage regulation due to concerns about desensitizing islanding detection, hunting with existing regulators, etc
- Energy storage system being installed to pilot grid support functions, integration with building management system, among other functions

- Ngrid expects to file a report at the end of the functional testing period which makes a recommendation on whether or not to allow active voltage control in the near term, and if so, under what conditions
 - Functional testing to take place early next year 2017 - some preliminary functional testing taking place now
7. **2017 leadership team discussion - Eversource representation given NSTAR/WMECO merger.**
Update to the bylaw.
- DPU - NSTAR and WMECO still showing significant differences in DPU's experience. It's probably a little too earlier for this. Eversource estimating 2 years until they have common policies and procedures.
 - Bylaw specifies "four utilities in MA.." etc etc - should this be amended?
 - WMECO has historically operated under the Connecticut DG standards. The tightest alignment is there - but will take time to get NSTAR into alignment.
 - DOER representative
8. **Review of utility intx requirements that have been discussed but are not clear to DG reps**
- Common Guideline section 4.0

Can Unutil and Ngrid adopt the Eversource language in section 4.0, to unify this part of the common guideline

Ngrid now using 75% inverter make-up for 2nd Sandia screen (% of inverters of the same manufacturer on the feeder).

Can Unutil and Eversource work to adopt a common language with Ngrid? Section 3.0.

9. Next steps
- **DPU - Discussion of bylaw to go on next agenda. Everyone to review for next meeting.**
 - **Babak to share latest copy of the bylaw**
 - **Invite Mike Ropp to speak next meeting regarding anti-islanding screening**
 - **For next meeting, review NREL multi-inverter July 2016 paper**
 - **GridEdge eval for next meeting's agenda**