

Massachusetts Technical Standards Review Group (MTSRG)

Chair: Babak Enayati, National Grid

Vice-Chair: Michael Conway, Borrego Solar Systems

MTSRG Regular Meeting

Date: March 17, 2016

Time: 9AM-3:30PM

Location: Eversource

157 Cordaville Rd

Southborough, MA

Babak Enayati - National Grid

Jeannie Piekarz – National Grid

Pat Retelle - Borrego Solar

Mike Brigandi - Eversource East

Reid Sprite - SourceOne Veolia

Mike Porcaro - NGrid

Paul Krell – Unitil

Tim Roughan - NGrid

Cindy Janke - Eversource West

Richard Gross - DOER

Gerry Bingham - DOER

Liana Moore – Ngrid counsel

Nancy Stevens - DPU

Brian Ritzinger - DPU

Ghebe Daniel - DPU

1. Meeting kickoff
 - a. Mike Coddington can no longer participate in person. Babak is going to explore Mike participating by phone
2. 3V0
 - a. Pat Retelle of Borrego presented proposals to model negative sequence sensing as an alternative to 3V0.
 - b. Utility first concern is fundamental concept confirming the theory behind using negative sequence sensing would work.
 - i. For example, if grid tripped off line, prove that negative sequence components would actually exist
 - ii. Is there enough of an imbalance on the low side to recognize a ground fault
 - c. Utility requested Borrego provide a sequence model for the condition
 - d. Multiple inverter vendors
 - i. Confirm transient characteristics
 - e. What about synchronous generation on the line
 - f. How to model loads during the transient state that could impact the results (e.g. rotating machines)
3. DPU-11-75-F Higher Penetration
 - a. Overall takeaway was the docket for this effort was closed, but the true intent was to confirm if the 15% of peak load is the right value for screening for minimum load was unable to be accomplished with this docket.
 - b. Challenge for utilities is there is they do not have enough advanced metered substations to measure real time minimum load
 - c. Other obstacles utilizes mentioned were:
 - i. struggling with aggregate of loads that have net-metered DG

- ii. Changes in load due to energy efficiency improvements
- iii. Potential for high number of electrical vehicles
- d. It was thought that the upcoming hosting capacities study may be able to incorporate some of these advanced metering approaches

4. IEEE 1547 Updates

- a. Jens Boemer (EPRI)
 - i. 3 Categories (I-III) for ride thru 2 Categories (A-any DER,B-advanced control) for regulation
- b. Ridethrough
 - i. Intended to be agnostic between power electronics and rotating machines
 - ii. Has to comply with requirements at PCC
 - iii. Internal timeline completes October 2016
 - iv. Final draft at working group meeting in Fall/Winter 2016
 - v. 1 year balloting assumption
 - vi. Could take 1-2 years of adoption by AHJs
- c. Power Quality
 - i. DER shall not create objectionable flicker for other customers on the area EPS
 - ii. Flicker test exists and will take place over ~1 week of interconnection
 - iii. 0.5 * harmonic order is acceptable for even harmonics
- d. Ride-through
 - i. References NERC PRC-024, CA Rule 21 and Hawaii for the Proposed Ridethrough requirements

5. NGrid RFP II Status

- a. Goal: gain knowledge of advanced DER to confirm what utilities need to be aware of for future advanced DER systems
- b. Summary of deliverables
- c. Coordination of sites

6. Energy Storage

- a. Sky Stanfield CA Experience
- b. Storage durations:
 - i. Milliseconds to seconds
 - ii. Minutes to hours
 - iii. Hours to days
- c. Economic Effects:
 - i. Rates management
 - ii. Capacity Firming
 - iii. Ancillary Services
 - iv. Backup Power
 - v. Energy Time Shift
- d. Near Term Regulatory restrictions
 - i. Design rate structure
 - ii. Open up markets for ancillary services
 - iii. Ensure DES system has clear path to fair and efficient interconnection
 - iv. Address net energy metering
 - v. Consider DES solution in context of broad distribution
 - vi. Ensure sufficient but duplicative safety
- e. Total deployment 221MW up 243% from 65MW
- f. Utility scale cost 2014 \$800-\$1300/kWh. In 2015 \$700-\$1200/kWh
- g. Lithium Ion most prevalent technology
- h. 3rd Wave: Dropping cost of smaller batteries (project a fall of 20-30% of lithium ion cost)
- i. States
 - i. Demonstrating interest in storage

- ii. Stimulate the storage market
 - iii. Include storage in planning
 - j. Decision 13-10-040 CA Energy Storage Mandate
 - i. 1325MW, No more than ½ owned by utility
 - ii. 3 classes: transmission, distribution, customer sited
 - iii. Must achieve grid optimization, renewable integration or GHG reduction
 - k. Interconnections
 - i. FERC SGIP: added definition of energy storage
 - ii. Is it load or generation? Costs attributable to loads on a load/generation system will be applied first before going to rule 21.
 - 1. MA utilities believed all battery storage would fall under generation
 - iii. CA Approach
 - 1. Non Grid Charging: notice to utility
 - 2. Peak shaving: Load review conducted. Same as Fast Track
 - 3. Unrestricted charging: Load review, 60 business days for larger, more complex systems.
 - iv. Streamlining: Create interconnection guide, modified app and agreement for charging behavior, process for making changes to the “inadvertent export” rules for advanced inverter functionality
 - v. PJM: Battery must proceed through PJM interconnection process for non-demand response resources
 - vi. Modular Energy Storage Architecture (MESA) to accelerate interoperability
7. Review and Approval of Common Guidelines
- a. Group began reviewing common guidelines, but due to volume of technical discussions, it was decided for each utility to add comments to the Common Guidelines draft in mid-April
 - b. Eversource East and West are collaborating on consolidating some common practices
 - c. Website Links
 - i. Unitil is modifying website, so there is no link for the Unitil technical specs
 - d. Anti-Islanding
 - i. NGrid is confirming origin >20% aggregate rotating machine and PV in parallel to self excite due VAR source
 - ii. Eversource East is exploring using an external consultant to perform a dedicated islanding study if deemed necessary
 - iii. Eversource West uses DG (PV and rotating machines) <33% min load and DG (PV only) < 50% day time minimum load. If DG doesn't pass screen, DTT required. Reid expressed concern that DTT was required without an islanding study. Borrego agrees.
 - iv. All utilities felt means of anti-islanding mitigation should not be a bullet.
 - 1. DG companies would request that the most cost effective communication solution that meets requirements be offered
 - v. Regarding communications methods for RTUs and DTTs, the group was concerned on LAN line being feasible in future due to upfront logistical challenges and on-going monthly fees being cost prohibitive.

Next meeting June 22nd 2016 9am to 3pm
 Add security contact if at Southborough
 Southborough option 1
 Worcester option 2