Massachusetts Technical Standards Review Group (TSRG)
Meeting Minutes
Date: September 13, 2018

Attendance:

In Room:

- John Bonazoli
- Mike Brigandi
- Mrinmayee Gujar
- Jeannie Amber
- Tony Morreale
- Paul Krell
- Brett Jacobson
- Will Spencer
- Adam Houghton
- Michael Wall
- Devon Marcaurele
- Babak Enayati
- Nancy Israel
- Mike Porcaro
- Cindy Janke
- Tim Roughan
- David Ghebre
- Nancy Stevens
- Gerry Bingham
- Nachum Sadan
- Brian Ritzinger
- Will Lauwers

On Phone

- Keith Jones
- Moody Demerty
- Neil Lebrake
- Bryan Lydic
- Mike Coddington

Nancy Stevens Announcement on ADR Process Change

- Announced a Dispute resolution Process change
- The New hearing officer is Kate Tohmey
- The intent of the new process is to visit the following website and begin dispute resolution process digitally as opposed to calling or emailing Nancy directly.
    - . https://www.mass.gov/how-to/start-the-dispute-resolution-process-with-the-dpu
- Hearing officer will make determination as to whether there is a tariff issue and respond accordingly
- This process is also appropriate for inquiries as opposed to formal ADR activation.

TSRG Membership

- **Eversource Membership West** – Cindy will be the official member until they can find another from WMECO
- **Eversource East** – Moody Demetry, Backup will be Shakir Iqbal

IEEE 1547 Update (Presentation will be posted to TSRG website)

- Published April 6th
- MA is ahead of the curve with Ride-through adoption
- Minimum Reactive Power Injection and Absorption Capability
- New Standard mandates Voltage regulation capability However default is Unity Power Factor
- There are potential issues with loss of Revenue if Vars function is set as a priority over Watts
- Can be seen in Table 7 of the standard
- There are several 'modes' of operation that shall be required for different inverter categories
- Constant Power Factor mode
- Volt/Var – Gen reactive power varies dynamically depending on voltage (over/under). There is also a dead band that necessitates no Var contribution or absorption
    - Mike Brigandi made comment that IL Smart inverter Tariff is an example of where mandatory Var requirements are getting strong pushback by the development community
    - Mike B also made a comment with regard to setting expectations for discussions on Volt/Var
        - There is potential Impact to Compensation
        - Impact to Real Power Production
        - It is likely that the Technical discussions will have policy implications but there is currently no policy discussion outlet similar to TSRG where this can easily be addressed.
- Watt/VAR
- Constant Reactive Power Capability
- Volt-Watt - Voltage Active Power Capability
    - Q priority
    - P Priority

- DERMs will have the capability to control diversified Smart Inverters remotely and holistically
- Questions regarding 1547
    - Impact to System protection screens
    - Anti-Islanding Screens
    - System DER hosting capacity
    - Modeling and advanced DER. Lack of modeling Tools
        - It seems as though load flow modeling will progress in the next year but there is no protection models on the horizon to be able to properly model Smart inverter functionality
- Power Quality
    - Flicker Limits
    - Methodology for measuring Flicker
    - Tim Roughan questioned as to whether Flicker was even still an issue today with more modern lighting
    - Babak responded that clouds will likely not cause objectionable flicker but more so Volt/Var improperly applied can cause flicker
    - Paul Krell stated the meaning of Flicker has evolved over time
- Harmonics
    - New Power Quality requirements in limitation of current distortion as related to the different orders of Harmonics.
- Limitation on one fundamental Frequency period
    - This capability would be captured under the UL 1741 listing once the 1547.1 standard is published
- If others would like to be included in IEEE 1547 Subcommittee, please notify Babak Enayati or John Bonazoli and they will be added to membership list

Initial Review Deliverables

- Unitil Presented their template for Initial review
- Cindy Janke confirmed that the Information WMECO sends is the same as what Unitil Presented at last meeting except it is presented in an email and the fault current is done with a simple hand calculation as opposed to any type of software
- Mike B commented on the fact the Utilities are not currently meeting the tariff obligation to provide fault current at PCC.
    - There was a discussion and utilities stated they are not able to provide accurate information without modeling the system, which is done as part of the impact study.
    - Questions were asked what this information is needed for at this time. At earlier meetings Borrego stated it was not necessary
- Eversource East still needs to provide specifically what they have standardized on for initial review deliverables
- There is a willingness from ES East to provide the same information as NG and Unitil
- Cindy stated she will get ES East initial review criteria in the next week.

IREC presentation on involvement in standardization

- Presentation attached

- Brian Lydic presented on the ability to apply a plant level controller at the common connection point of the PV and Storage that can be used for export limitation
- Existing Inadvertent Export Rules
  - UL 1741 non-islanding
  - Size limit (Necessary)?
  - Max inadvertent Export energy/Period (Needed with certification)?
  - Failsafe
  - 30 sec time limit
- Jeannie asked if the testing requirements Brian was speaking to had to withstand 'utility grade' requirements C 37.90

Max Export Requirements:

- Jeannie presentation on Grid Requirements for Max Export.
- Showed an example of where 5 MW PV and 3 MW Storage customer proposed using a max export limiting to 5 MW. The requirements for this case included:
- Usage of highest accuracy CT's and PT's to minimize error margin in calculations for load flow considerations and max export level.
- Power flow considerations looked at on the order of seconds
- Failsafe required for trip on loss of power
- Loss of communication between devices requires trip of facility or storage only
- ISO studies, islanding screens, fault current, and protection all will still need to be done w/regard the full nameplate

Energy Storage Update:

- Will Lauwers presented on the update of the Energy Storage subcommittee
- There are two subcommittee leads. Will Lauwers for DOER procedural issues, and Mike Porcaro for technical concerns.
- The subcommittee has been having a conference call every other week.
- The subcommittee has agreed on the information that will be requested for energy storage applications. This includes information required for technical analysis as well as the Annual filing that is required of the distribution companies to report to the MA DOER.
- John Bonazoli said if anyone wants to join the Energy Storage Subcommittee to let him know and they would be added to the list.

National Grid PV Update (Presentation will be posted to TSRG website)

- National Grid presented updates on their PV facilities.
- 18 "Phase 2" facilities have been interconnected.
- 6 of 7 "Phase 3" facilities are in study and 1 is interconnected.
- National Grid performed Arc Flash analysis on the DC side of the inverters. Per their normal assumptions in the analysis, Arc Flash on the DC, did not add any additional concern for National Grid workers.