

Roll Call

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Mike Conway, Borrego Solar
Mike Brigandi, Eversource
Jason Small, Ngrid NES
Justin Woodard, Ngrid NES
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Mike Porcaro, Ngrid
Vinny O Connell (sp?), Eversource
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Chris Riffle, Unitil
John Bonazoli, Unitil
Paul Krell, Unitil
Liana Moore, NGrid
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Tim Roughan, NGrid
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Carter Wilding White, CEC
Richard Gross, DOER rep
Ghebre Daniel, DPU
Brian Ritzinger, DPU
Nancy Stevens, DPU
Will Lauwers, DOER Emerging Tech
Gerry Bingham, DOER

Intro

IEEE 1547 update

Timeline

- IEEE 1547 and IEEE 1547.1
- 12/2/16 is due date for all subgroups to submit final drafts of their work product
- Local meeting at Ngrid upcoming, May-June 2017
- Targeting July-Aug 2017

- Babak presentation of final Power Quality draft

- Reid - How do the new 1547 regs on flicker impact the way we model flicker now? Utilities will continue using Cym modeling for the foreseeable future
- **Mike B - Keith Jones working on updated flicker standards for Eversource. Date for this?**

- Total Harmonic Distortion (THD) changed to Total Rated Distortion (TRD)

- Inverters will now come with additional VA capability, such that VA nameplates will be 1.1 on 1.0 W basis.

- Utilities will use VA for most analysis, protection, power flow, etc - using worst case principles.

Storage Interconnection

- What is the appropriate vehicle to notify the utility that a storage system is coming and to review interconnection?
 - Interconnection tariff appropriate mechanism at this time. If it can be run in parallel with the EPS, it should be submitted with an interconnection application. Much like CHP. Even for non-export.
 - If storage is only utilized for backup power, does it need to apply with intx? Similar to emergency power at a hospital.
 - Emergency generators don't currently go through the intx process. Those systems have a physical interlock and auto-transfer switch. How does utility know? DOER encourages applicants to notify utility.
 - Stand-alone storage used for peak-shaving? If it's going to run in parallel, yes it needs to go through the intx process.
- How do you define net gen or net output when the utility is doing a review?
 - FERC in SGIP addressed this
 - CA is allowing developers to define the behavior of the storage. Storage is not going to charge in an economically negative way.
 - No language about certifying controls, witness testing the controls or anything operationally specific
 - Eversource East. If developers define it as a non-export system, the utility may require a reverse power relay or minimum import scheme
 - Until - Proof of settings may be required
 - Ngrid - Broadly, utilities are open to analyzing use cases instead of max power, but it will depend on the exact application. Also, because use cases may change worst case analysis may be necessary.
 - Ngrid, operating scheme becomes very important if the DER is being used for freq regulation for example vs peak shifting
 - S1 - this is why the ISA exists - to protect against the customer changing its operating characteristics. Customer would be in violation of the ISA.
 - Ngrid legal – supported NGRID's worst case scenario analysis. can put restrictive operating conditions in ISA to limit operating characteristics as stakeholders suggest but doesn't recommend because enforcement requires oversight and with the volume of ISAs we have would be hard to track.
- Is storage treated as both a load and generation asset?
 - A separate set of system planning rules review new load. How will those be reconciled?
 - Cost allocation - In CA - combined the load and generation review processes, but rules about cost allocation will default to whichever necessitated the upgrade. If the load drives the upgrade, it follows load rules, if because of gen, it follows gen. If it's both, they first allow the load rules, and then the generation.

- Until - same group, looks at both load and gen system plan. Goes through the rate of return case to determine cost allocation
- S1 - net impact may be moot.
- Eversource has different groups, new service and DG group. So an applicant would end up working with both groups. Unless there was significant revenue from their usage, costs would probably be incurred for itnx.
- Ngrid - New load customers have a different process, same department but different subset. Ngrid using the net zero stance so far.

- What does this mean for intx timeline, study timeline?
- Until - as efficient as possible, will parallel groups when possible
- Ngrid - will be application specific from site to site

- What level of review is required for non-export projects? e.g. storage that is performing demand charge reduction, but not pure generation
 - Expedited process for these systems?
 - Non-export doesn't necessarily mean you will pass all protection screens.
 - CA non export.
 - 1) Non grid charging. Get a notification to utility but minor review
 - 2) Peak shaving, don't increase peak load, get load review to impacts to primary conductor and substation xfmr
 - 3) Unrestricted charging, go through full load review (60 BD)

- Different treatment of standalone storage vs storage plus solar?
 - Eversource - A lot of work needs to be done by utilities to develop their policies on this
 - Ngrid - developing policies right now,
 - If customer can demonstrate that the battery is only being charged by the PV. Developer must provide control schemes and operating procedures and one-lines showing that not all discharge is concurrent with PV output
 - Eversource - what are the acceptable modes of operation for the utility - need to identify those

Unintentional Anti-Islanding Standards

- NY Joint Utilities and DPS undertook major info gathering and analysis over the past 12 months, more significantly over the past 4-5 months. EPRI, NREL, Utilities from around the country. Looked at personnel risk, equipment damage, etc.
- Resulted in narrowing the criteria for when DTT may be required based on a state-wide flowchart. Sandia screening,, if all of those fail, reclose blocking is required.
- DG industry reps of TSRG have been encourage islanding screening reform since 2013, with inconsistent adoption from the utilities
- Is customer redundant relaying still required? For over/under voltage, over/under frequency?

- Ngrid presentation of new MA Anti-Islanding requirements.
- Big takeaways
 - For certified DER, no DTT required. Using reclose blocking in worst cases.
 - Sandia Screening and detailed RoI studies used
 - No reclose blocking at main feeder breakers - only PCC and mainline reclosers
 - For non-certified DER, DTT required when DER > 33% min load
 - Utility grade minimum import relays may obviate DTT for non-certified DER (CHP for example)
 - Does not change redundant relaying requirements for certified DER > 500kW
 - DTT may be required for cases other than unintentional islanding (fault detection)
 - Flowchart to follow (similar to EPRI flowchart)
- Other than UL, other Nationally Recognized Testing Labs that test per the same specifications are accepted
- Ngrid hosted a workshop with national utilities, (CA), regulators, consultants, national labs, etc to do a comprehensive deep dive on Unintentional Islanding. That was the genesis of the new Ngrid NE policy and Ngrid NY policy.
- Eversource tech standards to be published, targeting next meeting for an update
- Anti islanding is coming up next for that Eversource subgroup - Mike B is chairing.

National Grid Solar Phase II Update

- Update from Justin Woodard

MA Energy Storage, DOER

- Will Lauwers presentation, State of Charge Report
- Majority of funding goes towards demonstration projects

EPRI Storage Value Estimate Tool

- EPRI Presentation by Haresh Kamath

TSRG By-laws

- Proposed revisions reviewed. Additional revisions made at meeting:
 - Proposed language on quarterly meetings deleted and replaced with "...meetings at a minimum semi-annually"
 - List out IOUS, National Grid, Unitil, Eversource East (formerly NSTAR), Eversource West (formerly WMECO)
- Members voted on bylaw change - unanimously approved

2016 Wrap Up, 2017 Agenda items

DPU - suggest to propose list of topics and then prioritize and/or pick a smaller subset of them

- Potentially break out to subgroups

- Wrap up summary
 - New Ngrid DTT standard
 - Eversource reduced PCC recloser threshold to 500kW
 - Smart Inverter demonstration at Ngrid Shirley site

- Looking ahead
 - Lessons from NY REV
 - DPU - renewed focus on alignment where possible between the JU's in MA
 - Start formulating policies for dealing with IEEE1547 - whether MA JU's will adopt it
 - Dedicate a meeting to formulating TSRG comments on the 1547 ballot draft

Membership

New Chair - Mike Brigandi, Eversource East

New Vice Chair - Reid Sprite, SourceOne, CHP rep

Ngrid - Mike Porcaro

Eversource West - Cindy Janke, Vinny as an alternate

Unitil - John Bonazoli

DG Rep - Mike Conway, Borrego Solar

Next Meeting Friday Feb 24, Worcester, 8am-2pm