

MA TSRG Meeting Minutes

Dec 13th 2018

Location: Columbia Gas - 4 Technology Drive, Suite 250, Westborough

Attendance:

Present at Meeting:

Ean Mulligan – Cypress Creek
Jeannie Amber – National Grid
Brett Jacobson - Eversource
Paul Krell – Until
Kavita Ravi– Blue Wave Solar
Michael Brigandi – Borrego Solar
Nancy Israel – National Grid
William Kern – National Grid
Michael Porcaro – National Grid
Ghebre Daniel – MA DPU
Nancy Stevens – MA DPU
Doug Denny-Brown – Next Grid Partners
Bill Srillinger – PV Squared
Gerry Bingham MA DOER
Damien Kozikowski - Eversource
Nachum Sedan – Grid Edge
Moody Demerty – Eversource
Michael Wall – Control Point
Adam Houghton – Control Point
Claude Colp – ECA Solar
Umair Zia – Eversource
Devon Marcanrele – Eversource
Weezie Naura – ISO-NE
Dave Forrest – ISO-NE

Present on Conference Line:

Other attendees were on the telephone, but the names were not recorded

- 3) Cost estimate detail 9:45 – 10:15
- 4) Break 10:15 – 10:30
- 5) SMART Program metering and disconnect requirements 10:30 – 11:30
- 6) High DG Penetration Issues 11:30 – 12:00
- 7) Lunch 12:00 – 1:00

- 8) ISO-NE Planning Requirements 1:00 – 1:30
- 9) IEEE 1547 Summary and subcommittee update 1:30 – 2:15
- 10) Energy Storage Subcommittee update 2:15 – 2:45
- 11) Topics for next year
 - a. Voltage fluctuation analysis
 - b. Protection schemes to trip generation behind meter to limit export

Pre Application and initial Review

- Mike Brigandi of Borrego presented Borrego’s concerns of reports received for the Pre-application process. The concerns were the accuracy of the report and the timeliness.
 - The presentation highlighted several instances of inaccurate data being provided by the utilities during pre-application reports.
 - During discussion it was reported that these reports were being compared to the DOER monthly report. The utilities explained that the DOER report presents only the applications in the Expedited and Standard process. The Pre-application report reports all applications.
 - Other possible sources of inaccuracies or inconsistencies were discussed as well. Eversource and Unitil include only applications that are deemed complete in the aggregate generation. National Grid includes all applications.
 - The presentation also stated a large majority of Borrego Pre-App requests has been delivered late by the utilities.
 - Eversource was the most significantly late at 96% and an average of 51 days as compared to the Tariff required 10 days
 - Mike B asked Brett what was causing the lateness of pre-apps and Brett replied that resources were the main issue
 - Brett also stated that the Eversource DG group is hiring 12 people to the front end of the DG team and 4 engineers
- There was a discussion of the scope of data included in the Pre-application report. There was no agreement to change any information that is specified in the tariff.
 - Ean Mulligan – the data that is provided at the pre-app would be better to be
 - Current saturation
 - Substation transformer capacity
 - Substation configuration
 - Fault current
 - Transformer banks
 - DG queue on sub on parallel feeders
 - The utilities stated if timeliness of the report is a concern, adding information to the report may only slow the process of generated the report.
 - John Bonazoli said the Pre-application report was agreed to include information that did not require an engineer’s involvement or any circuit modeling or analysis. Most of this

requested additional information requires some study but the distance to the substation may be possible for Unitil.

- Ean – seems that queued and existing DG would be able to be provided during Pre-app without additional study
 - This information is already being reported.
- Doug – said that you would put in a database what the config of all the substations are and have that handy for the engineers doing the
- Jeannie – some substations are BPS - we would have to take some care in providing substation data, as there are NERC Critical Infrastructure Protection (CIP) requirements for keeping certain substation from the public
- Mike Conway stated that having a working capacity map similar to other markets like NY would make Pre-app requests unnecessary
 - Ean Mulligan stated that developers would not pursue a project if they knew that area of the grid has high penetration. Knowing this would deter a group from submitting applications and vice versa which will save utility time and resources
 - John Bonazoli stated that the Energy Council of the Northeast (ECNE) DG committee is discussing concerns and usage of host capacity maps, in an attempt to generate consensus of what information should be included on maps. He offered to present the outcome of the discussion at the next TSRG meeting.
 - Conway stated that the NY capacity mapping is very good
 - Ean stated that the time utilities are spending on pre-apps can be better spend on developing hosting capacity maps.
 - Doug Denny stated that California is also a good example of a market with a high functioning capacity map
 - System wide hosting capacity studies vs hosting capacity maps were discussed
 - It was mentioned that there would need to be a geographic component to the capacity data as opposed to a per feeder study
 - Hosting capacity will be added to the 2019 agenda for TSRG

Cost Estimate discussion

- Mike Brigandi introduced this topic which was requested to be added to the TSRG Agenda by Brian Ritzinger at MA DPU technical session for Group Study process.
- The crux of the issue was that Eversource was providing a lump sum cost estimate, where National Grid and Unitil provided a breakdown of the required system modifications.
- Doug also shared examples of receiving different levels of cost granularity from National Grid vs Eversource
- Utilities met and National Grid and Until provide similar levels of cost granularity which seems to be acceptable by the developer community
- Brett stated that Eversource needs to do a detailed study before they can get to the level of granularity they shared in the Utility Group Study filing
- Brett is willing to share more granularity at the +/- 25% SIS cost estimate
- Mike Porcaro from National Grid is willing to meet with Eversource and explain how they are doing the estimates and Brett will see if he can provide the same detail

- Brett will determine if this can be provided at System Impact Study similar to National Grid and Until

Metering Under SMART

- John Bonazoli showed some National Grid diagrams of metering configurations for the DOER SMART program. Slides were indicated to be illustrative for discussion purpose and were not presenting a standard for SMART metering. Where the requirements are not yet finalized, they would not be shared
- The location of the SMART meter was discussed.
 - Mike Judge DOER – The SMART program is a replacement of the SREC program which meters the inverter output directly. The DOER has come to the conclusion that the meter should be placed right after the PV inverter in order to comply with SMART.
 - Therefore, in an AC coupled ESS+PV site metering at the PCC the facility is being compensated for what is delivered to the system; not what is being generated
 - In order to compensate what is being generated, you would need 3 meters – PV, Battery and PCC
 - Jed from National Grid – There are two versions of the metering dynamic and those are stand alone and behind the meter
 - 60kW is level that telemetry/Interval data is needed
 - Mike J indicated that the site should not be penalized for charging battery
 - Juliana – if you want the batter to bid into ISO markets it must be metered separately
 - Gordon from Eversource metering – if storage is not ISO asset then third meter is not needed
 - There was question as to what the PCC meter is intended for
- Mike Judge then initiated the discussion of DC coupled battery and storage. Some inverters have a second output port to supply emergency load. The issue is that the utility generation meter is only on one output but not on the load port so the whole PV output is not being measured.
- Juliana from ENGI stated they are working with a Metering manufacturer to have a DC meter ISO/ANSI standard compliant
- AC coupled storage was agreed upon largely agreed on by all stakeholders in the room, that it may require an additional meter to be installed.
- Ongoing discussions between DOER and the utility will continue at the weekly meetings for SMART program. The slides that were shows will not be able to be shared but will be updated when there is consensus with the DOER and the utilities.

High Penetration Issues

- Mike Porcaro gave presentation regarding issues due to high penetration of DG
 - Many sub station Transformers are already at max standard size
 - Leading to need to build new subs for DG specifically
 - Reconductoring T-Lines
 - Central and Western MA
 - Palmer to Belchertown to Gardner to Lester
 - 520 MW proposed for this area

- Several Substation will need to be upgraded or built
 - Average 3.5-4 MW per project
 - Typical solutions are no longer valid
 - Creates questions as to what can they do in the area to make the DG feasible
 - Until has some substation where the expected reverse power through the transformer during light load is near the capacity of the transformer
 - WMECO has a few transformers with reverse power at the rating of the transformer
 - Until and National Grid both compare the aggregate generation to the minimum load on the feeder when determining if the transformer capacity is being exceeded
 - Moody confirmed that Eversource East is using the same methodology (Aggregate generation minus the minimum load)
 - Eversource CT is not taking load into account when determining if the transformer can be back-feed

ISO NE Planning Requirements

- Dave Forrest gave Presentation of the ISO-NE Planning requirements
- FERC jurisdiction if there is an existing project on a circuit that is selling energy on the wholesale market
 - The status of the circuit when applied is submitted
- If not FERC jurisdictional you are state Jurisdictional
- Both FERC and State have their own interconnection queues and it is important to apply to the correct one
- I.3.9 Applications
- ISO studies will become more likely as DG penetration increases
- Frequency ride-through settings are covered in ISO -NE 1547 SRD
- Long term adoption of IEEE 1547 will be an iterative process
- Early engagement with ISO is important to determine if I.3.9 review is needed
- There are several documents that detail the ISO interconnection process
- Planning Procedure PP5-1 provides size constraints for study requirements
- No notification to ISO is required for less than 1MW
- DER can affect clearing times of transmission lines
- Will posed a question as to whether National Grid will always know what is the intention of the project as to whether developers will be able to tell them what the compensation plan for the project is as there is a possibility to be submitted to the wrong queue
- Dave is going to follow up on this item
- Storage narrative may be the best place to have this information and storage is most likely to participate in frequency regulation market

IEEE 1547 Subcommittee Update

- Dave gave Presentation of the IEEE 1547 subcommittee
- EPS operator has certain responsibilities to make determinations such as how long the DG should take to come back on line

- Stretch goal will be for the 1547 team to resolve all topics by the end of 2019.
- Implementation plan
 - Team will meet monthly and report progress quarterly
 - Will also seek input from manufacturers
- Mike Brigandi mentioned that this would potentially be too condensed a timeline
- The sub team had planned to meet multiple times before the next TSRG meeting and will come back with any changes to proposed agenda for the remainder of the year.

Storage Subcommittee Update:

- Mike Porcaro plans to have a draft section to go into the MA TSRG Common Guideline next meeting.

Topics for next year

- It was briefly mentioned that Voltage Fluctuation study methods as well as Behind the meter protection schemes would be topics needing discussion in the coming year at TSRG.

Next Meeting is tentatively scheduled for March 21 2019

- Location TBD