Minutes of the April 7, 2020 Interconnection Working Group (IWG) Meeting

Attendees:

DER Industry

Tom Casey (Harvest Power)

Gregory Sachs (Empower Solar)

Daniel Wang (SPower)

Scott Sousa (Sunation)

Bill Feldmann (Empire Clean Energy)

Scott Maskin (Sunation)

Steve Foley (Sunrise Power Solution)

Tara McDermott (Empower Solar)

Shay Banton (Boreggo Solar)

Michael Farrell (Spower)

Iyi Okunlola (SPower)

Chuck Schwartz (Empower Solar)

Anjalu Linggi (Empower Solar)

Michael Ruppert (JEM Engineering)

Michael Conway (Boreggo Solar)

Perri Jr. Arthur (Cedgreen Tech LI)

Chris Hoffmann (Premier Solar NY)

Katherine Cox (Borrego Solar)

Jean Pierre Clejan (Green Logic)

LIPA/PSEG Long Island

Mike Simione (LIPA)

Pete Mladinich (LIPA)

Anie Philip (PSEG LI)

Robert Grassi (PSEG LI)

Amrit Singh (PSEG LI)

Iram Iqbal (PSEG LI)

Nicola Montanaro (PSEG LI)

Don Mathew (PSEG LI)

France Marquez (PSEG LI)

Nizu Al Amin (PSEG LI)

Ali Akgul (PSEG LI)

Curt Dahl (PSEG LI)

Anthony Gorgone (PSEG LI)

Mike Heyer (PSEG LI)

Camilla Edi Sierra (PSEG LI)

Diane Blankenhorn (PSEG LI)

Carl Williams (PSEG LI)

Thomas Muratore (PSEG LI)

James Domozych (PSEG LI)

Reigh Walling (PSEG LI Consultant)

DPS

Jason Pause (DPS)

Elizabeth Grisaru (DPS)

Introductions

Ms. Philip opened the meeting by welcoming everyone.

Attendance

Ms. Iqbal conducted the roll call and ensured the attendee's names were captured.

IWG Compliance Guidelines

- Mr. Grassi reviewed the Compliance Guidelines with participants, including expectations, procedures, policies and topics to avoid which are stated in the compliance document.
- Mr. Grassi had asked if everyone signed the compliance guidelines. The answer was affirmative with the exception of one attendee, who sent the signed Acknowledgement of Receipt and Review to Ms. Iqbal shortly thereafter.

1. Hosting Capacity Maps: Implementation Plan (PSEG Long Island)

Ms. Blankenhorn presented the PSEG LI implementation plan for hosting capacity maps. Hosting capacity maps stage 2 is expected to go live by December 2020 and stage 3 is expected to go live by December 2021.

There were questions from industry by Mr. Sachs and by Mr. Banton on the frequency of updates and also asked the reasoning for stage 3 to be delivered by December 2021. Mr. Singh responded that the frequency of updates would be quarterly and that PSEG LI would need to ensure that the correct feeder models needs to be established and the plan is to approach in stages.

DPS representative Jason Pause asked what voltages would be displayed. PSEG LI responded and said 13 kV & 4 kV.

Mr. Banton asked whether they were going to be launching at the JU level of 2.0 or 2.1. PSEG LI said 2.1.

Mr. Sachs asked what PSEG LI sees as the biggest challenges to this initiative. PSEG LI said that creating the proper feeder models and related data is likely going to take the most effort.

Mr. Sachs asked if PSEG LI is participating in the JU Hosting Capacity Map initiative. PSEG LI stated that PSEG LI was monitoring the JU hosting capacity process. PSEG LI coordinates with JU's to leverage best practices. Mr. Sachs mentioned that an ideal goal, that he has also suggested in the JU group forum, is that the master database each individual utility uses to display their hosting capacity map data is the same master database each utility uses on a daily basis to update and store all grid information, thus enabling the hosting capacity map to be always up to date in "real time" and eliminate the need and labor to "refresh" it.

Mr. Sachs asked PSEG LI to define what is “favorable”, “moderate” and “not favorable” conditions until the new hosting capacity map is established. Ms. Iqbal from PSEG LI had offered to take this request back.

Mr. Banton asked about the assumptions that will be incorporated into the hosting capacity maps and recommended PSEG LI to have more presentations and feedback sessions. Mr. Sachs suggested the possible creation of focus or stakeholder group.

DPS staff representative mentioned that there is advantage in soliciting industry feedback. Ms. Philip had communicated that PSEG LI is interested in obtaining industry feedback on this project, and PSEG LI will follow up with the industry.

2. Interconnection Online Application Portal (IOAP): Implementation Plan (PSEG Long Island)

Ms. Sierra introduced the vision of Interconnection Online Application Portal along with the anticipated customer benefits, business improvements and the implementation timeline of the project. This project is expected to complete by October 2020.

Mr. Sachs asked about the platform of the portal and indicated that industry would be available for the Q & A or spinoff group that can comment on the site and overall implementation. Ms. Sierra answered that the platform is same as the PSEGLI My Account site. Ms. Sierra commented that once the design is finalized, PSEG LI would be reaching out to industry for feedback. Ms. Iqbal stated that other utility platforms are also being evaluated and Mr. Sachs agreed that it is prudent to evaluate the platform of other utilities.

DPS representative Ms. Grisaru asked whether there will be stakeholder sessions and communicated the importance of obtaining industry feedback.

DPS representative Mr. Pause commented that the feasibility or benefit from future phases is being discussed within Joint Utilities and advised PSEG LI to follow up with JU’s before committing to the implementation of IOAP Phase 2 or Phase 3.

Mr. Banton asked whether the WebEx is being recorded. Ms. Philip answered no and said meeting minutes will be issued.

3. Industry Presentation on DTT/SCADA LL – Greg Sachs (Industry)

Mr. Sachs presented and followed up with questions regarding direct transfer trip and lease lines.

As noted in section 2 of the presentation, Mr. Sachs requested PSEG LI provide a summary document that outlines SCADA & Direct Transfer Trip related communication requirements. Ms. Iqbal commented that developers receive the requirements when the project is in design and engineering phase. PSEG LI would consider posting that document on the IWG website. PSEG LI said that they had already begun assembling a document & information similar to what Mr.

Sachs was suggesting. Mr. Sachs requested that this be posted publicly and not require a project to be at a certain stage.

As noted in section 3 of the presentation, Mr. Sachs went over the fundamental review of DTT requirements and standards.

Part of the discussion focused on the 1 MW limit and the 50% DER penetration limit for scenarios where DTT is required. PSEG LI explained the reasoning for 50% penetration. Mr. Walling (PSEG LI's consultant) commented that for greater penetration, an unintentional island might have sufficient voltage such that under voltage tripping does not take place fast enough to coordinate with feeder reclosing. Mr., Sachs had asked whether risk analysis could be conducted of increasing the penetration limit to 80%.

The feeder reclosing practices was discussed and Mr. Sachs asked whether the proximity of DER from substation would change the DTT requirement. Mr. Walling answered no. Mr. Gorgone (PSEG LI) clarified that the substation breaker is observing fault conditions at the substation (such as current), versus conditions seen at the breaker at DER site which are different.

Mr. Banton inquired why reclose blocking is not utilized. Mr. Gorgone stated that physical clearance limitations in the LIPA substation switchgear preclude implementation of voltage transformers to facilitate reclose blocking. Mr. Ruppert commented about Central Hudson utilization of this method and stated that PSEG LI should consider this alternative.

Mr. Sachs had asked why the under voltage trip setting at DER site cannot be used to coordinate with recloser settings. Mr. Walling clarified that under voltage settings must allow the DER to ride through the voltage dip during a transmission fault and hence will not be able to trip within 160 ms. Mr. Sachs asked about Under Voltage clearing time and ride through characteristics, and whether ride through is needed if DTT is required. Mr. Walling explained the need for ride through characteristics, which is to prevent widespread DER tripping during a transmission system fault.

Mr. Banton asked whether there is any consideration in changing the instantaneous trip policy. Mr. Sachs asked if 160ms is the correct value used for anti-islanding for DERs.

Mr. Walling responded that islanded DER would trip in 160 ms if the voltage is less than 0.5 p.u., which can be expected if the DER penetration does not exceed 50% of the minimum load. He also commented that there are uncertainties in the performance of islanding detection algorithms in certified DER due to the differences between the certification test circuit and the real world. He indicated that for example, the change in impedance algorithm is unlikely to work in a multi-DER situation. Some manufacturers use the algorithm as well as similar ones based on harmonics but they are tested individually and not as a group. With multiple inverters supporting an electrical island, which is the normal situation, there is no proof that these schemes will work.

Mr. Sachs said that there are still open questions about the LIPA's requirement of instantaneous trip and the 160 ms duration, as outlined in the presentation document. Note: It is believed that Mr. Sachs was referring to the policy of using instantaneous reclose after tripping, which has a

nominal 160 ms delay; instantaneous reclosing is presently used regardless whether the initiating trip is by instantaneous overcurrent or time-overcurrent protection elements.

Mr. Lanza indicated that other areas in the US do not have the same level of concern. Mr. Walling indicated that there are defects in testing of anti-islanding, and there are no problems now because others have systems in place to prevent islanding. Mr. Gorgone indicated that other parts of the country have two second time delay reclose and that is why they see no problem.

During this discussion, DPS Staff representative, Mr. Pause, had also indicated that JU utilities have implemented other alternatives and encouraged PSEG Long Island to evaluate these alternatives. Mr. Pause suggested the importance of PSEG LI reevaluating the use of reclose blocking and recommended to reach out to Central Hudson as necessary.

4. Main Factors Affecting DER Limits (PSEG Long Island)

Mr. Montanaro presented the main factors affecting DER limits. These limits include voltage criteria, available interconnection position, power factor, geographic location, thermal limitation and the size of DER injection.

Mr. Sachs commented that the goal in requesting this presentation was to evaluate the frequency of each of these limitations to establish the priority order in addressing the most limiting factors.

Mr. Ruppert had asked to elaborate on the smart inverter reference and Mr. Montanaro replied that Smart inverter have some controls and PSEG Long Island can request DER owners to go into Lagging and Leading mode as needed.

Mr. Banton inquired which distribution model is being used and Mr. Montanaro indicated that PSEGLI utilizes CYME software.

5. Reverse Power Flow Practices - Substation Back feeding: Shay Banton (Industry)

Mr. Banton reviewed the reverse power flow practices presentation and presented the industry interpretation of LIPA's approach with respect to system constraints, industry concerns, and current practices by other utilities and industry recommendation.

Mr. Montanaro corrected the reference of "homogenous" indicating that Long Island feeders are not homogenous. Mr. Montanaro commented that the peak loading on all LIPA feeders is not the same.

Mr. Banton agreed that no utility system is exactly homogenous, but that LIPA's system, compared to other NY utilities, is much more homogenous. The PSEG system contains relatively high peak loads (+5MW) with nearly all radial systems and with substation transformer LTCs as only means of circuit voltage regulation. Mr. Montanaro states that distribution system is different as compared to other utilities. Examples are the conductor size, amount of conductors, radial system, distribution loop system etc.

Mr. Banton inquired whether the thermal overload characterization is correct. Ms. Philip responded that the thermal overload characterization is correct. Ms. Philip asked to provide a disclaimer on slide # 9 about the representation of PSEG Long Island Distribution system since it is not entirely correct.

Ms. Philip stated that she does not agree with the characterization of no other utility applies this methodology since the limiting constraints for each utility are different. System characteristics are different between Long Island and other utilities. The limiting factor will be different so cannot compare methodologies between other utilities. For example, emergency rating is higher in other utilities as compared to Long Island system. The Long Island distribution system is radial but in other utilities, some systems are network or loop configurations. Mr. Montanaro stated that Dominion might be utilizing a similar methodology. Mr. Banton stated that this threshold is not driven by differences in thermal thresholds, but by differences in Grid Operations and utilization of onsite monitoring data. Mr. Banton reiterated that, independent of the stated reason, it is the NYSEIA industry's general observation that no other utilities in advanced DER markets apply the LIPA methodology.

Mr. Banton requested PSEG LI consider a change in methodology or adopt practices utilized by other utilities to increase hosting capacity. Ms. Philip stated that PSEG LI understands that this is an area of concern for DER community and is currently evaluating short-term solutions and long-term technology solution. The technology integration with the distribution operations platform will take time.

Mr. Banton asked about the time frame for the short term and long-term solution. Ms. Philip stated that short-term solution is for the near term and long-term solution may take up to 2 years. Mr. Banton replied requesting a preemptive evaluation of currently queued projects without the arbitrary 3MW limit. He stated that if this methodology is planned to be removed in the future we should preemptively review all current projects assuming the 3MW threshold doesn't exist since sites won't PTO until this new mitigation is in place a year or longer in the future. If not done a significant amount of development dollars already invested will be lost and projects will have to restart the interconnection process when the methodology changes. Mr. Banton also highlighted that this methodology is not in alignment with NYS renewable energy goals and will halt the development of solar and ESS in LIPA for several years.

Ms. Philip stated that implementing reclosers are being considered to trip DERs during emergency conditions consistent with some utilities. Mr. Banton indicated that the opinion from DER community might differ from developer to developer but that many developers would be open to this option. Mr. Sachs added that if the interconnection is possible by tripping DERs during emergency conditions, then industry might often choose the interconnection option even if that means DERs may have to come offline during emergencies.

The Green Logic representative Mr. Clejan asked if AMI data could be utilized. Ms. Philip indicated that the distribution platform integration would be needed regardless of AMI data. Ms. Philip asked clarification on industry recommendation on applicability, which she said, would need to take back and evaluate on how to apply a change in future.

6. IWG Future Meeting Schedule

Ms. Philip indicated that PSEG LI would work with Mr. Sachs to identify future 2020 meeting dates.

Meeting Adjourned