**IBRWG Update**

**October 2024**

**Chair: Julia Matevosyan, Vice-Chair: Miguel Cova Acosta**

**IBRWG met on October 11th (Webex, Open Meeting).**

Miguel Cova Acosta led the meeting

The agenda and the presentation slides are available [here](https://www.ercot.com/calendar/10112024-IBRWG-Meeting-_-Webex)

**IBRWG Main Meeting**

**SSR/SSFR Best Practices**

Anuradha Dissanayaka, Andrew Isaacs (Electranix)

* + Went through a short tutorial on what SSO is and detailed the differences of sub-synchronous resonance (SSR), sub-synchronous torsional interaction (SSTI), sub-synchronous control instability (SSCI), and sub-synchronous ferro- resonance (SSFR).
  + Went through the common types of SSO analysis studies: screening studies, advanced screening studies, perturbation analysis/combined impedance analysis, full detailed time domain analysis.
  + Underline the importance of accurate models including transformer saturation characteristics.

**PFR from IBRs under “Deep” Curtailment**

Scott Karpiel (SMA)

* + Processing time of the frequency measurement is dependent on: accuracy of measurement devices, window of measurement, processing time of the plant controller.
  + If the plant is operated at less (curtailed) maximum active power, it may not be possible to increase the AC output power as there may not be enough irradiance to support the downward frequency event.
  + If the IBR unit is curtailed to zero, it will not be able to respond to high frequency event.
  + If IBR unit curtailed to zero in the middle of a clear day, it can respond to low frequency event. The device is listening to plant controller, so if controller responds (irradiance available) then yes.
  + With emerging risk of major load loss events involving data centers, solar PVs are able to apply FFR-type response to back down quickly (perhaps as an Ancillary Service).
  + Anonymous solar vendor with large ERCOT presence: slides were presented by Miguel Cova Acosta (Vestas) on their behalf
  + Similar to what SMA presented
* ERCOT commented that models do not perform as expected (for provision of PFR) at deep (down to <10% curtailment)
* There's seems to be a lack of understanding and transparency regarding how a solar GO reports HSL to ERCOT for PFR evaluation, which is crucial information for ERCOT evaluation.

**NOGRR 245 and 255 Update**

Stephen Solis (ERCOT)

* + NOGRR 245 changes to the Operating Guides became effective 10/1/24.
  + The Board/PUCT approved version of NOGRR 245 bifurcated the language around an exemption process for limitations which is to be addressed by a subsequent NOGRR and potentially a PUCT rulemaking.
  + Other parts of NOGRR 245 have performance requirements that become effective after changes to maximize ride-through capability have been implemented. Entities need to submit a plan and then get approval. If longer than 180 days is needed, there’s rationale that needs to be submitted and approved.
  + Some parts of NOGRR 255 became effective as of 8/1/24 (e.g. Data retention, Data provision, Maintenance and Testing).
  + Other parts of NOGRR 255 will become effective after new equipment is installed or existing equipment is modified within the required timelines (e.g. 50% of new within 2 years and 100% of new within 4 years.)

**NERC Standards Update (PRC-029)**

Rachel Coyne (TRE)

* + [PRC-029](https://www.nerc.com/pa/Stand/Pages/Project_2020-02_Transmission-connected_Resources.aspx) Frequency and Voltage Ride-Through Requirements for IBRs did not reach consensus in the final ballot in August. This is primarily due to the proposed frequency ride through requirement being beyond IEEE 2800-2022 requirement even, while being applied retroactively (no exemptions as per proposed implementation plan).
  + NERC Board had to invoke a non-traditional procedure to meet FERC Directive (Section 321 of Rules of Procedure) and held Technical Conference on 9/4-9/5 in Washinton D.C. with a number of technical panels where OEMs and plant developers/owners had a chance to provide their input.
  + PRC-029 passed on 10/4/24 with a 77.88% ballot
  + SAR-013: Revisions to BAL-001-TRE-2 closed drafting team solicitations on 10/7/24. Scope for SAR includes: widening generator governor deadband, clarify roles, and define PFR performance requirements for BESS.

**Other Industry Updates**

Miguel Cova Acosta (Vestas) on Julia’s behalf

* + Unifi Consortium has upcoming GFM seminars.
    1. <https://unificonsortium.org/>
    2. Register here: <https://nrel.zoomgov.com/meeting/register/vJIsdOmvrjsoGPEydNnFh-UWmuCshPoXP-g#/registration>
  + Interconnection Innovation e-Xchange (I2X FIRST) has upcoming meetings
    1. Sign up for all future i2X FIRST Meetings here: <https://www.zoomgov.com/meeting/register/vJItceuorTsiErIC-HInpPbWuTUtrYQAuoM#/registration>
    2. Follow DOE i2X FIRST website: <https://www.energy.gov/eere/i2x/i2x-forum-implementation-reliability-standards-transmission-first> for meeting materials & recordings and for future meeting details & agendas
  + ESIG webinar: Global Update on GFM Projects and Specs
    1. <https://www.esig.energy/event/webinar-a-global-update-on-gfm-projects-and-specifications/>

**AGS ESR Model Quality Tests and Discussion**

Poria Astero, Sun Wook Kang (ERCOT)

* + ERCOT presented a draft proposal for AGS-ESR at the [September IBRWG](https://www.ercot.com/calendar/09162024-IBRWG-Meeting-_-Webex) and posted the [ERCOT AGS-ESR Test Requirement report](https://www.ercot.com/files/docs/2024/09/16/ERCOT%20Advanced%20Grid%20Support%20ESR%20Test%20Requirement_.pdf).
  + Almost 42% of the interconnection requests are Energy Storage Resources (i.e., Battery).
  + With minimum impact to the hardware, AGS-ESR can enhance grid stability, reduce generation curtailment due to stability constraints, reduce the severity of grid disturbances.
  + ERCOT plans to submit the PGRR and NOGRR for stakeholder review in 2024. DWG Procedure Manual will need to be updated to incorporate model quality test requirements.
  + ERCOT has recommended two types of model tests for assessing AGS-ESR performance: site-specific model quality tests (MQT) and unit model validation tests.
* ERCOT is requesting feedback from stakeholders on the test requirements.