**IBRTF Report To ROS**

**February 2023**

**Chair: Mohammad Albaijat, Vice-Chair: Julia Matevosyan**

**IBRTF last met on January 20, 2023 (Webex)**

**It was only open meeting session.**

**Discussion Items:**

**Open meeting IBRTF Discussion**

NERC EMT Reliability Guideline, It was presented by Aung Tant (NERC)

* + Electromagnetic Transient (EMT) Modeling for BPS-Connected Inverter-Based Resources – Requirements and Verification Practices
  + Studying EMT model is needed to address issues related to IBRs
  + To address gaps identified in recent disturbance reports.
  + Reference for TPs and PCs as they begin performing or coordinating EMT studies during the interconnection study process or during planning assessments.
  + Reliability Guideline: EMT Modeling and Simulation - in 2 parts
    - Vol. 1: EMT Model Requirements and Quality Control. Comments period ends Feb 20th . https://www.nerc.com/comm/RSTC\_Reliability\_Guidelines/Draft\_Reliability\_Guideline-EMT\_Modeling\_and\_Simulations\_Vol\_1.pdf
    - Vol. 2: EMT Studies
  + EMT Taskforce
    - As EMTTF activities are entirely public, the EMTTF is open to all industry members
    - Please contact Aung Thant – [aung.thant@nerc.net](mailto:aung.thant@nerc.net)

**IBR Ride-Through Requirements NOGRR245**

Presented by Stephen Solis (ERCOT)

**NERC Recommendations from the Odessa report and upcoming ERCOT activities for mitigating IBR risks**

* Presented by Patrick Gravois (ERCOT)
* NERC published [2022 Odessa Disturbance Report](https://www.nerc.com/comm/RSTC_Reliability_Guidelines/NERC_2022_Odessa_Disturbance_Report%20(1).pdf) in December 2022
* NERC held Webinar on January 4, 2023
  + Panelists from NERC, TRE, and ERCOT
* NERC recommendations to **TOs, GOs, GOPs, Developers, OEMs**
  + NERC Assurance of Inverter-Based Resource Performance
  + NERC Assurance of Model Quality
  + Model Quality and Model Validation
  + Study Qualified Changes Prior to Implementation
  + Adoption of Reliability Guidelines
    - [BPS-Connected Inverter-Based Resource Performance](https://www.nerc.com/comm/RSTC_Reliability_Guidelines/Inverter-Based_Resource_Performance_Guideline.pdf)
    - <https://www.nerc.com/pa/rrm/ea/Pages/Major-Event-Reports.aspx>
* NERC recommendation to ERCOT:
  + ERCOT Improvement to Interconnection Process
  + ERCOT Adoption of Reliability Guideline Content
  + ERCOT Follow-Up with all Inverter-Based Resources in Texas Interconnection
  + ERCOT System Model Validation Effort
* **ERCOT Activities to Mitigate IBR Risks - 2023**
  + Send out formal requests in January to REs of affected facilities in Odessa events that models will need to updated and resubmitted
  + Reach out to all facilities (Operational or Commissioning) with TMEIC, Power Electronics, or KACO inverters

**Industry Update**

* Presented by Julia Matevosyan (ESIG, IBRTF vice-chair)
* Proposed modifications to ENTSO-E Requirements for Generators to include grid forming capability
  + ENTSO-E is the European association for the cooperation of transmission system operators (TSOs) for electricity
  + In 2016 ENTSO-E approved Network Code (NC) on [Requirements for Generators (RfG)](https://www.entsoe.eu/network_codes/rfg/) – a harmonized minimum standard that all generators across Europe must respect to connect to the grid
  + On 11/23/22, ENTSO-E held a web-meeting to present proposed amendments to the network code to include grid forming capability requirements for IBRs (including battery storage) to ensure stable operation at high penetration of non-synchronous generation
  + The TSOs have developed this proposal for legal text and submitted it to the regulator for consideration
* UNIFI Grid Forming Specifications
  + Universal Interoperability for Grid-Forming Inverters (UNIFI) Consortium is a project funded by the U.S. Department of Energy. The project brings together leading researchers, industry stakeholders, utilities, and system operators to address fundamental challenges in seamless integration of grid-forming (GFM) technologies into power systems of the future. The project objectives include R&D, Commercialization and Demonstration, Outreach and Training
  + One of the project tasks is to provide uniform functional specifications for GFM IBRs for integrating GFM IBRs in electric power systems at any scale
  + The [first version of the specification](https://drive.google.com/file/d/19YRpERnsssEJ62H_Tb0edtxHrZI37ZkK/view) was released on December 15th 2022 and it is envisioned that it will be a “living document” regularly updated during the course of the project and beyond.
  + These specs are in addition to applicable GFL requirements unless such requirements prevent GFM functionality.
* Grid forming batteries in Australia
  + Currently Australia is leading the way with three grid scale grid forming batteries in operation