**IBRTF Report To ROS**

**August 2022**

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

**IBRTF last met on August 12, 2022 (Webex)**

**Discussion Items:**

**Status Update on Odessa Disturbance 2**

* Presented by Patrick Gravois (ERCOT)
* New large disturbance on June 4th 2022, in Odessa area:
  + Event initiated by lightning arrestor fault on 345 kV level in Odessa area on June 4th at 12:59:25 PM
  + Estimated loss of 2,560 MW of thermal (851 MW) and Solar (1,709 MW from 14 facilities) generation
  + Lowest and highest recorded voltages are well within VRT “No Tripping” zone as per NOG 2.9.1
  + System Frequency declined to 59.7 Hz and recovered in 1 min 20 sec,
  + **Local transient frequency seen as low as 58.83 Hz and as high as 60.26 Hz in Far West (lasted for about 100-150 ms)**
  + **3330 MW transient active power reduction during the fault for 100 ms. 70-80% loss compared to pre-disturbance output.**
  + 1,227 MW of RRS deployed, 1,116 MW of Load Resources deployed
  + 9 of the 14 lost generation resources in prior Odessa event May 2021
  + 3 inverter manufactures identified (same as in previous Odessa event), these OEMs represent over 60% of total solar capacity installed in ERCOT.
  + Categorized as NERC Cat 3 event (gen loss > 2000 MW), NERC event analysis triggered. ERCOT submitted NERC Cat 3a Brief Report to TRE. NERC Event Analysis will follow.
  + ERCOT continues to follow up with involved facilities
  + Issues with availability of PMU data from some plants (in the affected area 11 out of 28 plants did not have PMU data available/usable)
  + **Appears many units are set to provide reactive current with zero active current during LVRT.** Some inverters have capability for Q priority while active current drops proportional to voltage. ERCOT looking into reliability risks associated with solar reducing to zero active power during LVRT. Why is active power to zero response so common?
  + Stakeholder are concerned about the amount of effort that goes into this. Does ERCOT has enough staff? Are there outside experts that are needed? How can we make sure that this is done timely. ERCOT: More is needed in model validation efforts, trying to look into automation tools, but are understaffed right now.

**NPRR/NOPR Update**

* Presented by Stephen Solis (ERCOT)
  + Wholesale adoption of IEEE2800 raises a legal question about requiring adherence to standard that needs to be purchased. Additionally, no testing requirements are yet available.
  + ERCOT started drafting language on identified gaps and prioritizes the most important ones:
  + NPRR1138 (MVAr at 0 MW capability) is in the stakeholder process, while performance and testing NOGR drafted and is being reviewed internally at ERCOT, expected to come out early September
  + VRT requirement enhancements to align with IEEE2800, enhance protocols and guides (will potentially go beyond IEEE2800 on phase jump withstand and Q-priority (more prescriptive on active reduction))
  + More detailed requirement on PFR (aligned with IEEE2800) will follow

**Closed IBRTF Sessions Discussion**

* Presented by Freddy Garcia (ERCOT)
  + Presented updated scope language to include Closed Sessions (**ROS to vote**)
  + Presented NDA that will need to be signed
  + IBRTF was not opposed to having closed sessions and promote open and detailed discussion with OEMs, developers and generator owners, involved in disturbance events. As well as to discuss OEMs’ equipment capabilities and alignment with IEEE2800.
  + IBRTF supported broader participation in closed sessions (including TDSPs, OEMs and relevant industry experts).

**Industry Update**

* Presented by Julia Matevosyan (ESIG, IBRTF vice-chair)
* Joint NERC and TRE [Panhandle Wind Disturbance Report](https://www.nerc.com/pa/rrm/ea/Documents/Panhandle_Wind_Disturbance_Report.pdf) has been published, 765 MW loss of wind generation (almost 500 MW loss was non-consequential), various causes of tripping, most prominently PFR and VRT controller interactions, not captured in models.
* ESIG/NAGF/NERC/EPRI Generation Interconnection Workshop (virtual) August 9-11, [video](https://www.youtube.com/channel/UCHfBken6UVuCJQmAfGv1vJA?app=desktop) & [slides](https://www.esig.energy/event/joint-generator-interconnection-workshop/), in conjunction with FERC NOPR on Generation Interconnection, multiple NERC Disturbance Events and IEEE2800 approval. The workshop covered interconnection process, studies, modeling, IEEE2800 and DOE i2X initiative. OEM panel on IEEE2800 readiness. Relevant discussion of active power reduction with Q-priority during VRT.