PDCWG Open Action Items

June 12,2019

Completed Action Items in 2019

* Pulish ERCOT real time inertia on ERCOT web site.
* Evaluate FMEs using proposed evaluation criteria – i.e. operating below LSL, passing score but no eval due to STARTUP/TEST mode. Eventually withdrew action item due to ongoing BAL-001-TRE-1 revisions in work.
* Provide PDCWG with periodic updates as ERCOT gets results in “Study to Identify Impact of Southern Cross DC Tie on ERCOT’s Ancillary Services”.
* Revisions on NPRR 863 completed to better explain “QSE level evaluation of FFR resource performance”.
* PDCWG members provide feedback to ERCOT on SCT Overshoot Study.
* PDCWG members provide feedback to ERCOT on NPRR 863.

Review Open Action Items

* 1. Carry-over actions:
     1. Luis – (with regard to SCT DC Tie Directive 9) investigate whether ERCOT system stability with regard to parameters aside from frequency (i.e. voltage) is being, or has been, analyzed. ERCOT should look into this and respond to the PDCWG.
        1. Location of SCT versus STP is different within the interconnection, so we shouldn’t assume all the dynamics of the system response would be the same. ERCOT might coordinate this work with DWG.
        2. Refer to PDCWG Topic #2 (SCT Overshoot Study) in January 2019 PDCWG for cross-reference to this Action Item.
        3. Assigned Sept 2018 PDC to Sandip. Modified at Dec 2018 PDC. Reassigned to Luis at Jan 2019 PDC. Luis will follow up to PDCWG Feb 2019.
     2. Sandip - Model verification study request: ERCOT to use the system model used for frequency response study and use data from a real FME to assess how the model match with the actual system performance to gain better understanding of the model. This study will be used to evaluate model accuracy (within +/- 5-10% error margin). Results of the model validation study will be presented to PDCWG. (ERCOT - Fred Wong / Sandip Sharma)
        1. Assigned Dec 2018.
        2. Rolled into ERCOT Frequency Response Modeling action item Jun 2019.
     3. All PDCWG members to provide feedback and questions to ERCOT with regard to the proposed RRS offer limit calculations.
        1. Should ramp adjustments be included in the Droop Performance calculations?
        2. Should we consider Droop Performance for initial performance only or for both initial and sustained performance?
        3. Any other questions or issues PDC members wish to address.
        4. Following feedback, ERCOT presented revised RRS bid/offer limit proposal in Jun 2019.
     4. ERCOT Frequency Response Dynamic Model (DFRM) evaluation/revision effort.
        1. PDCWG recommends initiation of effort across ERCOT stakeholder disciplines to improve accuracy of ERCOT DFRM.
        2. This effort should begin with combined cycle generating unit frequency response, as such units appear to show the largest gaps betweeen modeling and real performance.
        3. ERCOT will involve PDCWG in 2020 Ancillary Service Benchmarking analysis, during the development of 2020 Ancillary Service Quantity Assessment (particular interest in RRS). Discussions expected Jul 2019 to Sep 2019.
        4. Initiate coordination between PDCWG and DEWG regarding dynamic model improvements.
        5. Initiate benchmarking efforts to compare and validate ERCOT’s DFRM with recent historical FMEs.
        6. Investigate ideas to resolve the conflict presented by the desire to set RRS bid/offer limits based upon historical unit frequency response performance with a known inconsistency – historical FMEs all involve Hz minimum of 59.80 Hz to 59.90 Hz, while RRS is intended to protect against a UFLS event where Hz minimum is 59.30 Hz to 59.40 Hz.
        7. Can the DFRM be designed with separate models for different generator types (or is it already), for coal, gas, combined cycle, hydro, wind, etc.? This would be beneficial both in the near term, as well as longer term, as the resource mix evolves.
        8. If the DFRM can be improved to a sufficiently high accuracy / confidence level, could the routine assumption of turning off governors for all non-RRS generators in the annual Ancillary Service Benchmarking efforts be reconsidered?
        9. Does DFRM include Loads (load dampening), Generators, and Synchronous Condensers?
        10. Nominally, the Ancillary Service Quantity Assessment utilizes “loss of two STP units” (2,750 MW). Have any other ERCOT contingencies been considered or evaluated? What about major substation events, cascading wind power events, or SCT?
        11. What Inertia assumptions are used in the Ancillary Service Quantity Assessment?
        12. Request volunteer participants, and discuss a timeline…

* 1. New actions:
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