NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Notes
Generator Verification SDT — Project 2007-09

December 8, 2009 | 8 a.m. – 5:00 p.m. CST
December 9, 2009 | 8 a.m. – 4:00 p.m. CST

Luminant Offices – Energy Plaza 2nd Floor
1601 Bryan Avenue
Dallas, TX 75201

Attendees: Lee Taylor, Rick Terrill, Jason MacDowell, Chifong Thomas, Chris Young, Scott Etnoyer, Bill Shultz, Tom Bradish, Ed Wingard, Ken Stenroos, Brendan Kirby

Phone attendees: Gary Humphries, Dave Kral, Scott Berry, Pouyan Pourbeik, Tom Higgans, John Hansen, Reigh Walling, Murray Eitzmann, Tom Girard, Jason MacDowell, Lon Montgomery, Bob Nelson and Joe Hurley

1. The SDT chair, Lee Taylor welcomed everyone to the meeting and reviewed the agenda.
2. Reviewed NERC Antitrust Compliance Guideline.
3. Reviewed status of NERC document to address modeling of equipment for reliability purposes that is deemed "confidential and/or proprietary" by manufacturers and update on coordination with the PRC-001 SDT with the Generation Verification Standard Drafting Team effort on PRC-019.
4. Reviewed NERC Posting Checklist. [Attachment 1-MOD-024-2]
5. The full team discussed the MOD-027-1 sub team's proposed technical strategy/direction for the first posting version of the standard.
6. Sub Teams split up to their respective break out sessions on Tuesday afternoon, December 8th to finalize posting packages for MOD-024, MOD-026, and PRC-024.
7. The sub teams were reminded to hold an industry web conference during their Comment Periods in order to introduce the proposed draft standard and to answer questions from industry.
8. The PRC-024 SDT was tasked with drafting a straw proposal for PRC-019 by the February 24-25, 2010 meeting.
9. The PRC-024-1 sub team chair will contact the Under Frequency Load Shedding (UFLS) SDT chair to discuss the upper threshold for frequency in both standards.

10. Standards Issue Database — contains records that are recommendations, directives, or suggestions that have been culled out of FERC orders. Each record has a field that cross references standards. A report can be generated for each of the standards as available. [Attachment 2]

11. Pouyan Pourbeik of EPRI presented an update on the activities of the NERC Integration of Variable Generation Task Force (IVGTF) and an introductory presentation on the EPRI Power Plant Parameter Derivation software tool.

    a. Integration of Variable Generation Task Force
        i. They have 13 sub tasks. Task 1-1 is modeling and model validation. Scope: requirement for publicly available models for stability, power flow, and short circuit analysis; the need for model validation, and MOD standards implications.
        ii. Status is a draft report that covers the first two items of the scope. They are now discussing the MOD impacts.
        iii. They are also coordinating with the WECC WG, IEEE DPWG (dynamic performance of wind generation working group – under PSDC, power system stability and control subcomittee – Abraham Ellis, Sandia National Labs), and IEC TC88 WG27 (chair Poul Sorenson) – these groups are working on actual model development.
        iv. Their schedule is to have the next draft ready for group review by Dec. 11, and start detailed discussion of MOD impacts on Dec. 11.
        v. Some of their comments may be along the lines of "need to modify the requirements of MOD-026 to be applicable to wind generation". For instance, MEL and UELs may not apply to wind.
    b. EPRI Power Plant Parameter Derivation
        i. Validation is not a quantitative matter; you can't come up with a rule or equation to say that your model validation is good enough. You have to allow for engineering judgment. To go beyond that, is unfirm ground.
        ii. Jason MacDowell – tested to validate credible models in PSS/E and PSLF, and that evolved into a performance test to meet grid code requirements.
        iii. PPPD – the program is written in MatLab. You do not have to buy MatLab, as this is provided via an executable.
        iv. For those that did not fund it, they can still obtain it from EPRI though there is a license fee.
        v. For excitation system verification, they found 1 or 2% voltage deviation is generally good enough. That is the same as a step test. 80 mHz down for WECC was used – gets about 6 events a year (from his memory). Pouyan believes that 50 mHz may be appropriate for the EI model verification. This gets you out of dead band which may typically be around 10 mHz — but is not unusal for it to be closer to 30 mHz.
        vi. It was stressed that there are other valid techniques to verify generator equipment models.

12. Reigh Walling, Murray Eitzmann, Tom Girard, Jason MacDowell, Lon Montgomery, Bob Nelson and Joe Hurley participated in an update on the latest proposed draft of PRC-024-1 and generating station design capabilities. An IEEE draft paper was briefly discussed.

[Attachment 3] Some issues that surfaced during the discussion of power plant capabilities pertained to:

a. transient stability; The phone participants believed that the draft standards voltage ride through proposal would challenge the ability of a machine to maintain transient stability, especially for certain transmission system and/or machine operating positions. Thus, they strongly encouraged appropriate exemption to allow protective relaying initiated tripping for loss of synchronism conditions
b. design specification (IEEE synchronous equipment design standards) specifies frequency not to exceed 61.8 Hertz. Maximum long term is 61.2 Hertz. Transient is in between 61.2 and 61.8; Ed Wingard agreed to look at IEEE 50.13 to see what the frequency curve is.
c. concern regarding frequency was 61.8 vs. 62.2 hertz. 62.2 was below what Siemens, GE sent that they could withstand. Heartburn that we were deviating from IEEE Standard.
d. probably not possible for auxiliaries to ride through per Areva. Siemens may be of the same opinion as Areva.

13. The next meetings are tentatively set as follows:

February 24-25, 2010 (Juno Beach)

Agenda: Straw proposals for PRC-019, MOD-025, MOD-027

March 30-31, 2010 (Dallas)

Agenda: Respond to comments for MOD-024, MOD-026, PRC-024

May 5-6, 2010 (consider Mountain Time Zone)

June 22-23, 2010 (Central Time Zone, Xcel Energy - Dave Kral)

July 20-21, 2010 (consider Mountain Time Zone)