



ADVISORS, LLC

Attachment #9.2
Return to Agenda

NERC Standards Project 2015-09

Establish and Communicate System Operating Limits.

Report to the NYSRC Executive Committee

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Recent EC discussion regarding limits

- Platts MW Daily article referenced by R. Bolbrock regarding MISO exceeding certain transfer limits resulting from the settlement at FERC of a parallel flow dispute between MISO and SPP (and others).
- MISO had exceeded the agreed to limit during the recent cold snap and a question of whether the limits are considered firm reliability limits, or not.
- Some believe it is not a reliability limit (because it was negotiated in settlement).
- This is an open question.
- See MISO-SPP Joint Operating Agreement
 - Link: https://www.spp.org/documents/56279/20180104_spp-miso%20joa.pdf

Learning Objectives

- By the end of this session you will have heard about:
 - the NERC SOL Standards Development Project 2015-09 Periodic Review of System Operating Limit Standards.
 - The drivers behind the project
 - Drafting Team recent efforts
 - Next Steps for NERC Standards
 - IROL Guideline Effort
 - Upcoming ballot
 - Related FERC Orders

Purpose/Industry Need

Project 2015-09

- Issues were identified in Project 2015-03 Periodic Review of System Operating Limit Standards.
 - Revise or develop new definitions to provide clarity and alignment with how SOLs are treated in proposed TOP and IRO standards developed in Project 2014-03 Revisions to TOP and IRO Standards.
 - Clarify responsibilities for establishing and communicating SOLs.
 - Facilitate transfer of reliability information between the planning and operating entities responsible for establishing and communicating System Operating Limits.
- The resulting standard(s) and definition(s) will benefit reliability by improving alignment with approved TPL and proposed TOP and IRO standards.

Standards in the Project Scope

- FAC-010-3 - System Operating Limits Methodology for the Planning Horizon (retirement) .
 - Related to Planning Authority establishing SOL/IROLs in the long term planning time frame.
- FAC-011-4 - System Operating Limits Methodology for the Operations Horizon
- FAC-014-3 – Establish and Communicate System Operating Limits
- FAC-015-1 - Coordination of Planning Assessments with the Reliability Coordinator's SOL Methodology
 - The retirement of FAC-010 is proposed with the intent of adopting FAC-015

System Operating Limit Proposal

- Revised Definition:
 - Facility Ratings, System Voltage Limits, and stability limits used in the operation of the BES.
- Redline Definition:
 - Facility Ratings, System Voltage Limits, and stability limits used in the operation of the BES. ~~The value (such as MW, Mvar, amperes, frequency or volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria. These include, but are not limited to:~~ • Facility Ratings, (applicable pre and post Contingency Equipment Ratings or Facility Ratings) • transient stability ratings (applicable pre and post Contingency stability limits) • voltage stability ratings (applicable pre and post Contingency voltage stability) • system voltage limits, (applicable pre and post Contingency voltage limits)

SOL Exceedance Proposal

- Definition: An operating condition or analysis result characterized by any of the following, as determined in Real-time monitoring, Real-time Assessments (RTA) or Operational Planning Analysis (OPA):
 - The pre-Contingency state indicates any of the following:
 - Actual flow through a Facility is above the Facility's Normal Rating
 - Actual bus voltage is outside normal System Voltage Limits
 - A stability limit established to prevent instability without a Contingency is exceeded
 - A stability limit established to prevent the Contingency from resulting in instability is exceeded
 - The calculated post-Contingency state indicates any of the following:
 - Flow through a Facility is above the Facility's highest Emergency Rating, or above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur
 - Bus voltage is outside the highest or lowest emergency System Voltage Limit, or outside a System Voltage Limit for which there is not sufficient time to bring the bus voltage to established acceptable levels should the Contingency occur
 - Defined stability performance criteria are not met

11/14/2017 Ballot Results

- Did not pass
 - FAC-011-4 58.12%
 - FAC-014-3 63.17%
 - FAC-015-1 56.55%
- NPCC voted yes for all three
- Needed 66 2/3% to move forward

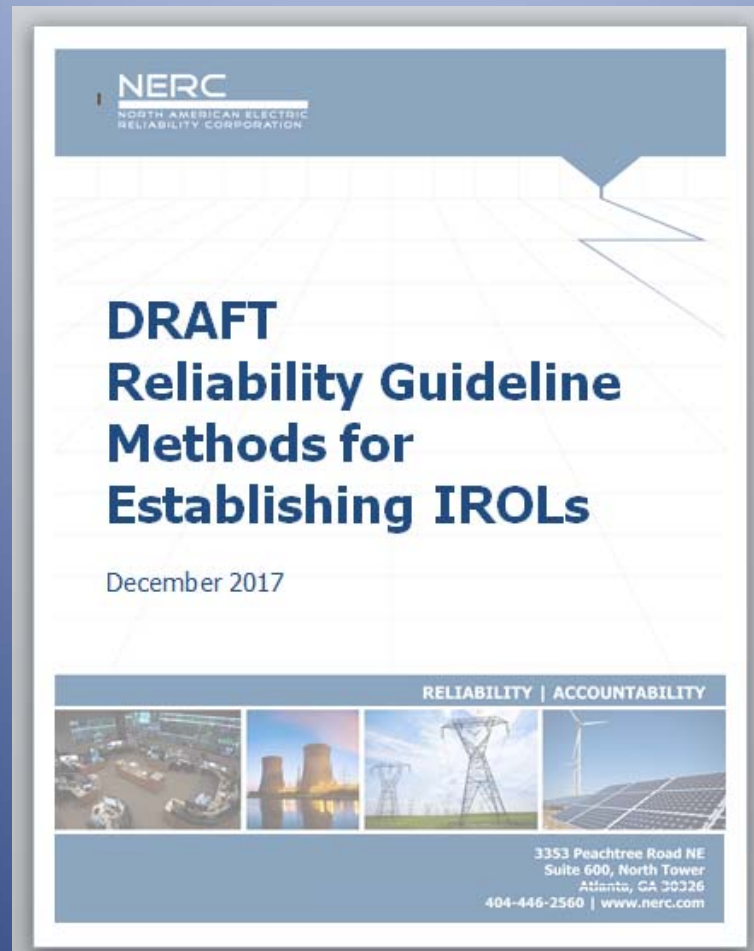
IROL Methods Effort

- FERC noted differences between interconnections regarding IROL determination and application
- To resolve this matter NERC established a Task Force
 - NERC Methods for Establishing IROLs Task Force (MEITF)
 - This is a joint Task force under both the NERC PC and OC which is working on a framework to determine IROLs in the operations time horizon.

MEITF Deliverables

1. Technical reference document addressing at least the topics identified by the Project 2015-09 SOL SDT and NERC Standards Committee.
2. Reliability Guideline on system stability analysis, assessing system instability, and determination of IROs.
3. Webinars and technical workshops, as deemed beneficial, to support information sharing across North America.
4. Recommendation to the Performance Analysis Subcommittee (PAS) whether the M-8 metric is appropriate or needs to be modified and what the modifications will be.
5. Other activities as directed

MEITF Guideline



Link: [https://www.nerc.com/comm/PC/Pages/Methods-for-Establishing-IROs-\(MEITF\).aspx](https://www.nerc.com/comm/PC/Pages/Methods-for-Establishing-IROs-(MEITF).aspx)

Current Status of Standards Development Project

- It was reported at the NPCC Regional Standards Committee in March that the SDT is working on an approach to do away with the need for a definition of SOL Exceedance.
- Posting for ballot and comment is delayed
 - it was previously expected for April
- It is now expected for ballot and industry comment in June.

FERC Concerns and Direction

- FERC Order No. 777:
 - “As discussed below, we also direct NERC to develop a means to assure that IROLs are communicated to transmission owners.” (p6)
 - “One way to achieve this objective...is to modify FAC-014 to require the provision of IROLs to transmission owners.” (p41)
- FERC Order No. 817:
 - “The Commission, therefore, sought comment on (1) identification of all regional differences or variances in the formulation of IROLs; (2) the potential reliability impacts of such differences or variations, and (3) the value of providing a uniform approach or methodology to defining and identifying IROLs.”
 - “...Project 2015-09 standard drafting team will address the clarity and consistency of the requirements for **establishing both SOLs and IROLs.**”

Executive Committee Discussion

- Next steps for EC review of the NERC Standards under revision
- Other steps?

Relevant Links and FERC Orders

- Link to 2015-09 Project Page
 - <https://www.nerc.com/pa/Stand/Pages/Project-2015-09-Establish-and-Communicate-System-Operating-Limits.aspx>
- Link to MEITF
 - [https://www.nerc.com/comm/PC/Pages/Methods-for-Establishing-IROs-\(MEITF\).aspx](https://www.nerc.com/comm/PC/Pages/Methods-for-Establishing-IROs-(MEITF).aspx)
- Link to Drafting Team October 2017 Overview slides
 - https://www.nerc.com/pa/Stand/WebinarLibrary/2015-09_SOL_Webinar_Slides_102617.pdf
- See also:
 - FERC Order 705 – Issued 2007-12-27
 - FERC Order 722 – Issued 2009-03-20
 - FERC Order 748 – Issued 2011-03-17
 - FERC Order 777 – Issued 2013-03-21
 - FERC Order 817 – Issued 2015-11-19

Questions



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