

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Periodic Review of System Operating Limit Standards

Project 2015-03

Industry Webinar
May 19, 2015

RELIABILITY | ACCOUNTABILITY



- Project 2015-03 Periodic Review of System Operating Limit Standards includes three FAC standards:
 - FAC-010-3 SOL Methodology for the Planning Horizon
 - FAC-011-3 SOL Methodology for the Operations Horizon
 - FAC-014-2 Establish and Communicate SOLs
- These standards were delayed from the 2013 periodic review of FAC standards until completion of TOP and IRO standards project and FERC approval of TLP-001-4 (October 2013)
- Periodic review is required by the NERC Standards Process Manual

- Periodic Review Objective: determine whether the Reliability Standards should be:
 - affirmed (no changes needed);
 - revised (may include revising or retiring one or more requirements); or
 - withdrawn
- Initial Periodic Review Recommendations (PRRs) are posted for 45-day comment period
 - One PRR is posted for each of the three FAC standards in the project
- Standards Committee acts on final PRRs
 - Affirmed recommendation submitted to NERC Board
 - Revise or withdrawn recommendation results in PRT developing a Standard Authorization Request (SAR)

- Considerations during periodic review :
 - Federal Energy Regulatory Commission (FERC) directives
 - Stakeholder requests for clarity or revision
 - Results-Based Standards (RBS) principles
 - Paragraph 81 principles
 - Definitions
 - Compliance elements
 - Consistency with other Reliability Standards
 - Independent Expert Report recommendations

Position	Participant	Entity
Chair	Jason Smith	Southwest Power Pool
Vice Chair	Vic Howell	Peak Reliability
Member	Dede Subakti	California Independent System Operator
Member	David Bueche	CenterPoint Energy Houston Electric
Member	Ruth Kloecker	ITC Holdings
Member	David Hislop	PJM Interconnection
Member	Dean LaForest	ISO New England
Member	Aaron Staley	Orlando Utilities Commission
Member	Baj Agrawal	Arizona Public Service Company
Member	Linwood Ross	Duke Energy
Member	Michael Steckelberg	Great River Energy

- The purpose of FAC-010-3 is:

To ensure that System Operating Limits (SOLs) used in the reliable planning of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.

- FAC-010 requires the Planning Coordinator to have a SOL methodology that provides for acceptable BES performance
- Few changes have been made to the standard since version 2 was adopted in 2008

- PRT is seeking stakeholder comment on PRR to retire FAC-010-3
- Requirements for Planning Coordinators to have an SOL methodology provide little or no reliability benefit
 - TPL-001-4 specifies planning and BES performance criteria for various conditions and contingencies
 - SOLs determined in accordance with FAC-010-3 methodologies are not a necessary input to the planning process
 - New or revised requirements may be needed in other reliability standards such as FAC-014 to provide for continuity and flow of reliability information from the PC to the Reliability Coordinator (RC).

- The purpose of FAC-011-3 is:

To ensure that System Operating Limits (SOLs) used in the reliable operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.

- FAC-011 requires the RC to have an SOL methodology that provides for acceptable BES performance
- Few changes have been made to the standard since version 2 was adopted in 2008

- The purpose of FAC-014-2 is:

To ensure that System Operating Limits (SOLs) used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.

- FAC-014 requires the establishment and communication of SOLs and Interconnection Reliability Operating Limits (IROL)

- PRT is seeking stakeholder comment on PRRs to revise FAC-011 and FAC-014

Issues to address:

- Presumptions in FAC-011-3 and FAC-014-2 do not fit with today's operational paradigm
- Improve alignment with proposed TOP and IRO standards and with the NERC SOL White Paper
- Inconsistent application and confusion with the *System Operating Limit (SOL)* defined term
- Unclear requirements or gaps in responsibility for determining some limits
- FERC directive

- FAC-011-3 and FAC-014-2 presumes operational paradigm:
 - Perform study ahead of time to establish an SOL that achieves acceptable BES system performance per FAC-011-3 R2 and subparts
 - Communicate and coordinate SOL with operators and other impacted entities prior to implementation
 - Operate below the SOL with the presumption that doing so will result in acceptable pre- and post-contingency system performance in real-time
- Many entities establish SOLs and determine acceptable system performance in real-time
- These standards should not presume operations paradigms, and should allow entities more flexibility in determining how to achieve the ultimate reliability objective of maintaining pre- and post-contingency acceptable system performance in real-time

- Principles in new TOP/IRO Reliability Standards
 - Study the system ahead of time through outage coordination process and Operational Planning Analysis (IRO-017-1, TOP-002-4 R1, IRO-008-2 R1)
 - Create and communicate Operating Plans based on studies (TOP-002-4 R2-R7, IRO-008-2 R2 & R3)
 - Perform Real-time Assessments (TOP-001-3 R13, IRO-008-2 R4)
 - Prevent/mitigate SOL exceedance in accordance with Operating Plan (TOP-001-3 R13 & others, IRO-008-2 R5 & R6)
 - *Operational Planning Analysis, Operating Plans, and Real-time Assessment* provide the framework for operating within limits in both pre- and post-contingency states
 - Misalignment between FAC standards and these principles

- Much confusion with – and many widely varied interpretations and applications of – the SOL term
 - Project 2014-03 developed White Paper to promote clarity, consistency, and a common understanding of the concepts associated with establishing SOLs, exceeding SOLs, and implementing Operating Plans to prevent and mitigate SOL exceedance.
 - White Paper served as a context for new TOP/IRO standards
- A revised definition of SOL and new defined term *SOL Exceedance* are proposed to improve clarity and alignment with proposed TOP and IRO standards and NERC SOL White Paper
- Revised TOP and IRO standards are pending regulatory approval

NERC SOL White Paper: [SOL Definition and Exceedance Clarification](#)

PRT White Paper: [Rationale for Revising the Definition of SOL](#)

- Currently-approved standards do not adequately address establishing voltage limits for use in operations.
- Specific functional entity responsibility for determining and communicating each type of SOL should be delineated
 - Facility Rating
 - Voltage limits
 - Voltage Stability Limits
 - Transient Stability Limits
- Consider writing system performance requirements directly into the continent-wide Reliability Standards instead of requiring the RC's methodology to specify acceptable system performance as currently required by FAC-011-3. (Similar to TPL-001-4 Table 1)

- In Order No. 777 approving FAC-003-1, the Commission directed:
“NERC should establish a clearly defined communication structure to assure that IROLs and changes to IROL status are timely communicated to transmission owners.” (P. 42)
- Revised FAC-014 standards should include Transmission Owners among entities to receive information on IROL Facilities



Stakeholder Comments

- Do you agree that the proposed retirement of FAC-010 is justified and does not create a reliability gap?

- Do you agree with the PRT's proposal to revise FAC-011 and FAC-014?

- Do you agree that a FAC standards project should develop revisions to the definition of *SOL* and develop a new defined term *SOL Exceedance*?

- Provide any additional comments for the PRT to consider.

- Draft recommendations and supporting material are posted for 45-day comment period from May 4 – June 17, 2015
- Comment review and SAR development will begin in June 2015

Project Page: <http://www.nerc.com/pa/Stand/Pages/Project-2015-03-Periodic-Review-of-System-Operating-Limit-Standards.aspx>



Questions and Answers