

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Industry Webinar

Project 2015-09 Establish and Communicate System
Operating Limits

April 13, 2020

RELIABILITY | RESILIENCE | SECURITY



- Presenters
 - Standard Drafting Team
 - Chair, Dean LaForest, ISO New England
 - Member, Stephen Solis, ERCOT
 - NERC Staff
 - Latrice Harkness
- Administrative Items
- Project 2015-09 Status
- Proposed Revisions
- Next Steps
- Questions and Answers

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- **For the official record**
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 - Comments must be submitted during the formal posting

Name	Organization/ Company
Dean LaForest (Chair)	ISO New England
Hari Singh (Vice Chair)	Xcel Energy
Samuel Jager	Independent Electricity System Operator
Thomas Leslie	Georgia Transmission Corp
Stephen Solis	Electric Reliability Council of Texas
Aaron Staley	Orlando Utilities Commission
Dede Subakti	California ISO

- Since the last posting (date inserted), the drafting team has been revising FAC-011, 014 and 015 based upon comments from the most recent posting
- The SDT has been working with an industry focus group from the MISO footprint based upon well described, common concerns with the most recent posting
- The last SDT face-to-face meeting (Jan 2020) yielded a set of revised standards that the group accepted (including the new industry focus group)
- Teleconferences and WebEx's since that time have focused on document prep for a late April posting for industry comment

- NERC Project 2015-09 Establish and Communicate System Operating SOLs (FAC SDT) is modifying FAC standards that address SOLs and IROLs.
- Primary objective is to align the FAC standards with existing IRO, TOP, and TPL standards as well as new definitions for Operational Planning Analysis and Real-time Assessment.
- Two formal ballots - the proposed FAC standards have yet to pass.
- SAR is broadly written to allow impacted standards to be modified.
 - For example, the SDT is modifying several standards in response to the proposed retirement of FAC-010-3.

- FAC-011 – significant changes since last posting
 - Combined Requirement R3 sub-requirements 3.5, 3.6 and 3.7 into one sub-requirement 3.5
 - Revised sub-requirement 4.2 to focus only on the more severe stability impacts
 - Revised sub-requirement to allow for different contingency lists to determine stability and steady state system impacts
 - Revised Requirement R6 and its sub-requirements based upon significant industry comment
 - Made changes in TOP-001 and IRO-008 (see below) to reference this framework for determining SOL exceedances

- FAC-011 – significant changes since last posting
 - Added new Requirement 7 that requires risk-based methods be included in the SOL Methodology to be used by the Reliability Coordinator (RC) and Transmission Operators (TOPs) when determining and communicating SOL exceedances
 - Addresses existing SOL exceedance communication requirements in TOP-001 and IRO-008

- FAC-011
 - Revised the two sub-requirements in Requirement R8 into one
- FAC-014 – significant changes since last posting
 - Revised purpose of FAC-014 and included Planning Assessment criteria be coordinated with System Operating Limit Methodologies
 - Revision to simplify / improve Requirement R3 and R4
 - Revision to sub-requirements 5.1 and R5.2 based upon comments
 - Added Transmission Planners as recipients of data from RC per requirement R5
 - Removed proposed Requirement R6, which required use of Requirement R6 from proposed FAC-011-4 to determine SOL exceedances
 - Replaced by new Requirements in TOP-001 and IRO-008 to use the RC’s SOL methodology, and the new framework for determining SOL exceedances, per numerous industry comments (see below for proposed TOP-001 and IRO-008 changes)
 - FAC-015 withdrawn and replaced with new Requirement R6 in FAC-014

- FAC-014 – continued
 - New requirement R6 – requires Planning Coordinator (PC) and Transmission Planner (TP) to implement a process
 - The process documents how the PCs and TPs use Facility Ratings, Voltage Limits and Stability Criteria that are at least as conservative as those used in Operations
 - Exception allowances exist to describe cases where planning ratings and criteria are less conservative than those used in operations
 - Based on FERC staff comments, this provision is required to allow retirement of FAC-010

- Added new requirement R7 – requires PCs and TPs to identify Corrective Action Plans developed to address any instability identified in its Planning Assessment of the Near-Term Transmission Planning Horizon to RCs and TOPs
 - Sub-requirements include added information to fully describe the instability conditions
 - Considered by SDT complimentary to removing FAC-010 and replacing the Planning responsibilities in existing R5 and R6 in current FAC-014-2

- Per proposed FAC-011-4 Requirement R6, if a TOP's Real-Time Assessment (as part of RTCA) indicates that a Contingency is expected to result in a Facility exceeding its Emergency Rating, an SOL is being exceeded.
- TOP-001-4 Requirements R14 and R15 states the following:
 - *R14. Each Transmission Operator shall initiate its Operating Plan to mitigate a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment.*
 - *R15. Each Transmission Operator shall inform its Reliability Coordinator of actions taken to return the System to within limits when a SOL has been exceeded.*

- New Requirement R6 in FAC-011-4 provides clear, consistent framework for SOL exceedance determination across industry
- New Requirement R25 in TOP-001-6 requires RC's SOL methodology to be used by the TOP to determine SOL exceedances
- New Requirement R7 in FAC-011-4 provides consistent, documented method for communicating SOL exceedances, as indicated in TOP-001-6 Requirement R15, between RCs and TOPs
- Revised measure for Requirement R14 provides other examples that may be used to document actions taken per the requirement

- TOP-001

- *M14. Each Transmission Operator shall have evidence that it initiated its Operating Plan for mitigating SOL exceedances identified as part of its Real-time monitoring or Real-time Assessments. This evidence could include but is not limited to dated computer logs showing times the Operating Plan was initiated, dated checklists, or other evidence. **Other evidence could include but is not limited to: Reliability Coordinator's SOL Methodology, system logs/records showing successfully mitigated SOL exceedances in conjunction with Operating Plans (e.g. mutually agreed operating protocols between TOPs and their Reliability Coordinator, Operating Procedures, Operating Processes, operating policies, generator redispatch logs, equipment settings for automatically switched equipment and reactive power/voltage control devices, switching schedules, etc.).***

- TOP-001 - continued
 - *R15. Each Transmission Operator shall inform its Reliability Coordinator of actions taken to return the System to within limits when a SOL has been exceeded **in accordance with its Reliability Coordinator's SOL Methodology.***
 - *M15. Each Transmission Operator shall make available evidence that it informed its Reliability Coordinator of actions taken to return the System to within limits when a SOL was exceeded **in accordance with its Reliability Coordinator's SOL Methodology.** Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts. If such a situation has not occurred, the Transmission Operator may provide an attestation.*
 - ***R25. Each Transmission Operator shall use the applicable Reliability Coordinator's SOL methodology when determining SOL exceedances for Real-time Assessments, Real-time Monitoring, and Operational Planning Analysis.***

- IRO-008

- R5. Each Reliability Coordinator shall notify, *in accordance with its SOL Methodology*, impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the results of a Real-time Assessment indicate an actual or expected condition that results in, or could result in, a System Operating Limit (SOL) *exceedance* or an Interconnection Reliability Operating Limit (IROL) exceedance within its Wide Area.
- R6. Each Reliability Coordinator shall notify, *in accordance with SOL Methodology*, impacted Transmission Operators and Balancing Authorities within its Reliability Coordinator Area, and other impacted Reliability Coordinators as indicated in its Operating Plan, when the System Operating Limit (SOL) or Interconnection Reliability Operating Limit (IROL) exceedance identified in Requirement R5 has been prevented or mitigated.

- IRO-008 - continued
 - *R7. Each Reliability Coordinator shall use its SOL Methodology when determining SOL exceedances when Real-time Assessments, Real-time Monitoring, and Operational Planning Analysis.*

- The SDT firmly believes that proposed FAC-011-4 Requirement R6 improves reliability by providing an industry-wide framework for SOL exceedance determination found in the NERC SOL White Paper.
- Proposed FAC-011-4 Requirement R6 also maps to the currently effective FAC-011-3 Requirement R2 and subparts – so Requirement R6 is a critical component of FAC-011-4.
- The SDT believes these changes, coupled with the changes made in TOP-001 and IRO-008, per industry comment, improve on prior postings and allow most sound SOL exceedances practices to continue with little modification to practices.

The FAC SDT proposes clarifying modifications to the following standards to address the potential impacts on SOL exceedance determinations and resulting documentation and communication needs:

- IRO-008-2
 - Requirement R5 and associated measure M5
 - Requirement R6 and associated measure M6
 - New Requirement R7
- TOP-001-4
 - Measure M14
 - Requirement R15 and associated measure M15
 - Compliance evidence retention for Requirement R14
 - New Requirement R25

- Requirement allows RCs to set risk basis for SOL exceedances, which is then shared with its TOPs via inclusion in the SOL methodology. Certain higher risk SOL exceedances (IROLs, non-IROL stability limits and other higher risk SOLs) have to be communicated.
- Mechanism allows TOPs to mitigate lower risk SOL exceedances within a certain timeframe (not to exceed 30 minutes) without being required to communicate the lower risk SOL exceedance and its mitigation actions to its RC.
- Allows operators to focus on mitigating the SOL exceedance rather than after the fact communications.
- This provision would be accomplished through a requirement in FAC-011-4 and corresponding modifications to IRO-008-3 and TOP-001-6.

- Posting
 - [Project Page 2015-09](#)
 - 45-day comment period and formal ballot in late April 2020
- Point of contact
 - Latrice Harkness, Senior Standards Developer
 - Latrice.Harkness@nerc.net or call 404-446-9728
- Webinar posting
 - 48-72 hours
 - Standards Bulletin



Questions and Answers