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Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before this set of standards can be implemented.

[FAC-010 — System Operating Limits Methodology for the Planning Horizon](#)
[FAC-011 — System Operating Limits Methodology for the Operations Horizon](#)
[FAC-014 — Establish and Communicate System Operating Limits](#)

Retirement Revision to Sections of Version 0 Approved Standards and Definitions

[TOP-002-0 — Normal Operations Planning, and TOP-004-0 — Transmission Operations need to be revised to add language to clarify that entities must operate to withstand not only the next single contingency, but also to withstand a stability-related multiple contingency.](#)

~~Several One~~ requirements ~~contained~~ in the proposed set of Standards addresses the same or similar performance objectives as [TOP-004-0 — Transmission Operations Requirement 6, sections of Version 0 Standards FAC-004, FAC-005 and TOP-004.](#) To eliminate duplication and minimize confusion, the following Version 0 requirements ~~and associated Measures~~ should be retired when this set of proposed standards is adopted. ~~Justification for these retirements is provided in the tables on the following pages.~~

TOP-004 ~~___~~ — Transmission ~~Security~~Operations

- Retire the following requirements coincident with the implementation of FAC-011:
 - R6.1
 - R6.5

Note that if the proposed standards are approved and adopted, then the following Version 0 Definitions will also be replaced:

- Cascading
- Interconnection Reliability Operating Limit (IROL)

[A red line version of each of these standards showing the proposed changes has been posted at the following site:](#)

<http://www.nerc.com/~filez/standards/Determine-Facility-Ratings.html>

Balloting

[The drafting team recommends that this group of three standards be balloted with a single ballot.](#)

TOP-004-0	FAC-011-1
<p>R 6. Transmission Operators, individually and jointly with other Transmission Operators, shall develop, maintain, and implement formal policies and procedures to provide for transmission reliability. These policies and procedures shall address the execution and coordination of activities that impact inter- and intra-Regional reliability, including:</p> <p>R 6.1. Equipment ratings.</p> <p>R 6.21. Monitoring and controlling voltage levels and real and reactive power flows.</p> <p>R 6.32. Switching transmission elements.</p> <p>R 6.43. Planned outages of transmission elements.</p> <p>R 6.5. Development of IROs and SOLs.</p> <p>R.6.64. Responding to IROL and SOL violations.</p>	<p>R1.The Reliability Coordinator shall ensure that SOLs, including Interconnection Reliability Operating Limits (IROs), for its Reliability Coordinator Area are established and that the SOLs (including Interconnection Reliability Operating Limits) are consistent with its SOL Methodology.</p> <p>R2.The Transmission Operator shall establish SOLs (as directed by its Reliability Coordinator) for its portion of the Reliability Coordinator Area that are consistent with its Reliability Coordinator’s SOL Methodology.</p> <p>R5.—The Reliability Coordinator, Planning Authority, and Transmission Planner shall each provide its SOLs and IROs to those entities that have a reliability related need for those limits and provide a written request that includes a schedule for delivery of those limits as follows:</p> <p>R5.1—The Reliability Coordinator shall provide its SOLs (including the subset of SOLs that are IROs) to adjacent Reliability Coordinators and Reliability Coordinators who indicate a reliability related need for those limits, and to the Transmission Operators, Transmission Service Providers and Planning Authorities within its Reliability Coordinator Area. For each IROL, the Reliability Coordinator shall provide the following supporting information:</p> <p>R5.1.1—Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the IROL.</p> <p>R5.1.2—The value of the IROL and its associated T_v.</p> <p>R5.1.3—The associated Contingency(ies).</p> <p>R5.1.4—The type of limitation represented by the IROL (e.g., voltage collapse, angular stability).</p> <p>R5.2—The Transmission Operator shall provide any SOLs it developed to its Reliability Coordinator and to the Transmission Service Providers that share its portion of the Reliability Coordinator Area.</p>

Comparison of V0 to V1:

- ~~—TOP-004 Requirement 6.1 requires the TOP to develop policies and procedures that address the execution and coordination of equipment ratings. However, under the Functional Model, the Transmission Owner is not responsible for establishing equipment ratings or for distributing those ratings. The Functional Model clearly assigns responsibility for establishing Facility Ratings to the Facility Owners— and Facility Ratings are derived from equipment ratings. Assuming that Requirement 6.1 is requiring the sharing of these ratings, R6.1 is replaced with FAC-009 which requires the Facility Owner to share its Facility Ratings with other entities that have a reliability-related need for those ratings, which includes RCs and TOPs.~~
- ~~—The need to document the methodology used to develop SOLs (as well as the subset of SOLs that are classified as IROLs) used in the operating horizon is addressed in FAC-010 Requirement 1. The need to develop and share SOLs with other entities that have a reliability-related need for those SOLs is addressed in FAC-011 Requirement 1, Requirement 2, and Requirement 5.~~
- ~~—The elimination of Requirement 6.5 shifts the responsibility for developing IROLs to the RC and assigns responsibility for developing IROLs and SOLs to the RC with assistance, as appropriate, for developing SOLs from the TOP.~~

Compliance with Standard

Standard	Functions That Must Comply With the Associated Requirements			
	Reliability Coordinator	Planning Authority	Transmission Planner	Transmission Operator
FAC-010 System Operating Limits Methodology <u>for the Planning Horizon</u>	✗	X		
<u>FAC-011</u> <u>System Operating Limits Methodology for the Operations Horizon</u>	<u>X</u>			
FAC-011 <u>014</u> Establish and Communicate System Operating Limits	X	X	X	X

Phased-in Compliance

The following table identifies the ~~implementation date and the earliest compliance~~effective date for each requirement.

The ~~implementation-effective~~ date is the date entities are expected to ~~begin-meeting~~ing the performance identified in this standard. ~~Note that entities have been given several months beyond the BOT adoption date. Additional time~~ (preparation time) ~~has been added to give entities time needed~~ to fully comply with the requirements. ~~The justification for the difference between effective dates and compliance dates is in the tables on the following pages:~~

Standard	Full Compliance Date
<p>FAC-010</p> <p>-System Operating Limits Methodology <u>for the Planning Horizon</u></p>	<p>-<u>Six months after BOT adoption for all requirements. This will give entities time to assemble the documentation needed to demonstrate compliance.</u></p>
<p><u>FAC-011</u></p> <p><u>System Operating Limits Methodology for the Operations Horizon</u></p>	<p><u>Nine months after BOT adoption for all requirements. This will give entities time to assemble the documentation needed to demonstrate compliance. It will also give the Reliability Coordinator time to develop a process for A process for determining which of the stability limits associated with the list of multiple contingencies (provided by the Planning Authority in accordance with FAC-014 Requirement 6) are applicable for real-time use given the real-time system conditions.</u></p>
<p>FAC-014<u>014</u></p> <p>Establish and Communicate System Operating Limits</p>	<p><u>July 1, 2006</u></p> <p><u>8-12 months after BOT adoption for all requirements. This will give entities three months beyond the date of issuance of SOL methodologies to begin developing and communicating SOLs in accordance with those methodologies.</u> #</p>

FAC-010— System Operating Limits Methodology	
Measures	Preparation
M1.— The Reliability Authority and the Planning Authority’s SOL Methodology shall each include a statement that Facility Ratings shall not be exceeded and shall address all of the items listed in Reliability Standard FAC-010 Requirement 3 through Requirement 5.	Although Reliability Coordinators and Planning Authorities are, and have been, following some sort of methodology (ies), many may not have fully documented the “rules” that are being used and some of the rules may be based simply on individual judgment. The SDT recommends 6 months for the Authorities to verify the completeness of their methodology (ies) and to formalize and obtain approval for their documents.
M2.— The Reliability Authority shall have evidence it issued its SOL Methodology, and any changes to that methodology, including the date they were issued, in accordance with FAC-010 Requirement 6.	The Reliability Coordinator should be able to issue its methodology as soon as it is formalized. Therefore the SDT recommends that the same 6 month grace period be applied to this measurement as with FAC-010 M1.
M3.— The Planning Authority shall have evidence it issued its SOL Methodology and any changes to that methodology, including the date they were issued, in accordance with FAC-010 Requirement 7.	The Planning Authority should be able to issue its methodology as soon as it is formalized. Therefore the SDT recommends that the same 6 month grace period be applied to this measurement as with FAC-010 M1.
M4.— If the recipient of the SOL Methodology provides documented comments on its technical review of that SOL methodology, the Reliability Authority or Planning Authority that distributed that SOL Methodology shall have evidence that it provided a written response to that commenter within 45 calendar days of receipt of those comments. The response shall indicate whether a change will be made to the SOL Methodology and, if no change will be made to that SOL Methodology, the reason why.	This is a new measure and entities may want to have some time to form a strategy for responding to any comments that may be submitted on their SOL Methodology. The SDT recommends a grace period of 6 months to implement this measure

FAC-011 — Establish and Communicate System Operating Limits	
Measures	Preparation
<p>M1. The Reliability Authority, Planning Authority, Transmission Operator, and Transmission Planner shall each be able to demonstrate that it developed its SOLs (including the subset of SOLs that are IROLs) consistent with the applicable SOL Methodology.</p>	<p>Although Reliability Coordinators, Transmission Operators, Planning Authorities and Transmission Planners are, and have been, establishing System Operating Limits, it may not be possible to prove consistency with a methodology since some methodologies may not have been fully documented and some of the “rules” used may be based simply on individual judgment.</p> <p>Since the entities performing these Functions are required to have a compliant methodology in place 8 months after Board adoption of this Standard, the SDT assumes that during the process of documenting the methodology, the individuals who are calculating the limits will be involved and will be verifying that the methodology does in fact work. This work will establish, at a minimum, a baseline of SOLs as well as a procedure to calculate any remaining limits. The SDT believes that this parallel work will allow entities to establish all its limits very close to the time that the methodology is approved.</p>
<p>M2. The Reliability Authority, Planning Authority, Transmission Operator, and Transmission Planner shall each have evidence that its SOLs (including the subset of SOLs that are IROLs) were supplied in accordance with schedules supplied by the requestors of such SOLs.</p>	<p>This is not currently required and may take some time to achieve. The SDT recommends 8 months for various ‘requesting entities’ to establish and distribute schedules for providing SOLs and for entities that develop SOLs to begin providing the SOLs in accordance with those schedules.</p>