

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the Board of Trustees.

Description of Current Draft

<u>Completed Actions</u>	<u>Date</u>
<u>Standards Committee approved Standard Authorization Request (SAR) for posting</u>	<u>08/19/15</u>
<u>SAR posted for comment</u>	<u>08/20/15 – 09/21/15</u>
<u>Draft Reliability Standard posted for Informal Comment Period</u>	<u>07/14/16 – 08/12/16</u>

<u>Anticipated Actions</u>	<u>Date</u>
<u>45-day formal comment period with ballot</u>	<u>September 2017 – October 2017</u>
<u>45-day formal comment period with additional ballot</u>	<u>January 2018 – February 2018</u>
<u>10-day final ballot</u>	<u>February 2018</u>
<u>NERC Board (Board) adoption</u>	<u>May 2018</u>

A. Introduction

1. **Title:** Establish and Communicate System Operating Limits
2. **Number:** FAC-014-~~23~~
3. **Purpose:** 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.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1. Reliability Coordinator
 - ~~1.1. Planning Authority~~
 - ~~1.2. Transmission Planner~~
 - 4.1.2. Transmission Operator
 2. ~~Effective Date:~~ April 29, 2009
5. **Effective Date:** See Implementation Plan for Project 2015-09.

B. Requirements and Measures

The

- R1.** ~~Each~~ Reliability Coordinator shall ~~ensure that SOLs, including establish~~ Interconnection Reliability Operating Limits (IROLs), ~~for its Reliability Coordinator Area are in accordance with its System Operating Limit Methodology (SOL Methodology).~~ *[Violation Risk Factor: High] [Time Horizon: Operations Planning]*
- M1.** ~~Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation to demonstrate that the Reliability Coordinator established and that the SOLs (including Interconnection Reliability Operating Limits) are consistent~~ IROLs ~~in accordance with its~~ SOL Methodology.
- R2.** ~~The~~ ~~Each~~ Transmission Operator shall establish ~~SOLs (as directed by its Reliability Coordinator)~~ System Operating Limits (SOLs) for its portion of the Reliability Coordinator Area ~~that are consistent~~ in accordance with its Reliability Coordinator's SOL Methodology. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M2.** ~~Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation to demonstrate that the Transmission Operator established SOLs in accordance with its Reliability Coordinator's SOL Methodology.~~
- R1, R3.** ~~The~~ ~~Planning Authority~~ Transmission Operator shall establish SOLs, including IROLs, ~~for~~ ~~provide~~ its ~~Planning Authority Area that are consistent~~ SOLs to its Reliability Coordinator in accordance with its Reliability Coordinator's SOL Methodology. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]*

- M3.** ~~The Transmission Planner shall establish SOLs, including IROLs, for its~~ Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation to demonstrate that the ~~Transmission Planning Area that are consistent~~ Operator provided its SOLs in accordance ~~with its Planning Authority's Reliability Coordinator's SOL Methodology.~~
- R1.** ~~The Reliability Coordinator, Planning Authority, and Transmission Planner shall each provide its SOLs and IROLs 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:~~
- R4.** ~~The~~ Each ~~Reliability Coordinator shall provide its SOLs~~ establish stability limits to be used in operations when the limit impacts more than one Transmission Operator in its Reliability Coordinator Area in accordance with its SOL Methodology. [Violation Risk Factor: High] [Time Horizon: Operations Planning]
- M4.** Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation to demonstrate that the Reliability Coordinator established stability limits in accordance with Requirement R4.
- R5.** Each Reliability Coordinator shall provide: [Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]
- 5.1.** Each Planning Coordinator within its Reliability Coordinator Area, SOLs for its Reliability Coordinator Area (including the subset of SOLs that are IROLs) to adjacent Reliability Coordinators and Reliability Coordinators who indicate a reliability-related need for those limits, and to the Transmission Operators, Transmission Planners, Transmission Service Providers and at least once every twelve calendar months.
- 1.1.5.2.** ~~Each impacted Planning Authorities~~ Coordinator ~~within its Reliability Coordinator Area. For, the following information for each established stability limit and each established IROL, the Reliability Coordinator shall provide the following supporting information at least once every twelve calendar months:~~
- 5.2.1.** The value of the stability limit or IROL;
- 1.1.1.5.2.2.** ~~Identification and status of the associated Facility (or group of Facilities) that is (are) critical to the derivation of the~~ stability limit or IROL;
- 1.1.2.5.2.3.** ~~The value of the IROL and its associated~~ IROL T_v for any IROL;
- 1.1.3.5.2.4.** ~~The associated Contingency(ies); and~~
- 1.1.4.5.2.5.** ~~The type of limitation represented by the~~ stability limit or IROL (e.g., voltage collapse, angular stability).
- 5.3.** ~~The~~ Each impacted ~~Transmission Operator shall provide any SOLs it developed within its Reliability Coordinator Area, the value of the stability limits established pursuant to its Reliability Coordinator Requirement R4 and each IROL established pursuant to Requirement R1, in an agreed upon time frame~~

necessary for inclusion in the Transmission Service Providers that share its portion of the Operator's Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.

~~1-2-5.4.~~ Each impacted Transmission Operator within its Reliability Coordinator Area, the information identified in Requirement R5 Parts 5.2.2 – 5.2.5 for each established stability limit or each IROL, and any updates to that information within an agreed upon time frame necessary for inclusion in the Transmission Operator's Operational Planning Analyses.

~~R1.1.~~ The Planning Authority shall provide its SOLs (including the subset of SOLs that are IROLs) to adjacent Planning Authorities, and to Transmission Planners, Transmission Service Providers, Transmission Operators and Reliability Coordinators that work within its Planning Authority Area.

~~R1.2.~~ The Transmission Planner shall provide its SOLs (including the subset of SOLs that are IROLs) to its Planning Authority, Reliability Coordinators, Transmission Operators, and Transmission Service Providers that work within its Transmission Planning Area and to adjacent Transmission Planners.

~~R2.~~ The Planning Authority shall identify the subset of multiple contingencies (if any), from Reliability Standard TPL-003 which result in stability limits.

~~R2.1.~~ The Planning Authority shall provide this list of multiple contingencies and the associated stability limits to the Reliability Coordinators that monitor the facilities associated with these contingencies and limits.

~~R2.2.~~ If the Planning Authority does not identify any stability related multiple contingencies, the Planning Authority shall so notify the Each requesting Transmission Operator within its Reliability Coordinator.

A. Measures

~~5.5.~~ The Area, requested SOL information for its Reliability Coordinator, Planning Authority, Transmission Operator, and Transmission Planner shall each be able Area, on a mutually agreed upon schedule.

~~M4.~~ Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation to demonstrate that it developed its SOLs (including the subset of SOLs that are IROLs) consistent with the applicable SOL Methodology in accordance with Requirements 1 through 4.

~~M5.~~ The the Reliability Coordinator, 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 as specified in Requirement 5.

~~M6-M5.~~ The Planning Authority shall have evidence it identified a list of multiple contingencies (if any) and their associated stability limits and provided the list and the limits to its Reliability Coordinators information in accordance with Requirement 6R5.

R6. Each Reliability Coordinator that is impacted by an IROL shall provide Transmission Owners and Generation Owners within its Reliability Coordinator Area a list of Facilities owned by that entity that are critical to the derivation of the IROL. [Violation Risk Factor: High] [Time Horizon: Operations Planning]

M6. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation to demonstrate that the Reliability Coordinator provided the list of Facilities in accordance with Requirement R6.

C. Compliance

1. Compliance Monitoring Process

~~2.1. Compliance Monitoring Responsibility~~

~~Regional Reliability Organization~~

~~2.2. Compliance Monitoring Period and Reset Time Frame~~

~~The Reliability Coordinator, Planning Authority, Transmission Operator, and Transmission Planner shall each verify compliance through self-certification submitted to its Compliance Monitor annually. The Compliance Monitor may conduct a targeted audit once in each calendar year (January—December) and an investigation upon a complaint to assess performance.~~

~~The Performance Reset Period shall be twelve months from the last finding of non-compliance.~~

~~2.3. Data Retention~~

~~The Reliability Coordinator, Planning Authority, Transmission Operator, and Transmission Planner shall each keep documentation for 12 months. In addition, entities found non-compliant shall keep information related to non-compliance until found compliant.~~

~~The Compliance Monitor shall keep the last audit and all subsequent compliance records.~~

~~2.4. Additional Compliance Information~~

~~The Reliability Coordinator, Planning Authority, Transmission Operator, and Transmission Planner shall each make the following available for inspection during a targeted audit by the Compliance Monitor or within 15 business days of a request as part of an investigation upon complaint:~~

~~2.4.1 SOL Methodology(ies)~~

~~2.4.2 SOLs, including the subset of SOLs that are IROLs and the IROLs supporting information~~

~~2.4.3 Evidence that SOLs were distributed~~

~~2.4.4 Evidence that a list of stability related multiple contingencies and their associated limits were distributed~~

~~**2.4.5**—Distribution schedules provided by entities that requested SOLs~~

1.1. Compliance Enforcement Authority:

“Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The Reliability Coordinator or Transmission Operator shall keep data or evidence of Requirements R1 through R6 for the current year plus the previous 12 calendar months.

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels:

R #	Violation Severity Levels			
	Lower <u>VSL</u>	Moderate <u>VSL</u>	High <u>VSL</u>	Severe <u>VSL</u>
R1:	There are SOLs, for the Reliability Coordinator Area, but from 1% up to but less than 25% of these SOLs are inconsistent with the Reliability Coordinator's SOL Methodology. (R1) <u>N/A</u>	There are SOLs, for the Reliability Coordinator Area, but 25% or more, but less than 50% of these SOLs are inconsistent with the Reliability Coordinator's SOL Methodology. (R1) <u>N/A</u>	There are SOLs, for the Reliability Coordinator Area, but 50% or more, but less than 75% of these SOLs are inconsistent with the Reliability Coordinator's SOL Methodology. (R1) <u>N/A</u>	There are SOLs, <u>The Reliability Coordinator did not establish Interconnection Reliability Operating Limits (IROLS) for its Reliability Coordinator Area, but 75% or more of these SOLs are inconsistent in accordance with the Reliability Coordinator's System Operating Limit Methodology ("SOL Methodology" (R1)) as established in FAC-011-4.</u>
R2:	The Transmission Operator has established SOLs for its portion of the Reliability Coordinator Area, but from 1% up to but less than 25% of these SOLs are inconsistent with the Reliability Coordinator's SOL Methodology. (R2) <u>N/A</u>	The Transmission Operator has established SOLs for its portion of the Reliability Coordinator Area, but 25% or more, but less than 50% of these SOLs are inconsistent with the Reliability Coordinator's SOL Methodology. (R2) <u>N/A</u>	The Transmission Operator has established SOLs for its portion of the Reliability Coordinator Area, but 50% or more, but less than 75% of these SOLs are inconsistent with the Reliability Coordinator's SOL Methodology. (R2) <u>N/A</u>	The Transmission Operator has established <u>did not establish</u> SOLs for its portion of the Reliability Coordinator Area, but 75% or more of these SOLs are inconsistent <u>in accordance with its</u> Reliability Coordinator's SOL Methodology. (R2)
R3:	There are SOLs, for the Planning Coordinator Area, but from 1% up to, but less than,	There are SOLs, for the Planning Coordinator Area, but 25% or more, but less than 50%	There are <u>The Transmission Operator provided its</u> SOLs	There are SOLs, for the Planning Coordinator Area, but 75% or more of these SOLs are

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	25% of these SOLs are inconsistent with the Planning Coordinator's SOL Methodology. (R3)N/A	of these SOLs are inconsistent with the Planning Coordinator's SOL Methodology. (R3)N/A	for the Planning to its Reliability Coordinator Area, but 50% or more, but less than 75% of these did not provide its SOLs are inconsistent with the periodicity at which the Planning Coordinator's SOL Methodology. (R3)RC needs such information to perform its reliability functions.	inconsistent with the Planning Coordinator's SOL Methodology. (R3)The Transmission Operator did not provide its SOLs to its Reliability Coordinator.
R4.	The Transmission Planner has established SOLs for its portion of the Planning Coordinator Area, but up to 25% of these SOLs are inconsistent with the Planning Coordinator's SOL Methodology. (R4)N/A	The Transmission Planner has established SOLs for its portion of the Planning Coordinator Area, but 25% or more, but less than 50% of these SOLs are inconsistent with the Planning Coordinator's SOL Methodology. (R4)N/A	The Transmission Planner has established SOLs for its portion of the Reliability Coordinator Area, but 50% or more, but less than 75% of these SOLs are inconsistent with the Planning Coordinator's SOL Methodology. (R4)N/A	The Reliability Coordinator did not determine stability limits to be used in operations when the limit impacts more than one Transmission Planner has established SOLs for Operator in its portion of the Planning Reliability Coordinator Area, but 75% or more of these SOLs are inconsistent in accordance with the Planning Coordinator's SOL Methodology. (R4)
R5	The responsible entity provided its SOLs (including the subset of SOLs that are IROLs) to all the requesting entities but missed meeting one or more of the schedules by less than 15 calendar days. (R5)	One of the following: The responsible entity provided its SOLs (including the subset of SOLs that are IROLs) to all but one of the requesting	One of the following: The responsible entity provided its SOLs (including the subset of SOLs that are IROLs) to all but two of the requesting	One of the following: The responsible entity failed to provide its SOLs (including the subset of SOLs that are IROLs) to more than two of the requesting entities within 45

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	<p><u>The Reliability Coordinator did not provide one of the items listed in Requirement R5, Parts 5.1 through 5.5.</u></p>	<p>entities within the schedules provided. (R5) OR The responsible entity provided its SOLs to all the requesting entities but missed meeting one or more of the schedules for 15 or more but less than 30 calendar days. (R5) OR The supporting information provided with the IROLs does not address 5.1.4 <u>The Reliability Coordinator did not provide two of the items listed in Requirement R5, Parts 5.1 through 5.5.</u></p>	<p>entities within the schedules provided. (R5) OR The responsible entity provided its SOLs to all the requesting entities but missed meeting one or more of the schedules for 30 or more but less than 45 calendar days. (R5) OR The supporting information provided with the IROLs does not address 5.1.3 <u>The Reliability Coordinator did not provide three of the items listed in Requirement R5, Parts 5.1 through 5.5.</u></p>	<p>calendar days of the associated schedules. (R5) OR The supporting information provided with the IROLs does not address 5.1.1 and 5.1.2. <u>The Reliability Coordinator did not provide four or more of the items listed in Requirement R5, Parts 5.1 through 5.5.</u></p>
<p>R6 :</p>	<p>The Planning Authority failed to notify the Reliability Coordinator in accordance with R6.2 <u>N/A</u></p>	<p>Not applicable. <u>N/A</u></p>	<p>The Planning Authority identified the subset of multiple contingencies which result in stability limits but did not provide the list of multiple contingencies and associated limits to one Reliability Coordinator that monitors the Facilities associated with these limits. (R6.4) <u>N/A</u></p>	<p>The Planning Authority did not identify the subset of multiple contingencies which result in stability limits. (R6) OR The Planning Authority identified the subset of multiple contingencies which result in stability limits but did not provide the list of multiple contingencies and associated limits to more than one Reliability Coordinator that monitors the Facilities associated with these limits. (R6.4) <u>The Reliability Coordinator with an established IROL, or the</u></p>

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				<u>Reliability Coordinator impacted by a neighboring Reliability Coordinator IROL, did not provide Transmission Owners or Generation Owners within its Reliability Coordinator Area a list of Facilities owned by that entity that are critical to the derivation of the IROL.</u>
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D. Regional Differences Variations

None ~~identified.~~

E. Interpretations

None

F. Associated Documents

Implementation Plan

Version History

Version	Date	Action	Change Tracking
1	November 1, 2006	Adopted by Board of Trustees	New
2		Changed the effective date to January 1, 2009 Replaced Levels of Non-compliance with Violation Severity Levels	Revised
2	June 24, 2008	Adopted by Board of Trustees: FERC Order	Revised
2	January 22, 2010	Updated effective date and footer to April 29, 2009 based on the March 20, 2009 FERC Order	Update
2	April 29, 2015 – July 23, 2015	Incorrectly included TOP as the applicable function for Requirement R5. 7/23/15: Corrected to designate R5 as: RC, PA and TP.	Revised
<u>3</u>		<u>Project 2015-09 Adopt revised standard.</u>	<u>Revision</u>