



TEXAS RE



2024 SOL Standards

Blair Giffin
Senior O&P Compliance Engineer

November 2, 2023

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Notice of this meeting was posted on the Texas RE website and this meeting is being held in public. Participants should keep in mind that the listening audience may include members of the press, representatives from various governmental authorities, and industry stakeholders.



Upcoming Texas RE Events



November 9, 2023

Distributed Energy
Resources



November 29, 2023

Risk Assessment
Best Practices for
Self-Reports



November 30, 2023

O&P Practice Guide
Review



Upcoming ERO Events



November 7, 2023

Grid Fundamentals
Webinar



November 8-9, 2023

Fall Compliance and
Reliability Conference



November 13, 2023

Technical Talk with RF



#TXRE

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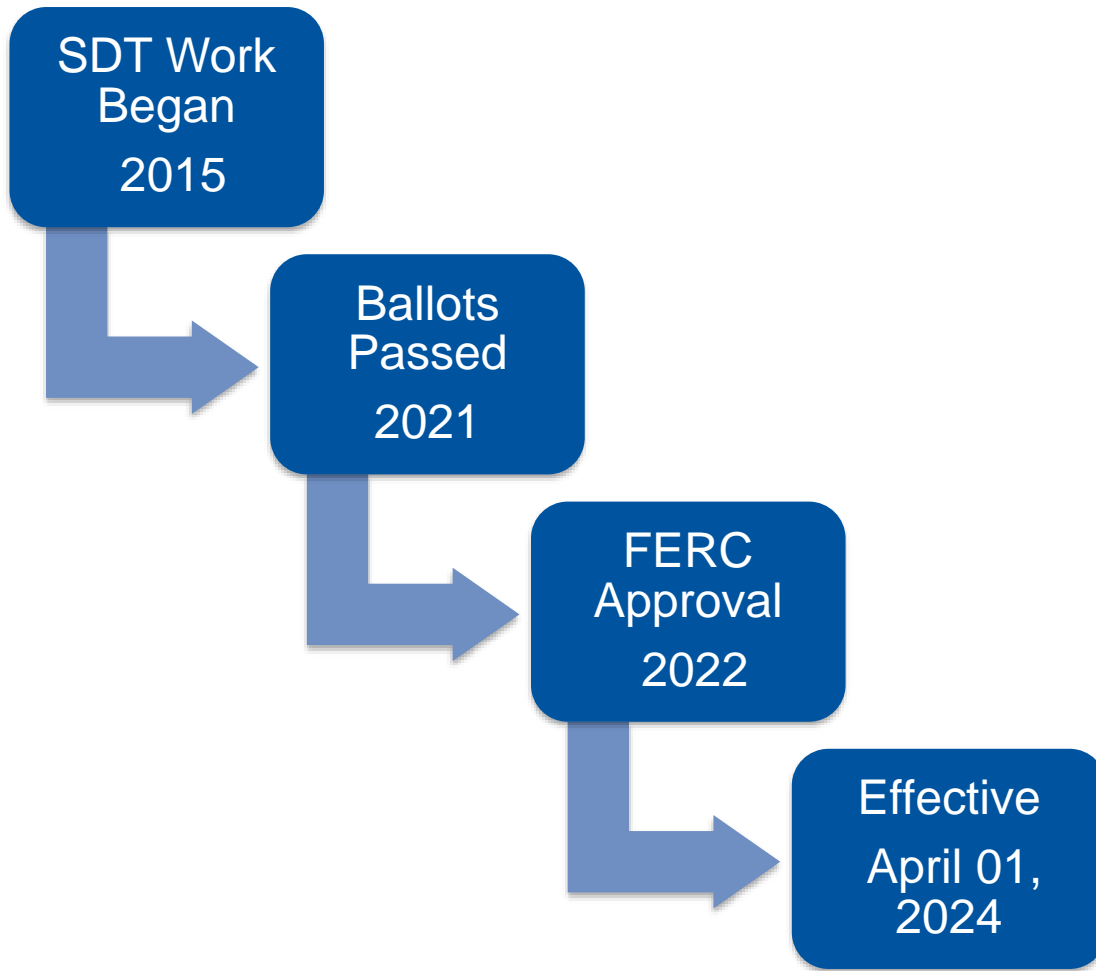
talk with
TEXAS RE

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Project 2015-09 Timeline



Acronym Guide

09/22/2022	NSRF Meeting
10/06/2022	Monitoring and Situational Awareness Technical Conference
10/20/2022	NSRF Meeting
10/20/2022	Monitoring and Situational Awareness Technical Conference
10/27/2022	Fall Standards, Security, and Reliability Workshop
11/08/2022	Talk with Texas RE: CIP-008
11/09/2022	NERC Board of Trustees Meeting
11/09/2022	Energy Industry Vendors Summit
11/10/2022	NERC Board of Trustees Meeting
11/17/2022	NSRF Meeting
12/01/2022	Talk with Texas RE: Virtualization BCSI in the Cloud
12/08/2022	Talk with Texas RE: Certification



News



Align Page

Electric Reliability Acronym Guide

MRO
Midwest Reliability Organization

RE
Reliability First

NPCC
Northeast Power Coordinating Council

SERC
SERC Reliability Corporation

WECC
Western Electric Coordinating Council

Texas RE
Texas Reliability Entity, Inc.

NERC
North American Electric Reliability Corporation

Registered Functions

- BA** Balancing Authority
- DP** Distribution Provider
- DP-UFLS** Distribution Provider UFLS
- FRSG** Frequency Response Sharing Group
- GO** Generator Owner
- GOP** Generator Operator
- PA** Planning Authority
- PC** Planning Coordinator
- RC** Reliability Coordinator
- RP** Resource Planner
- RRSG** Regulatory Reserve Sharing Group
- TO** Transmission Owner
- TOP** Transmission Operator
- TP** Transmission Planner
- TSP** Transmission Service Provider

Reliability Standards

- BAL** Resource and Demand Balancing
- CIP** Critical Infrastructure Protection
- COM** Communications
- EOP** Emergency Preparedness and Operations
- FAC** Facilities Design, Connections, and Maintenance
- INT** Interchange Scheduling and Coordination
- IRO** Interconnection Reliability Operations and Coordination
- MOD** Modeling, Data, and Analysis
- NUC** Nuclear
- PER** Personnel Performance, Training, and Qualifications
- PRC** Protection and Control
- TOP** Transmission Operations
- TPL** Transmission Planning
- VAR** Voltage and Reactive

Helpful Links

- [Texas RE Info Sheet](#)
- [Acronym Guide](#)
- [Mailing List](#)
- [Texas RE Welcome Packet](#)
- [Ethics Hotline](#)
- [Texas RE Extranet Instructions](#)
- [WebCDMS](#)

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New Defined Terms (Effective 4/1/2024)

System Operating Limit (SOL)

All Facility Ratings, System Voltage Limits and stability limits, applicable to specified System configurations, used in bulk electric system operations for monitoring and assessing pre-and post-Contingency operating states.

System Voltage Limit

The maximum and minimum steady-state voltage limits (both normal and emergency) that provide for acceptable System performance.



Project 2015-09

<https://www.nerc.com/pa/Stand/Pages/Project-2015-09-Establish-and-Communicate-System-Operating-Limits.aspx>

IRO-008

TOP-001

PRC-026

PRC-002

FAC-011

FAC-014

FAC-003

PRC-023

Standards Governance Committees Program Areas & Departments Standards Initiatives Reports Filings

Home > Program Areas & Departments > Standards > Project 2015-09 Establish and Communicate System Operating Limits

Project 2015-09 Establish and Communicate System Operating Limits

Related Files

Status

Board Adopted: May 13, 2021

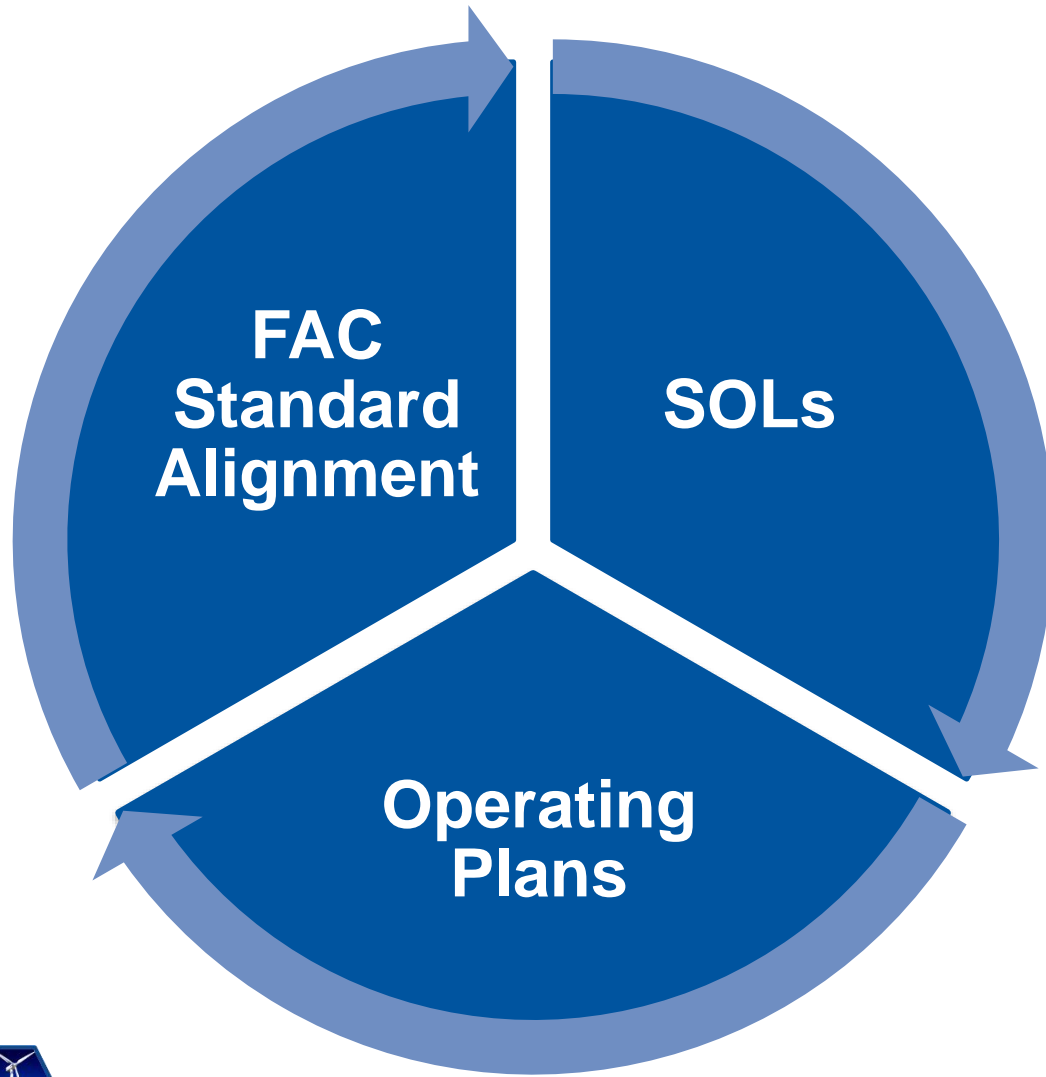
Filed with FERC: June 28, 2021

Background

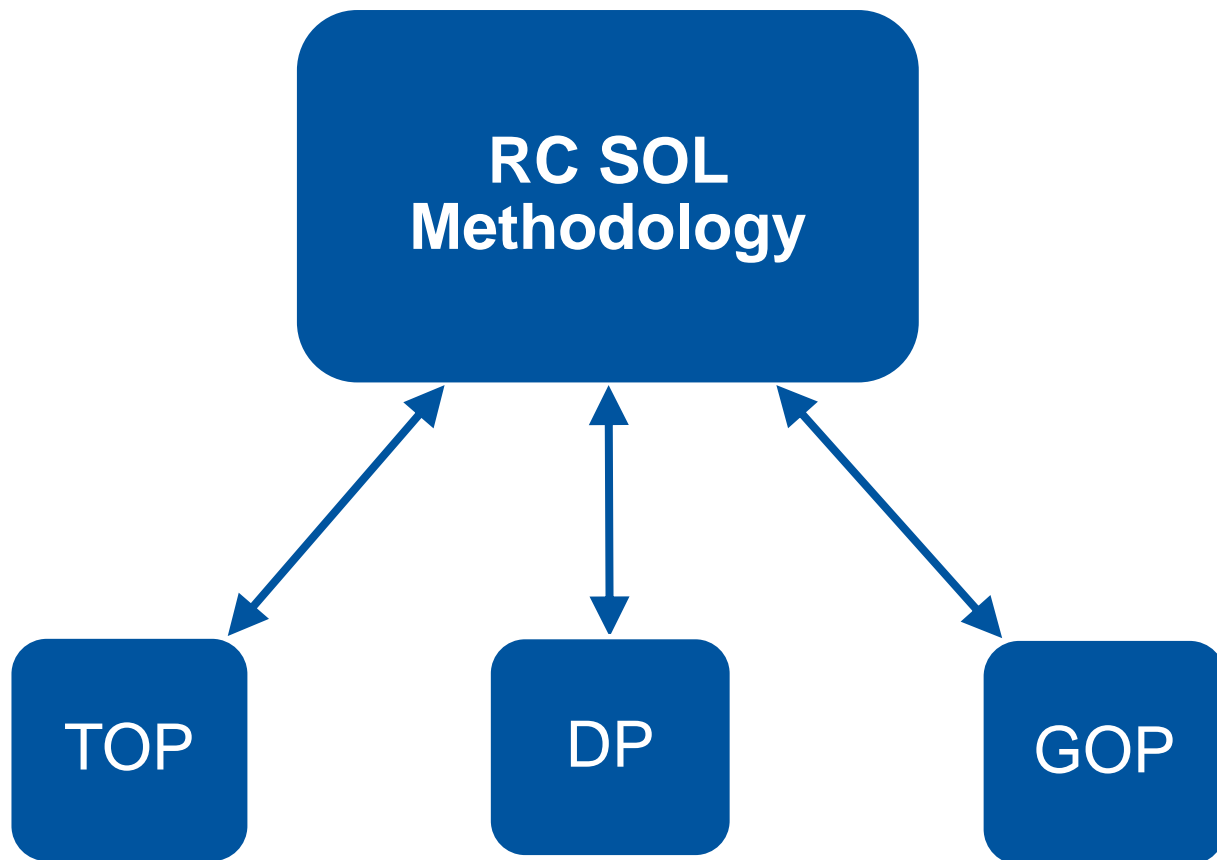
Facilities Design, Connections, and Maintenance (FAC) standards fulfill an important reliability objective for determining and communicating planning and operation of the Bulk Electric System (BES). This project will revise requirements for determining and communicating standards by eliminating overlap with approved Transmission Planning (TPL) requirements, enhancing consistency with existing standards, and addressing issues with determining and communicating SOLs and Interconnection




Project 2015-09 Focus



IRO-008-5 and TOP-001-6



FAC-011-4 – SOL Methodology for the Ops Horizon



<p>Requires RCs to have a documented SOL methodology</p>	<p>Methodology shall specify stability performance criteria, including margins applied</p>	<p>Criteria shall include</p> <ul style="list-style-type: none">• Steady-state voltage stability• Transient voltage response• Angular stability• System damping
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FAC-014-3 - Establish and Communicate SOLs

The RC SOL methodology shall establish

- IROLs
- Stability limits

TOP shall establish SOLs for its portion and provide them to the RC

RC to provide SOLs and IROLs

- Once every 12 calendar months



FAC-003-5 – Transmission Vegetation Management

200kV or higher

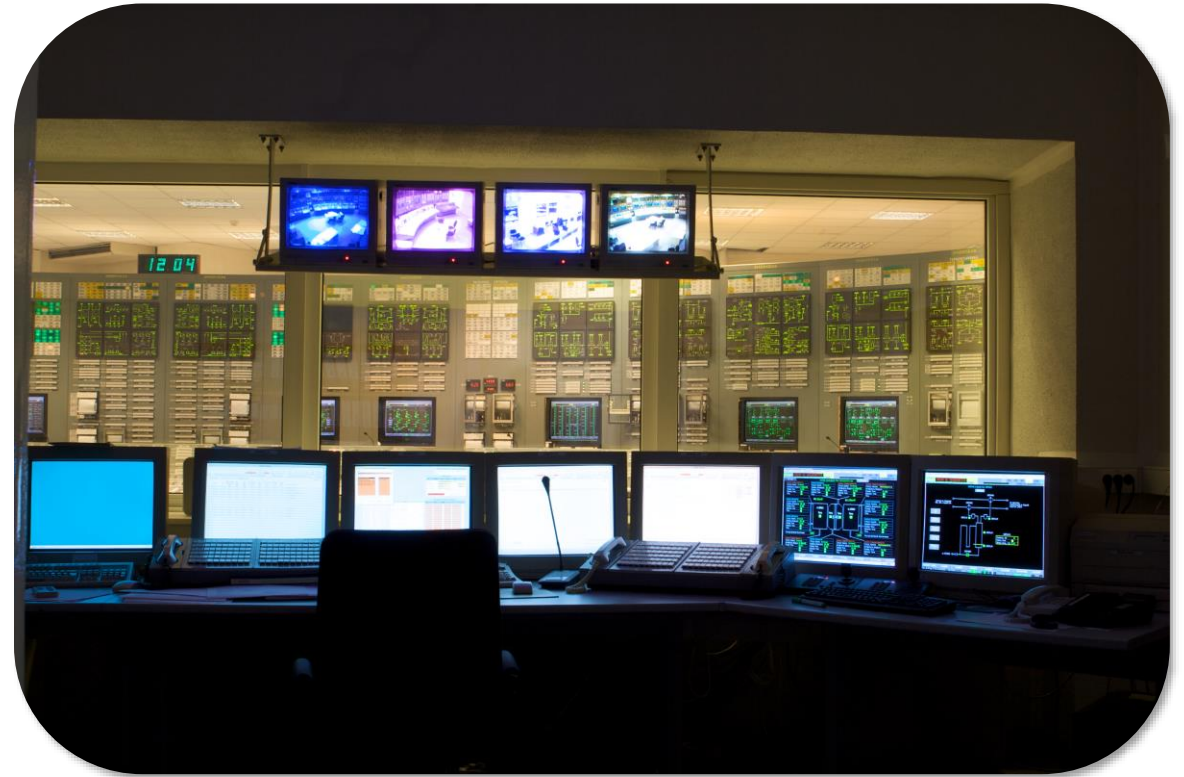
**Below 200kV
identified by the PC
or TP that if lost or
degraded could
result in impacts to
reliability**



PRC-023-5 - Transmission Relay Loadability

Criteria for Protective Relay Settings

Includes circuits selected by the PC or TP that if lost or degraded could result in impacts to reliability



PRC-002-3 – Disturbance Monitoring and Reporting Requirements

**RC to request
dynamic
Disturbance
recording data**

**TO and GO shall
provide dynamic
Disturbance
recording data**



PRC-026-2 - Relay Performance During Stable Power Swings

PC Planning Assessments of the Near-Term Transmission Planning Horizon

TO and GO shall determine whether identified Elements meet the criteria

If the criteria is NOT met, TO and GO shall develop and implement a CAP



Standard Applicability

	Reliability Coordinator (RC)	Planning Coordinator (PC)	Balancing Authority (BA)	Transmission Planner (TP)	Transmission Owner (TO)	Transmission Operator (TOP)	Generator Owner (GO)	Generator Operator (GOP)	Distribution Provider (DP)
TOP-001-6			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IRO-008-5	<input checked="" type="checkbox"/>								
FAC-011-4	<input checked="" type="checkbox"/>								
FAC-014-3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
FAC-003-5					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
PRC-002-3	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
PRC-023-5		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
PRC-026-2		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		



Slido Question

Which of the following are required actions in FAC-014-3, Establish and Communicate Security Operating Limits (SOL)?

- A. The Reliability Coordinator shall establish IROLs and stability limits impacting multiple TOPs
- B. Each TOP shall establish SOLs for its portion of the RC area and provide those to its RC
- C. The RC shall provide SOL and IROL information to TPs, TOPs, GOs and TOs
- D. All of the above



Common Questions

The Engagement Common Questions spreadsheet is available on the [Texas RE website](#)

- The questions are focused on reliability, compliance, security, and internal controls
- Questions are added to the Common Questions spreadsheet as needed



Common Questions

General FAC-014-3 and TOP-001-6

What internal controls does the Entity have in place to ensure the most up to date RC's SOL methodology is been used in its Real-time Assessments, Real-time monitoring and Operational Planning Analysis?

FAC-014-3 R3

What internal controls does the Entity have in place to ensure that updated SOLs are provided to the RC because of an update to the RC's SOL methodology?



CQ, Continued

TOP-001-6 R14

What internal controls does the Entity have in place to ensure that its Operating Plan is updated because of an update to the RC's SOL methodology?

TOP-001-6 R15

What internal controls does the Entity have in place to ensure that the RC is informed of actions taken to return the System to within limits when a SOL has been exceeded in accordance with its RC SOL methodology?



Expected Evidence

FAC-014-3 R2

Provide evidence that the Entity has established SOLs for its portion of the RC Area in accordance with its SOL methodology.

FAC-014-3 R3

Provide evidence that Entity provided SOLs to the RC.

TOP-001-6 R14

Provide the Entity's Operating Plan to mitigate a SOL exceedance.

TOP-001-6 R15

Provide evidence Entity informed its RC of actions taken when a SOL was exceeded in accordance with its RC's SOL methodology.

TOP-001-6 R25

Provide evidence that the Entity used the applicable RC's SOL methodology when determining SOL exceedances for Real-time Assessments, Real-time monitoring, and Operating Planning Analysis.



The background of the slide features a blurred Texas state flag on the left and a target with several darts on the right. The darts are clustered in the center of the target, suggesting a focus or a goal.

Questions?



TEXAS RE

Ensuring electric reliability for Texans