

## 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 NERC Board of Trustees (Board).

### Description of Current Draft

This is the initial draft of the proposed standard for a formal 45-day comment and ballot period.

Completed Actions	Date
45-day formal or informal comment period with ballot	February 2023

Anticipated Actions	Date
45-day formal or informal comment period with additional ballot	June 2023
10-day final ballot	September 2023
Board adoption	October 2023

## A. Introduction

1. **Title: Operations Planning**
2. **Number: TOP-002-45**
3. **Purpose:** To ensure that Transmission Operators and Balancing Authorities have plans for operating within specified limits.
4. **Applicability:**
  - 4.1. Transmission Operator
  - 4.2. Balancing Authority
5. **Effective Date:**

See Implementation Plan.
6. **Background:**

~~See Project 2014-03 project page.~~  
[See Project 2021-07 project page.](#)

## B. Requirements and Measures

- R1.** Each Transmission Operator shall have an Operational Planning Analysis that will allow it to assess whether its planned operations for the next day within its Transmission Operator Area will exceed any of its System Operating Limits (SOLs). *-[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M1.** Each Transmission Operator shall have evidence of a completed Operational Planning Analysis. Such evidence could include but is not limited to dated power flow study results.
- R2.** Each Transmission Operator shall have an Operating Plan(s) for next-day operations to address potential System Operating Limit (SOL) exceedances identified as a result of its Operational Planning Analysis as required in Requirement R1. *-[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M2.** Each Transmission Operator shall have evidence that it has an Operating Plan to address potential System Operating Limits (SOLs) exceedances identified as a result of the Operational Planning Analysis performed in Requirement R1. Such evidence could include but it is not limited to plans for precluding operating in excess of each SOL that was identified as a result of the Operational Planning Analysis.
- R3.** Each Transmission Operator shall notify entities identified in the Operating Plan(s) cited in Requirement R2 as to their role in those plan(s). *-[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

- M3.** Each Transmission Operator shall have evidence that it notified entities identified in the Operating Plan(s) cited in Requirement R2 as to their role in the plan(s). Such evidence could include but is not limited to dated operator logs, or e-mail records.
- R4.** Each Balancing Authority shall have an Operating Plan(s) for the next-day that addresses: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- 4.1** Expected generation resource commitment and dispatch;
  - 4.2** Interchange scheduling;
  - 4.3** Demand patterns; and
  - ~~4.4~~ Capacity and energy reserve requirements, including deliverability capability.
- M4.** Each Balancing Authority shall have evidence that it has developed a plan to operate within the criteria identified. Such evidence could include but is not limited to dated operator logs or ~~e-mail~~email records.
- R5.** Each Balancing Authority shall notify entities identified in the Operating Plan(s) cited in Requirement R4 as to their role in those plan(s). *-[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M5.** Each Balancing Authority shall have evidence that it notified entities identified in the plan(s) cited in Requirement R4 as to their role in the plan(s). Such evidence could include but is not limited to dated operator logs or ~~e-mail~~email records.
- R6.** Each Transmission Operator shall provide its Operating Plan(s) for next-day operations identified in Requirement R2 to its Reliability Coordinator. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M6.** Each Transmission Operator shall have evidence that it provided its Operating Plan(s) for next-day operations identified in Requirement R2 to its Reliability Coordinator. Such evidence could include but is not limited to dated operator logs or ~~e-mail~~email records.
- R7.** Each Balancing Authority shall provide its Operating Plan(s) for next-day operations identified in Requirement R4 to its Reliability Coordinator. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- M7.** Each Balancing Authority shall have evidence that it provided its Operating Plan(s) for next-day operations identified in Requirement R4 to its Reliability Coordinator. Such evidence could include but is not limited to dated operator logs or ~~e-mail~~email records.
- R8.** Each Balancing Authority shall have an extreme cold weather Operating Process, as part of its Operating Plan developed in Requirement R4, addressing preparations for and operations during extreme cold weather periods. The extreme cold weather Operating Process shall include: [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]

**8.1** A methodology for identifying an extreme cold weather period within each Balancing Authority Area;

**8.2** A methodology that determines an appropriate reserve margin during the extreme cold weather period considering the generating unit(s) operating limitations in previous extreme cold weather periods including:

**8.2.1** Capability and availability;

**8.2.2** Fuel supply and inventory concerns;

**8.2.3** Start-up issues;

**8.2.4** Fuel switching capabilities; and

**8.2.5** Environmental constraints.

**8.3** A methodology to determine a five-day hourly forecast during the identified extreme cold weather periods that includes:

**8.3.1** Expected generation resource commitment and dispatch;

**8.3.2** Interchange scheduling;

**8.3.3** Demand patterns;

**8.3.4** Capacity and energy reserve requirements, including deliverability capability; and

**8.3.5** Weather forecast.

**M8.** Each Balancing Authority shall have evidence that it has developed an extreme cold weather Operating Process in accordance with Requirement R8.

## C. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Enforcement Authority

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

#### 1.2. Compliance Monitoring and Assessment Processes

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Assessment Processes” 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.

#### 1.3. Data Retention

The following evidence retention periods 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.

Each Transmission Operator and Balancing Authority shall keep data or evidence to show compliance for each applicable Requirement for a rolling 90-calendar days period for analyses, the most recent 90-calendar days for voice recordings, and 12 months for operating logs and e-mail records unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Transmission Operator or Balancing Authority is found non-compliant, it shall keep information related to the non-compliance until found compliant or the time period specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records

#### 1.4. Additional Compliance Information

None.

**Table of Compliance Elements**

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Operations Planning	Medium	N/A	N/A	N/A	The Transmission Operator did not have an Operational Planning Analysis allowing it to assess whether its planned operations for the next day within its Transmission Operator Area exceeded any of its System Operating Limits (SOLs).
R2	Operations Planning	Medium	N/A	N/A	N/A	The Transmission Operator did not have an Operating Plan to address potential System Operating Limit (SOL) exceedances identified as a result of the Operational Planning Analysis performed in Requirement R1.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
<p>For the Requirement R3 and R5 VSLs only, the intent of the SDT is to start with the Severe VSL first and then to work your way to the left until you find the situation that fits. In this manner, the VSL will not be discriminatory by size of entity. If a small entity has just one affected reliability entity to inform, the intent is that that situation would be a Severe violation.</p>						
R3	Operations Planning	Medium	The Transmission Operator did not notify one impacted entity or 5% or less of the entities, whichever is greater identified in the Operating Plan(s) as to their role in the plan(s).	The Transmission Operator did not notify two entities or more than 5% and less than or equal to 10% of the impacted entities, whichever is greater, identified in the Operating Plan(s) as to their role in the plan(s).	The Transmission Operator did not notify three impacted entities or more than 10% and less than or equal to 15% of the entities, whichever is greater, identified in the Operating Plan(s) as to their role in the plan(s).	The Transmission Operator did not notify four or more entities or more than 15% of the impacted NERC identified in the Operating Plan(s) as to their role in the plan(s).
R4	Operations Planning	Medium	The Balancing Authority has an Operating Plan but it does not address one of the criteria in Requirement R4.	The Balancing Authority has an Operating Plan but it does not address two of the criteria in Requirement R4.	The Balancing Authority has an Operating Plan but it does not address three of the criteria in Requirement R4.	The Balancing Authority did not have an Operating Plan.
R5	Operations Planning	Medium	The Balancing Authority did not notify one impacted entity or 5% or less	The Balancing Authority did not notify two entities or more than 5% and	The Balancing Authority did not notify three impacted entities or	The Balancing Authority did not notify four or more entities or more than

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			of the entities, whichever is greater, identified in the Operating Plan(s) as to their role in the plan(s).	less than or equal to 10% of the impacted entities, whichever is greater, identified in the Operating Plan(s) as to their role in the plan(s).	more than 10% and less than or equal to 15% of the entities, whichever is greater, identified in the Operating Plan(s) as to their role in the plan(s).	15% of the impacted entities identified in the Operating Plan(s) as to their role in the plan(s).
R6	Operations Planning	Medium	N/A	N/A	N/A	The Transmission Operator did not provide its Operating Plan(s) for next-day operations as identified in Requirement R2 to its Reliability Coordinator.
<u>R7</u>	<u>Operations Planning</u>	<u>Medium</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>The Balancing Authority did not provide its Operating Plan(s) for next day operations as identified in Requirement R4 to its Reliability Coordinator.</u>

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
<u>R8</u>	Operations Planning	Medium	N/A	<u>The Balancing Authority had an extreme cold weather Operating Process addressing preparations for and operations during extreme cold weather periods, but it did not address one of the parts of Requirement R8 Parts 8.1 through 8.3.</u>	<u>The Balancing Authority had an extreme cold weather Operating Process addressing preparations for and operations during extreme cold weather periods, but it did not address two of the parts of Requirement R8 Parts 8.1 through 8.3.</u>	<u>The Balancing Authority did not <del>provide its</del> have a cold weather Operating Plan(s) Process addressing preparations for <del>next-day</del> and operations as identified in Requirement R4 to its Reliability Coordinator during extreme cold weather periods.</u>

## D. Regional Variances

None.

## E. Interpretations

None.

## F. Associated Documents

Operating Plan - An Operating Plan includes general Operating Processes and specific Operating Procedures. It may be an overview document which provides a prescription for an Operating Plan for the next-day, or it may be a specific plan to address a specific SOL or IROL exceedance identified in the Operational Planning Analysis (OPA). Consistent with the NERC definition, Operating Plans can be general in nature, or they can be specific plans to address specific reliability issues. The use of the term Operating Plan in the revised TOP/IRO standards allows room for both. An Operating Plan references processes and procedures which are available to the System Operator on a daily basis to allow the operator to reliably address conditions which may arise throughout the day. It is valid for tomorrow, the day after, and the day after that. Operating Plans should be augmented by temporary operating guides which outline prevention/mitigation plans for specific situations which are identified day-to-day in an OPA or a Real-time Assessment (RTA). As the definition in the Glossary of Terms states, a restoration plan is an example of an Operating Plan. It contains all the overarching principles that the System Operator needs to work his/her way through the restoration process. It is not a specific document written for a specific blackout scenario but rather a collection of tools consisting of processes, procedures, and automated software systems that are available to the operator to use in restoring the system. An Operating Plan can in turn be looked upon in a similar manner. It does not contain a prescription for the specific set-up for tomorrow but contains a treatment of all the processes, procedures, and automated software systems that are at the operator's disposal. The existence of an Operating Plan, however, does not preclude the need for creating specific action plans for specific SOL or IROL exceedances identified in the OPA. When a Reliability Coordinator performs an OPA, the analysis may reveal instances of possible SOL or IROL exceedances for pre- or post-Contingency conditions. In these instances, Reliability Coordinators are expected to ensure that there are plans in place to prevent or mitigate those SOLs or IROLs, should those operating conditions be encountered the next day. The Operating Plan may contain a description of the process by which specific prevention or mitigation plans for day-to-day SOL or IROL exceedances identified in the OPA are handled and communicated. This approach could alleviate any potential administrative burden associated with perceived requirements for continual day-to-day updating of "the Operating Plan document" for compliance purposes.

## Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	August 2, 2006	Adopted by Board of Trustees	Revised
2	November 1, 2006	Adopted by Board of Trustees	Revised
2	June 14, 2007	Fixed typo in R11., (subject to ...)	Errata
2a	February 10, 2009	Added Appendix 1 – Interpretation of R11 approved by BOT on February 10, 2009	Interpretation
2a	December 2, 2009	Interpretation of R11 approved by FERC on December 2, 2009	Same Interpretation
2b	November 4, 2010	Added Appendix 2 – Interpretation of R10 adopted by the Board of Trustees	
2b	October 20, 2011	FERC Order issued approving the Interpretation of R10 (FERC’s Order became effective on October 20, 2011)	
2.1b	March 8, 2012	Errata adopted by Standards Committee; (Removed unnecessary language from the Effective Date section. Deleted retired sub-requirements from Requirement R14)	Errata
2.1b	April 11, 2012	Additional errata adopted by Standards Committee; (Deleted language from retired sub-requirement from Measure M7)	Errata
2.1b	September 13, 2012	FERC approved	Errata
3	May 6, 2012	Revisions under Project 2007-03	Revised

<u>Version</u>	<u>Date</u>	<u>Action</u>	<u>Change Tracking</u>
3	May 9, 2012	Adopted by Board of Trustees	Revised
4	April 2014	Revisions under Project 2014-03	Revised
4	November 13, 2014	Adopted by NERC Board of Trustees	Revisions under Project 2014-03
4	November 19, 2015	FERC approved TOP-002-4. Docket No. RM15-16-000. Order No. 817.	
<u>5</u>	<u>TBD</u>	<u>Revisions under Project 2021-07</u>	<u>Revised</u>

## **Guidelines and Technical Basis**

### **Rationale:**

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

### **Rationale for Definitions:**

Changes made to the proposed definitions were made in order to respond to issues raised in NOPR paragraphs 55, 73, and 74 dealing with analysis of SOLs in all time horizons, questions on Protection Systems and Special Protection Systems in NOPR paragraph 78, and recommendations on phase angles from the SW Outage Report (recommendation 27). The intent of such changes is to ensure that Real-time Assessments contain sufficient details to result in an appropriate level of situational awareness. Some examples include: 1) analyzing phase angles which may result in the implementation of an Operating Plan to adjust generation or curtail transactions so that a Transmission facility may be returned to service, or 2) evaluating the impact of a modified Contingency resulting from the status change of a Special Protection Scheme from enabled/in-service to disabled/out-of-service.

### **Rationale for R1:**

Terms deleted in Requirement R1 as they are now contained in the revised definition of Operational Planning Analysis

### **Rationale for R2:**

The change to Requirement R2 is in response to NOPR paragraph 42 and in concert with proposed changes made to proposed TOP-001-4

### **Rationale for R3:**

Changes in response to IERP recommendation

### **Rationale for R4 and R5:**

These Requirements were added to address IERP recommendations

### **Rationale for R6 and R7:**

Added in response to SW Outage Report recommendation 1