

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

Description of Current Draft

This is the first draft of proposed standard for formal 45-day comment period.

<u>Completed Actions</u>	<u>Date</u>
<u>Standards Committee approved Standards Authorization Request (SAR)</u>	<u>July 22, 2020</u>
<u>SAR posted for comment</u>	<u>February 19 – March 19, 2020</u>
<u>SAR posted for comment</u>	<u>April 22 – May 21, 2020</u>
<u>45-day initial formal comment period with ballot</u>	<u>January 27 – March 12, 2021</u>
<u>25-day formal comment period with ballot</u>	<u>April 2 – 27, 2021</u>

<u>Anticipated Actions</u>	<u>Date</u>
<u>10-day final ballot</u>	<u>May 2021</u>
<u>NERC Board (Board) adoption</u>	<u>June 2021</u>

A. Introduction

1. **Title:** Operational Reliability Data
2. **Number:** TOP-003-45
3. **Purpose:** To ensure that the Transmission Operator and Balancing Authority have data needed to fulfill their operational and planning responsibilities.
4. **Applicability:**
 - 4.1. Transmission Operator
 - 4.2. Balancing Authority
 - 4.3. Generator Owner
 - 4.4. Generator Operator
 - 4.5. Transmission Owner
 - 4.6. Distribution Provider
5. **Effective Date:** See Implementation Plan for Project 2019-06.

B. Requirements and Measures

- R1. Each Transmission Operator shall maintain a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The data specification shall include, but not be limited to: *[Violation Risk Factor: ~~Low~~Lower] [Time Horizon: Operations Planning]*
 - 1.1. A list of data and information needed by the Transmission Operator to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments including non-BES data and external network data as deemed necessary by the Transmission Operator.
 - 1.2. Provisions for notification of current Protection System and ~~Special Protection System~~ Remedial Action Scheme (RAS) status or degradation that impacts System reliability.
 - 1.3. Provisions for notification of BES generating unit(s) during local forecasted cold weather to include:
 - 1.3.1. Operating limitations based on:
 - 1.3.1.1. capability and availability;
 - 1.3.1.2. fuel supply and inventory concerns;
 - 1.3.1.3. fuel switching capabilities; and
 - 1.3.1.4. environmental constraints
 - 1.3.2. Generating unit(s):
 - 1.3.2.1 minimum design temperature; or

1.3.2.2. minimum historical operating temperature; or

1.3.2.3 engineering analysis to determine current minimum cold weather performance temperature

1.4. A periodicity for providing data.

1.5. The deadline by which the respondent is to provide the indicated data.

- M1.** Each Transmission Operator shall make available its dated, current, in force documented specification for data.
- R2.** Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. The data specification shall include, but not be limited to: [*Violation Risk Factor: ~~Low~~Lower*] [*Time Horizon: Operations Planning*]
- 2.1.** A list of data and information needed by the Balancing Authority to support its analysis functions and Real-time monitoring.
- 2.2.** Provisions for notification of current Protection System and ~~Special Protection System~~Remedial Action Scheme status or degradation that impacts System reliability.
- 2.3.** Provisions for notification of BES generating unit(s) status during local forecasted cold weather to include:
- 2.3.1.** Operating limitations based on:
- 2.3.1.1.** capability and availability;
- 2.3.1.2.** fuel supply and inventory concerns;
- 2.3.1.3.** fuel switching capabilities; and
- 2.3.1.4.** environmental constraints.
- 2.3.2.** Generating unit(s):
- 2.3.2.1** minimum design temperature; or
- 2.3.2.2.** minimum historical operating temperature; or
- 2.3.2.3** engineering analysis to determine current minimum cold weather performance temperature.
- ~~2.2.2.4.~~ 2.2.2.4. A periodicity for providing data.
- ~~2.3.2.5.~~ 2.3.2.5. The deadline by which the respondent is to provide the indicated data.
- M2.** Each Balancing Authority shall make available its dated, current, in force documented specification for data.
- R3.** Each Transmission Operator shall distribute its data specification to entities that have data required by the Transmission Operator’s Operational Planning Analyses, Real-

time monitoring, and Real-time ~~Assessment~~Assessments. *[Violation Risk Factor: ~~Low~~Lower] [Time Horizon: Operations Planning]*

- M3.** Each Transmission Operator shall make available evidence that it has distributed its data specification to entities that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.
- R4.** Each Balancing Authority shall distribute its data specification to entities that have data required by the Balancing Authority’s analysis functions and Real-time monitoring. *[Violation Risk Factor: ~~Low~~Lower] [Time Horizon: Operations Planning]*
- M4.** Each Balancing Authority shall make available evidence that it has distributed its data specification to entities that have data required by the Balancing Authority’s analysis functions and Real-time monitoring. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, or e-mail records.
- R5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*
- 5.1.** A mutually agreeable format
 - 5.2.** A mutually agreeable process for resolving data conflicts
 - 5.3.** A mutually agreeable security protocol
- M5.** Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall make available evidence that it has satisfied the obligations of the documented specifications. Such evidence could include, but is not limited to, electronic or hard copies of data transmittals or attestations of receiving entities.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance ~~Monitoring Process~~ Enforcement Authority:

~~As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) 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 the NERC mandatory and enforceable Reliability Standards in their respective jurisdictions.~~

~~1.1. 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.~~

1.2. ~~Data~~Evidence Retention:

The following evidence retention ~~periods~~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.

Each responsible 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:

Each Transmission Operator shall retain its dated, current, in force, documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments in accordance with Requirement R1 and Measurement M1 as well as any documents in force since the last compliance audit.

Each Balancing Authority shall retain its dated, current, in force, documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring in accordance with Requirement R2 and Measurement M2 as well as any documents in force since the last compliance audit.

Each Transmission Operator shall retain evidence for three calendar years that it has distributed its data specification to entities that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments in accordance with Requirement R3 and Measurement M3.

Each Balancing Authority shall retain evidence for three calendar years that it has distributed its data specification to entities that have data required by the

Balancing Authority's analysis functions and Real-time monitoring in accordance with Requirement R4 and Measurement M4.

Each Balancing Authority, Generator Owner, Generator Operator, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall retain evidence for the most recent 90-calendar days that it has satisfied the obligations of the documented specifications in accordance with Requirement R5 and Measurement M5.

~~If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved 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.~~

~~**1.2. Additional Compliance Information**~~

~~None.~~

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.

~~Table of Compliance Elements~~

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Operations Planning	Low <u>Low</u> er	The Transmission Operator did not include one <u>two or fewer</u> of the parts (Part 1.1 through Part 1.45) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Transmission Operator did not include two <u>three</u> of the parts (Part 1.1 through Part 1.45) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Transmission Operator did not include three <u>four</u> of the parts (Part 1.1 through Part 1.45) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	The Transmission Operator did not include four <u>any</u> of the parts (Part 1.1 through Part 1.45) of the documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. OR, The Transmission Operator did not have a documented specification for the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R2	Operations Planning	Low <u>Low</u> er	The Balancing Authority did not include one <u>two or fewer</u> of the parts (Part 2.1 through Part 2.45) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include two <u>three</u> of the parts (Part 2.1 through Part 2.45) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include three <u>four</u> of the parts (Part 2.1 through Part 2.45) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.	The Balancing Authority did not include four <u>any</u> of the parts (Part 2.1 through Part 2.45) of the documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. OR, The Balancing Authority did not have a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring.
<p>For the Requirement R3 and R4 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	Low <u>Low</u> er	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data	The Transmission Operator did not distribute its data

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			specification to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to two entities, or more than 5% and less than or equal to 10% of the reliability entities, whichever is greater, that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to three entities, or more than 10% and less than or equal to 15% of the reliability entities, whichever is greater, that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.	specification to four or more entities, or more than 15% of the entities that have data required by the Transmission Operator’s Operational Planning Analyses, Real-time monitoring, and Real-time Assessments.
R4	Operations Planning	Low <u>Low</u> er	The Balancing Authority did not distribute its data specification to one entity, or 5% or less of the entities, whichever is greater, that have data required by the Balancing Authority’s analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to two entities, or more than 5% and less than or equal to 10% of the entities, whichever is greater, that have data required by the Balancing Authority’s analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to three entities, or more than 10% and less than or equal to 15% of the entities, whichever is greater, that have data required by the Balancing Authority’s analysis functions and Real-time monitoring.	The Balancing Authority did not distribute its data specification to four or more entities, or more than 15% of the entities that have data required by the Balancing Authority’s analysis functions and Real-time monitoring.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R5	Operations Planning, Same-Day Operations, Real-time Operations	Medium	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet one of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet two of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 satisfied the obligations in the data specification but did not meet three of the criteria shown in Requirement R5 (Parts 5.1 – 5.3).	The responsible entity receiving a data specification in Requirement R3 or R4 did not satisfy the obligations of the documented specifications for data.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

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		Modified R1.2 Modified M1 Replaced Levels of Non-compliance with the Feb 28, BOT approved Violation Severity Levels (VSLs)	Revised
1	October 17, 2008	Adopted by NERC Board of Trustees	
1	March 17, 2011	Order issued by FERC approving TOP-003-1 (approval effective 5/23/11)	
2	May 6, 2012	Revised under Project 2007-03	Revised
2	May 9, 2012	Adopted by Board of Trustees	Revised
3	April 2014	Changes pursuant to Project 2014-03	Revised
3	November 13, 2014	Adopted by Board of Trustees	Revisions under Project 2014-03
3	November 19, 2015	FERC approved TOP-003-3. Docket No. RM15-16-000, Order No. 817	
4	February 6, 2020	Adopted by NERC Board of Trustees	Revisions under Project 2017-07

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:

~~Changes to proposed Requirement R1, Part 1.1 are in response to issues raised in NOPR paragraph 67 on the need for obtaining non-BES and external network data necessary for the Transmission Operator to fulfill its responsibilities.~~

~~Proposed Requirement R1, Part 1.2 is in response to NOPR paragraph 78 on relay data. The language has been moved from approved PRC-001-1.~~

~~Corresponding changes have been made to Requirement R2 for the Balancing Authority and to proposed IRO-010-2, Requirement R1 for the Reliability Coordinator.~~

Rationale for R5:

~~Proposed Requirement R5, Part 5.3 is in response to NOPR paragraph 92 where concerns were raised about data exchange through secured networks.~~