

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.

Development Steps Completed

SAR posted for comment February 21, 2014 to March 24, 2014

First posting May 19, 2014 to July 2, 2014

Proposed Action Plan and Description of Current Draft

This is the second posting of the revised standard under Project 2014-03 Revisions to the TOP/IRO Reliability Standards. The SDT is working under a deadline for filing the revised standards with FERC of January 31, 2015.

Anticipated Actions	Anticipated Date
Final ballot	October 2014
BOT	November 2014

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	November 1, 2006	Adopted by Board of Trustees	Revised
1a	May 12, 2010	Added Appendix 1 – Interpretation of R8 approved by BOT on May 12, 2010	Interpretation
1a	September 15, 2011	FERC Order issued approved the Interpretation of R8 (FERC Order became effective November 21, 2011)	Interpretation
2	May 6, 2012	Revised under Project 2007-03	Revised
2	May 9, 2012	Adopted by Board of Trustees	Revised
3	TBD	Revisions under Project 2014-03	Revised

Definitions of Terms Used in Standard

This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.

Rationale - The definition for Reliability Directive is not needed due to the work in proposed COM-002-4 on the definition of Operating Instruction (see NOPR paragraph 64).

Real-time Assessment - An evaluation of system conditions using Real-time data to assess existing (pre-Contingency) and potential (post-Contingency) operating conditions. The assessment shall reflect applicable inputs including, but not limited to: load, generation output levels, known Protection System and Special Protection System status or degradation, Transmission outages, generator outages, Interchange, Facility Ratings, and identified phase angle and equipment limitations. (Real-time Assessment may be provided through internal systems or through third-party services.)

Rationale - 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.

Operational Planning Analysis - An evaluation of projected system conditions to assess anticipated (pre-Contingency) and potential (post-Contingency) conditions for next-day operations. The evaluation shall reflect applicable inputs including, but not limited to, load forecasts; generation output levels; Interchange; known Protection System and Special Protection System status or degradation; Transmission outages; generator outages; Facility Ratings; and identified phase angle and equipment limitations. (Operational Planning Analysis may be provided through internal systems or through third-party services.)

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. **Title: Transmission Operations**
2. **Number: TOP-001-3**
3. **Purpose:** To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.
4. **Applicability:**
 - 4.1. Balancing Authority
 - 4.2. Transmission Operator
 - 4.3. Generator Operator
 - 4.4. Distribution Provider
 - 4.5. Load-Serving Entity

5. **Effective Date:**

The standard shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date that the standard is approved by an applicable governmental authority or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date the standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

6. **Background:**

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

B. Requirements and Measures

Rationale: The NERC Glossary term Reliability Directive has been replaced throughout by Operating Instruction. The new definition covers the Project 2014-03 SDT intent. New Requirements R1 and R2 added in response to IERP Report recommendations.

- R1.** Each Transmission Operator shall act, or direct others to act by issuing Operating Instructions, to ensure the reliability of its Transmission Operator Area. *[Violation Risk Factor: High][Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*
- M1.** Each Transmission Operator shall have and provide evidence which may include but is not limited to dated operator logs, dated records, dated and time-stamped voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent documentation, that will be used to determine that it acted, or directed others to act by issuing Operating Instructions to ensure the reliability of its Transmission Operator Area.
- R2.** Each Balancing Authority shall act, or direct others to act by issuing Operating Instructions, to ensure the reliability of its Balancing Authority Area. *[Violation Risk Factor: High][Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*
- M2.** Each Balancing Authority shall have and provide evidence which may include but is not limited to dated operator logs, dated records, dated and time-stamped voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent documentation, that will be used to determine that it acted, or directed others to act by issuing Operating Instructions to ensure the reliability of its Balancing Authority Area.

Rationale for Requirement R3: Additional phrasing ‘cannot be physically implemented’ included for consistency with proposed IRO-001-4, Requirement R2. This term means that a Transmission Operator may request something to be done that is not physically possible due its lack of knowledge of the system involved.

- R3.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Transmission Operator(s), unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High][Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*
- M3.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall make available upon request, evidence that it complied with each

Operating Instruction issued by the Transmission Operator(s) unless such action could not be physically implemented or it would have violated safety, equipment, regulatory, or statutory requirements. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format. In such cases, the Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall have and provide copies of the safety, equipment, regulatory, or statutory requirements as evidence for not complying with the Transmission Operator's Operating Instruction. If such a situation has not occurred, the Balancing Authority, Generator Operator, Distribution Provider, or Load-Serving Entity may provide an attestation.

- R4.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Transmission Operator of its inability to perform an Operating Instruction issued by its Transmission Operator. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*
- M4.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall make available upon request, evidence which may include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or equivalent evidence in electronic or hard copy format, that it informed its Transmission Operator of its inability to comply with its Operating Instruction issued. If such a situation has not occurred, the Balancing Authority, Generator Operator, Distribution Provider, or Load-Serving Entity may provide an

Rationale: Requirements R5 and R6 added for consistency with requirements applying to Transmission Operators. Entity list compiled from Functional Model v5 items 27 and 28 for Balancing Authority.

attestation.

- R5.** Each Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Operating Instruction issued by its Balancing Authority, unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*
- M5.** Each Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall make available upon request, evidence that it complied with each Operating Instruction issued by the Balancing Authority(s) unless such action could not be physically implemented or it would have violated safety, equipment, regulatory, or statutory requirements. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic

communications, or other equivalent evidence in electronic or hard copy format. In such cases, the Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall have and provide copies of the safety, equipment, regulatory, or statutory requirements as evidence for not complying with the Balancing Authority's Operating Instruction. If such a situation has not occurred, the Transmission Operator, Generator Operator, Distribution Provider, or Load-Serving Entity may provide an attestation.

- R6.** Each Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Balancing Authority of its inability to perform an Operating Instruction issued by that Balancing Authority. *[Violation Risk Factor: High]*
[Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]
- M6.** Each Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall make available upon request, evidence which may include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or equivalent evidence in electronic or hard copy format, that it informed its Balancing Authority of its inability to comply with its Operating Instruction. If such a situation has not occurred, the Transmission Operator, Generator Operator, Distribution Provider, or Load-Serving Entity may provide an attestation.

Rationale for Requirement R7: 'Emergency' deleted as the assistance is assistance in response to the other entities' emergency. 'Comparable' deleted as it is impossible to measure comparability and the main concept is that the originating entity has implemented its emergency procedures. These changes are in response to IERP recommendations.

- R7.** Each Transmission Operator shall assist other Transmission Operators, if requested and able, provided that the requesting entity has implemented its emergency procedures, unless such assistance cannot be physically implemented or would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High]*
[Time Horizon: Real-Time Operations]
- M7.** Each Transmission Operator shall make available upon request, evidence that requested assistance, if able, was provided to other Transmission Operators unless

Rationale for Requirement R8: Original Requirement R3 has been merged with original Requirement R5 in response to concerns raised in NOPR paragraphs 80 -83 to have consistent terminology and actions across all time horizons.

such assistance cannot be physically implemented or would have violated safety, equipment, regulatory, or statutory requirements. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format. If no request for assistance was received, the Transmission Operator may provide an attestation.

- R8.** Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known other impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*
- M8.** Each Transmission Operator shall make available upon request, evidence that it informed its Reliability Coordinator, known impacted Balancing Authorities, and known other impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence. If no Emergency has occurred, the Transmission Operator may provide an attestation.

Rationale for Requirement R9: Additional terms added in response to SW Outage Report recommendation 15.

- R9.** Each Balancing Authority and Transmission Operator shall notify its Reliability Coordinator and impacted interconnected NERC registered entities of outages of telemetering equipment, control equipment, monitoring and assessment capabilities, and associated communication channels between the affected entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*
- M9.** Each Balancing Authority and Transmission Operator shall make available upon request, evidence that it notified its Reliability Coordinator and impacted interconnected NERC registered entities of planned outages of telemetering equipment, control equipment, monitoring and assessment capabilities, and associated communication channels. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence. If such a situation has not occurred, the Balancing Authority or Transmission Operator may provide an attestation.

Rationale for Requirement R10: New proposed Requirement R10 is derived from approved IRO-003-2, Requirement R1, adapted to the Transmission Operator Area. This new requirement is in response to NOPR paragraph 60 concerning monitoring capabilities for the Transmission Operator. New Requirement R11 covers the Balancing Authorities.

- R10.** Each Transmission Operator shall monitor Facilities, the status of Special Protection Systems, and sub-100 kV facilities identified as necessary by the Transmission Operator, within its Transmission Operator Area and neighboring Transmission Operator Areas to determine any System Operating Limit (SOL) exceedances within its Transmission Operator Area. *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*
- M10.** Each Transmission Operator shall have, and provide upon request, evidence that could include but is not limited to Energy Management System description documents, computer printouts, SCADA data collection, or other equivalent evidence that will be used to confirm that it monitors Facilities, the status of Special protection Systems, and sub-100 kV facilities identified as necessary by the Transmission Operator, within its Transmission Operator Area and neighboring Transmission Operator Areas to determine any System Operating Limit (SOL) exceedances within its Transmission Operator Area.
- R11.** Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Special Protection Systems that impact generation or Load, to ensure that it is able to perform its reliability functions. *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*
- M11.** Each Balancing Authority shall have, and provide upon request, evidence that could include but is not limited to system description documents, computer printouts, SCADA data collection, or other equivalent evidence that will be used to confirm that it monitors its Balancing Authority Area, including the status of Special Protection Systems that impact generation or Load, to ensure that it is able to perform its reliability functions.
- R12.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_v . *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
- M12.** Each Transmission Operator shall make available evidence for any occasion in which it has operated outside any identified Interconnection Reliability Operating Limit (IROL)

Rationale for Requirement R13: The new Requirement R13 is in response to NOPR paragraphs 55 and 60 concerning Real-time analysis responsibilities for Transmission Operators and is copied from approved IRO-008-1, Requirement R2.

for a continuous duration exceeding its associated IROL T_v . Such evidence could include but is not limited to dated computer logs or reports in electronic or hard copy format specifying the date, time, duration, and details of the excursion. If such a situation has not occurred, the Transmission Operator may provide an attestation that an event has not occurred.

R13. Each Transmission Operator shall ensure that a Real-time Assessment is performed at least once every 30 minutes. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

M13. Each Transmission Operator shall have, and make available upon request, evidence to show it ensured that a Real-Time Assessment was performed at least once every 30 minutes. This evidence could include but is not limited to dated computer logs showing times the assessment was conducted, dated checklists, or other evidence.

Rationale for Requirement R14: The original Requirement R8 was deleted and original Requirements R9 and R11 were revised in order to respond to NOPR paragraph 42 which raised the issue of handling all SOLs and not just a sub-set of SOLs. The SDT has developed a white paper on SOL exceedances that explains its intent on what needs to be contained in such an Operating Plan. These Operating Plans are developed and documented in advance of Real-time and may be developed from Operational Planning Assessments required per proposed TOP-002-4 or other assessments. The intent is not to have a 1,000 page document with every possible Contingency cited but to have a plan and philosophy that can be followed by an operator.

R14. Each Transmission Operator shall initiate its Operating Plan to mitigate a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

M14. Each Transmission Operator shall have evidence that it initiated its Operating Plan for mitigating SOL exceedances identified as part of its Real-time monitoring or Real-time Assessments. This evidence could include but is not limited to dated computer logs showing times the Operating Plan was initiated, dated checklists, or other evidence.

R15. Each Transmission Operator shall inform its Reliability Coordinator of its actions to return the system to within limits when a SOL has been exceeded. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M15. Each Transmission Operator shall make available evidence that it informed its Reliability Coordinator of actions taken to return the system to within limits when a SOL was exceeded. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts. If such a situation has not occurred, the Transmission Operator may provide an attestation.

Rationale for Requirements R16 and R17: In response IERP Report recommendation 3 on authority.

R16. Each Transmission Operator shall provide its System Operators with the authority to approve planned outages and maintenance of its monitoring, telecommunication, and Real-time Assessment capabilities. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M16. Each Transmission Operator shall have, and provide upon request, evidence that could include but is not limited to a documented procedure or equivalent evidence that will be used to confirm that the Transmission Operator has provided its System Operators with the authority to approve planned outages and maintenance of its monitoring, telecommunication, and Real-time Assessment capabilities.

R17. Each Balancing Authority shall provide its System Operators with the authority to approve planned outages and maintenance of its monitoring, telecommunications, and analysis capabilities. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M17. Each Balancing Authority shall have, and provide upon request, evidence that could include but is not limited to a documented procedure or equivalent evidence that will be used to confirm that the Balancing Authority has provided its System Operators with the authority to approve planned outages and maintenance of its monitoring, telecommunications, and analysis capabilities.

Rationale for Requirement R18: Moved from approved IRO-005-3.1a, Requirement R10. Transmission Service Provider, Distribution Provider, Load-Serving Entity, Generator Operator, and Purchasing-Selling Entity deleted as those entities will receive instructions on limits from the responsible entities cited in the requirement. Note – Derived limits replaced by SOLs for clarity and specificity. SOLs include voltage, Stability, and thermal limits and are thus the most limiting factor.

R18. Each Transmission Operator and Balancing Authority shall always operate to the most limiting parameter in instances where there is a difference in SOLs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M18. Each Transmission Operator and Balancing Authority shall have, and provide upon request, evidence that could include but is not limited to operator logs, voice recordings, electronic communications, or equivalent evidence that will be used to determine if it operated to the most limiting parameter in instances where there is a difference in SOLs.

Rationale for Requirements R19 and R20 added for consistency with proposed IRO-002-4, Requirement R2. Data exchange capabilities are required to support the data specification concept in proposed TOP-003-3.

R19. Each Transmission Operator shall have data exchange capabilities with the entities that it has identified that it needs data from in order to maintain reliability in its Transmission Operator Area (Balancing Authority Area). *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M19. Each Transmission Operator shall have, and provide upon request, evidence that could include, but is not limited to, operator logs, system specifications, or other evidence that it has data exchange capabilities with the entities that it has identified that it needs data from in order to maintain reliability in its Transmission Operator Area.

R20. Each Balancing Authority shall have data exchange capabilities with the entities that it has identified that it needs data from in order to maintain reliability in its Transmission Operator Area (Balancing Authority Area). *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M20. Each Balancing Authority shall have, and provide upon request, evidence that could include, but is not limited to, operator logs, system specifications, or other evidence that it has data exchange capabilities with the entities that it has identified that it needs data from in order to maintain reliability in its Balancing Authority Area.

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 Balancing Authority, Transmission Operator, Generator Operator, Distribution Provider, and Load-Serving Entity shall each keep data or evidence for each applicable Requirement R1 through R11, and R14 through R20 and Measure M1 through M11, and M14 through M20 for the current calendar year and one previous calendar year, with the exception of operator logs and voice recordings which shall be retained for a minimum of ninety calendar days, 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 evidence for three calendar years of any occasion in which it has exceeded an identified IROL and its associated IROL T_v as specified in Requirement R12 and Measure M12 and that it initiated its Operating Plan to mitigate a SOL exceedance as specified in Requirement R14 and Measurement M14.

Each Transmission Operator shall each keep data or evidence for Requirement R13 and Measure M13 for a rolling 30-day period, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Balancing Authority, Transmission Operator, Generator Operator, Distribution Provider, or Load-Serving 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.

1.4. 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, Same-Day Operations, Real-time Operations	High	N/A	N/A	N/A	The Transmission Operator failed to act, or direct others within its Transmission Operator Area to act, to ensure the reliability of its Transmission Operator Area.
R2	Operations Planning, Same-Day Operations, Real-time Operations	High	N/A	N/A	N/A	The Balancing Authority failed to act, or direct others within its Balancing Authority Area to act, to ensure the reliability of its Balancing Authority Area.
R3	Operations Planning, Same-Day Operations, Real-Time Operations	High	N/A	N/A	N/A	The responsible entity did not comply with an Operating Instruction issued by the Transmission Operator, and such action could have been physically implemented and would not have violated safety, equipment, regulatory, or statutory requirements.
R4	Operations Planning, Same-Day Operations,	High	N/A	N/A	N/A	The responsible entity did not inform its Transmission Operator of its inability to perform an Operating

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
	Real-Time Operations					Instruction issued by its Transmission Operator.
R5	Operations Planning, Same-Day Operations, Real-time Operations	High	N/A	N/A	N/A	The responsible entity did not comply with an Operating Instruction issued by the Balancing Authority, and such action could have been physically implemented and would not have violated safety, equipment, regulatory, or statutory requirements.
R6	Operations Planning, Same-Day Operations, Real-Time Operations	High	N/A	N/A	N/A	The responsible entity did not inform its Balancing Authority of its inability to perform an Operating Instruction issued by that Balancing Authority.
R7	Real-Time Operations	High	N/A	N/A	N/A	The Transmission Operator did not provide assistance to other Transmission Operators, if requested and able, when the requesting entity had implemented its emergency procedures, and such actions could have been physically implemented and would not have violated safety,

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						equipment, regulatory, or statutory requirements.
<p>For the Requirements R8 and R9 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>						
R8	Operations Planning, Same-Day Operations, Real-Time Operations	High	The Transmission Operator did not inform one other known impacted Transmission Operator or 5% or less of the known impacted other Transmission Operators, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Transmission Operator Areas when conditions did permit such communications. OR,	The Transmission Operator did not inform two other known impacted Transmission Operators or more than 5% and less than or equal to 10% of the known impacted other Transmission Operators, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Transmission Operator Areas when conditions did permit such communications. OR, The Transmission Operator did not	The Transmission Operator did not inform three other known impacted Transmission Operators or more than 10% and less than or equal to 15% of the known impacted other Transmission Operators, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Transmission Operator Areas when conditions did permit such communications. OR, The Transmission Operator did not inform three other known impacted Balancing	The Transmission Operator did not inform its Reliability Coordinator of its actual or expected operations that resulted in, or could have resulted in, an Emergency on those respective Transmission Operator Areas when conditions did permit such communications. OR The Transmission Operator did not inform four or more other known impacted Transmission Operators or more than 15% of the known impacted other Transmission Operators, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on those respective Transmission Operator Areas when

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			The Transmission Operator did not inform one other known impacted Balancing Authorities or 5% or less of the known impacted other Balancing Authorities, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas when conditions did permit such communications.	inform two other known impacted Balancing Authorities or more than 5% and less than or equal to 10% of the known impacted other Balancing Authorities, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas when conditions did permit such communications.	Authorities or more than 10% and less than or equal to 15% of the known impacted other Balancing Authorities, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas when conditions did permit such communications.	conditions did permit such communications. OR, The Transmission Operator did not inform four or more other known impacted Balancing Authorities or more 15% of the known impacted other Balancing Authorities, whichever is less, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas when conditions did permit such communications.
R9	Operations Planning, Same-Day Operations, Real-Time Operations	Medium	The responsible entity did not notify one impacted interconnected NERC registered entity or 5% or less of the negatively impacted NERC registered entities, whichever is less, of a planned	The responsible entity did not notify two impacted interconnected NERC registered entities or more than 5% and less than or equal to 10% of the negatively impacted NERC registered entities,	The responsible entity did not notify three impacted interconnected NERC registered entities or more than 10% and less than or equal to 15% of the negatively impacted NERC registered entities, whichever is	The responsible entity did not notify its Reliability Coordinator of a planned outage of telemetering equipment, monitoring and assessment capabilities, control equipment, and associated communication channels. OR,

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			outage of telemetering equipment, monitoring and assessment capabilities, control equipment, and associated communication channels between the affected entities.	whichever is less, of a planned outage of telemetering equipment, monitoring and assessment capabilities, control equipment, and associated communication channels between the affected entities.	less, of a planned outage of telemetering equipment, monitoring and assessment capabilities, control equipment and associated communication channels between the affected entities.	The responsible entity did not notify four or more impacted interconnected NERC registered entities or more than 15% of the negatively impacted NERC registered entities, whichever is less, of a planned outage of telemetering equipment, control equipment, monitoring and assessment capabilities, and associated communication channels between the affected entities.
R10	Real-Time Operations	High	N/A	N/A	N/A	The Transmission Operator did not monitor Facilities, the status of Special Protection Systems, and sub-100 kV facilities identified as necessary by the Transmission Operator, within its Transmission Operator Area and neighboring Transmission Operator Areas to determine any System Operating Limit (SOL) exceedances within its Transmission Operator Area.
R11	Real-Time Operations	High	N/A	N/A	N/A	The Balancing Authority did not monitor its Balancing Authority Area, including the

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						status of Special Protection Systems that impact generation or Load, to ensure that it is able to perform its reliability functions.
R12	Real-Time Operations	High	N/A	N/A	N/A	The Transmission Operator exceeded an identified Interconnection Reliability Operating Limit (IROL) for a continuous duration greater than its associated IROL T _v .
R13	Same-Day Operations, Real-Time Operations	High	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for one 30-minute period within that 24-hour period.	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for two 30-minute periods within that 24-hour period.	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for three 30-minute periods within that 24-hour period.	The Transmission Operator did not perform Real-time Assessments. OR, For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for three or more 30-minute periods within that 24-hour period.
R14.	Real-Time Operations	High	N/A	N/A	N/A	The Transmission Operator did not initiate its Operating Plan for mitigating a SOL exceedance identified as part

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						of its Real-time monitoring or Real-time Assessment
R15.	Real-Time Operations	Medium	N/A	N/A	N/A	The Transmission Operator did not inform its Reliability Coordinator of actions being taken to return the system to within limits when a SOL had been exceeded.
R16.	Operations Planning, Same-Day Operations, Real-Time Operations	High	N/A	N/A	N/A	The Transmission Operator did not provide its System Operators with the authority to approve planned outages and maintenance of its monitoring, telecommunication, and Real-time Assessment capabilities.
R17.	Operations Planning, Same-Day Operations, Real-Time Operations	High	N/A	N/A	N/A	The Balancing Authority did not provide its System Operators with the authority to approve planned outages and maintenance of its monitoring, telecommunications, and analysis capabilities.
R18	Operations Planning, Same-Day Operations,	High	N/A	N/A	N/A	The responsible entity failed to operate to the most limiting parameter in instances where there was a difference in SOLs.

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R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
	Real-time Operations					
R19	Operations Planning, Same-Day Operations, Real-time Operations	High	The Transmission Operator did not have data exchange capabilities with one applicable entity, or 5% or less of the applicable entities, whichever is less.	The Transmission Operator did not have data exchange capabilities with two applicable entity, or more than 5% or less than or equal to 10% of the applicable entities, whichever is less.	The Transmission Operator did not have data exchange capabilities with three applicable entity, or more than 10% or less than or equal to 15% of the applicable entities, whichever is less.	The Transmission Operator did not have data exchange capabilities with four or more applicable entities or greater than 15% of the applicable entities, whichever is less.
R20	Operations Planning, Same-Day Operations, Real-time Operations	High	The Balancing Authority did not have data exchange capabilities with one applicable entity, or 5% or less of the applicable entities, whichever is less.	The Balancing Authority did not have data exchange capabilities with two applicable entity, or more than 5% or less than or equal to 10% of the applicable entities, whichever is less.	The Balancing Authority did not have data exchange capabilities with three applicable entity, or more than 10% or less than or equal to 15% of the applicable entities, whichever is less.	The Balancing Authority did not have data exchange capabilities with four or more applicable entities or greater than 15% of the applicable entities, whichever is less.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

White paper on SOL Exceedances to be placed here.

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, including electronic data exchange, 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.