

## A. Introduction

1. **Title:** **Transmission Operations**
2. **Number:** TOP-001-2
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:** All requirements become effective the first day of the first calendar quarter twelve months following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the requirements become effective the first day of the first calendar quarter twelve months following Board of Trustees adoption, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

## B. Requirements

- R1.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each Reliability Directive issued and identified as such by its Transmission Operator(s), unless such action would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Same-day Operations, Real-Time Operations]*
- R2.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall inform its Transmission Operator of its inability to perform an identified Reliability Directive issued by that Transmission Operator. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same Day Operations, Real-time Operations]*
- R3.** Each Transmission Operator shall inform its Reliability Coordinator and Transmission Operator(s) that are known or expected to be affected by each actual and anticipated Emergency based on its assessment of its Operational Planning Analysis. *[Violation Risk Factor: High] [Time Horizon: Operations Planning,]*
- R4.** Each Transmission Operator shall render emergency assistance to other Transmission Operators, as requested and available, provided that the requesting entity has implemented its comparable emergency procedures, unless such actions would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*
- R5.** Each Transmission Operator shall inform its Reliability Coordinator and other Transmission Operators of its operations known or expected to result in an Adverse Reliability Impact on those respective Transmission Operator Areas unless conditions do not permit such communications. Examples of such operations are relay or equipment failures, and changes in generation, Transmission, or Load. *[Violation Risk Factor: High] [Time Horizon: Same-day Operations, Real-Time Operations]*

- R6.** Each Balancing Authority and Transmission Operator shall notify its Reliability Coordinator and negatively impacted interconnected NERC registered entities of planned outages of telemetering equipment, control equipment and associated communication channels between the affected entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]*
- R7.** Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T<sub>v</sub>. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
- R8.** Each Transmission Operator shall inform its Reliability Coordinator of each SOL which, while not an IROL, has been identified by the Transmission Operator as supporting reliability internal to its Transmission Operator Area based on its assessment of its Operational Planning Analysis. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

Rationale: The class of SOL included in Requirements R8, R9, and R11 was created in response to industry comments that there were SOLs that deserved increased attention. Examples of such SOLs include WECC Path SOLs, SOLs on transmission facilities maintaining service to significant events or buildings, such as the stadium for major nationally televised events, prominent government buildings, and military installations.

- R9.** Each Transmission Operator shall not operate outside any System Operating Limit (SOL) identified in Requirement R8 for a continuous duration that would cause a violation of the Facility Rating or Stability criteria upon which it is based. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*
- R10.** Each Transmission Operator shall inform its Reliability Coordinator of its actions to return the system to within limits when an IROL, or an SOL identified in Requirement R8, has been exceeded. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*
- R11.** Each Transmission Operator shall act or direct others to act, to mitigate both the magnitude and duration of exceeding an IROL within the IROL's T<sub>v</sub>, or of an SOL identified in Requirement R8. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

### C. Measures

- M1.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall make available, upon request, evidence that it complied with each Reliability Directive issued and identified as such by the Transmission Operator(s) unless such action would violate safety, equipment, regulatory, or statutory requirements, in accordance with Requirement R1. 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 event has occurred, the Balancing Authority, Generator Operator, Distribution Provider, or Load-Serving Entity may provide an attestation that an event has not occurred.
- M2.** Each Balancing Authority, Generation 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 identified, Reliability Directive(s) issued in accordance with Requirement R2. If no event has occurred, the Balancing Authority, Generator Operator, Distribution Provider, or Load-Serving Entity may provide an attestation that an event has not occurred.

- M3.** Each Transmission Operator shall make available, upon request, evidence that it has informed its Reliability Coordinator and Transmission Operators that it knew or expected to be affected by each actual and anticipated Emergency based on its assessment of its Operational Planning Analysis in accordance with Requirement R3. 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 event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.
- M4.** Each Transmission Operator shall make available, upon request, evidence that requested and available emergency assistance was rendered to other Transmission Operators in accordance with Requirement R4, unless such actions would violate 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 event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.
- M5.** Each Transmission Operator shall make available, upon request, evidence that it informed its Reliability Coordinator and other Transmission Operators of its operations known or expected to result in an Adverse Reliability Impact on those respective Transmission Operator Areas in accordance with Requirement R5, unless conditions did not permit such communications. 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 event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.
- M6.** Each Balancing Authority and Transmission Operator shall make available, upon request, evidence that it notified its Reliability Coordinator and negatively impacted interconnected NERC registered entities of planned outages of telemetering equipment, control equipment, and associated communication channels in accordance with Requirement R6. 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 event has occurred, the Balancing Authority or Transmission Operator may provide an attestation that an event has not occurred.
- M7.** Each Transmission Operator shall make available evidence for any occasion in which it has operated outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL  $T_v$ , as specified in Requirement R7. 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 no event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.
- M8.** Each Transmission Operator shall make available evidence that it has informed its Reliability Coordinator of each SOL which, while not an IROL, has been identified by the Transmission Operator as supporting reliability internal to its Transmission Operator Area based on its assessment of its Operational Planning Analysis in accordance with Requirement R8. Such evidence could include, but is not limited to, an electronic or hard copy of information from the Operational Planning Analysis used in its assessment, dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts. If no event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.
- M9.** Each Transmission Operator shall make available evidence for any occasion in which it has operated outside an SOL for a continuous duration that would cause a violation of the Facility

Rating or Stability criteria upon which it is based, as specified in Requirement R8 and in Requirement R9. 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 no event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.

**M10.** Each Transmission Operator shall make available evidence that it has informed its Reliability Coordinator of actions being taken to return the system to within limits when an IROL, or an SOL identified in Requirement R8, has been exceeded in accordance with Requirement R10. Such evidence could include, but is not limited to, dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts. If no event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.

**M11.** Each Transmission Operator shall make available evidence of when it acted or directed others to mitigate both the magnitude and duration of exceeding an IROL within the IROL's  $T_v$ , or of an SOL identified in Requirement R8, in accordance with Requirement R11. Such evidence could include, but is not limited to, dated operator logs, voice recordings or transcripts of voice recordings, or dated computer printouts. If no event has occurred, the Transmission Operator may provide an attestation that an event has not occurred.

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

- For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.
- For functional entities that work for their Regional Entity, the ERO shall serve as the Compliance Enforcement Authority.

#### **1.2. Compliance Monitoring and Enforcement Processes**

Compliance Audit

Self-Certification

Spot Checking

Compliance Investigation

Self-Reporting

Complaint

Exception Reporting

#### **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 R6, R8, and R10 through R11 and Measure M1 through M6,

M8, and M10 through M11 for the current calendar year and one previous calendar year, with the exception of voice recordings which shall be retained for a minimum of 90 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<sub>v</sub> or SOL identified in Requirement R8 as specified in Requirements R7 and R9 and Measurements M7 and M9.

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.

2. Violation Severity Levels

	Lower	Moderate	High	Severe
R1	N/A	N/A	N/A	The responsible entity did not comply with an identified Reliability Directive issued by the Transmission Operator, and such action would not have violated safety, equipment, regulatory, or statutory requirements.
R2	N/A	N/A	N/A	The responsible entity did not inform its Transmission Operator of its inability to perform an identified Reliability Directive issued by that Transmission Operator.
For the Requirement R3, R5, R6, and R8 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.				
R3	The Transmission Operator did not inform one other Transmission Operator, or 5% or less of the affected Transmission Operators, whichever is less, that are known or expected to be affected by an actual or anticipated Emergency based on its assessment of its Operational Planning Analysis.	The Transmission Operator did not inform two other Transmission Operators, or more than 5% and less than or equal to 10% of the affected Transmission Operators, whichever is less, that are known or expected to be affected by an actual or anticipated Emergency based on its assessment of its Operational Planning Analysis.	The Transmission Operator did not inform three other Transmission Operators, or more than 10% and less than or equal to 15% of the affected Transmission Operators, whichever is less, that are known or expected to be affected by an actual or anticipated Emergency based on its assessment of its Operational Planning Analysis.	The Transmission Operator did not inform its Reliability Coordinator of an actual Emergency or an anticipated Emergency condition based on its assessment of its Operational Planning Analysis. OR The Transmission Operator did not inform four or more other Transmission Operators, or more than 15% of the affected Transmission Operators, whichever is less, that are known or expected to be affected by an actual or anticipated Emergency based on its assessment of its Operational Planning Analysis.
R4	N/A	N/A	N/A	The Transmission Operator did not render emergency assistance to other Transmission Operators, as requested and available, when the requesting

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	Lower	Moderate	High	Severe
				entity had implemented its comparable emergency procedures, and such actions would not have violated safety, equipment, regulatory, or statutory requirements.
<b>R5</b>	The Transmission Operator did not inform one other Transmission Operator, or 5% or less of the affected Transmission Operators, whichever is less, of its operations known or expected to result in an Adverse Reliability Impact on respective Transmission Operator Areas when conditions did permit such communications.	The Transmission Operator did not inform two other Transmission Operators, or more than 5% and less than or equal to 10% of the affected Transmission Operators, whichever is less, of its operations known or expected to result in an Adverse Reliability Impact on respective Transmission Operator Areas when conditions did permit such communications.	The Transmission Operator did not inform three other Transmission Operators, or more than 10% and less than or equal to 15% of the affected Transmission Operators, whichever is less, of its operations known or expected to result in an Adverse Reliability Impact on respective Transmission Operator Areas when conditions did permit such communications.	The Transmission Operator did not inform its Reliability Coordinator of its operations known or expected to result in an Adverse Reliability Impact on those respective Transmission Operator Areas when conditions did permit such communications. OR The Transmission Operator did not inform four or more other Transmission Operators, or more than 15% of the affected Transmission Operators, whichever is less, of its operations known or expected to result in an Adverse Reliability Impact on those respective Transmission Operator Areas when conditions did permit such communications.
<b>R6</b>	The responsible entity did not notify one negatively-impacted interconnected NERC-registered entity, or 5% or less of the negatively impacted NERC registered entities, whichever is less, of a planned outage of telemetering equipment, control equipment, and associated communication channels between the affected entities.	The responsible entity did not notify two negatively-impacted interconnected NERC-registered entities, or more than 5% and less than or equal to 10% of the negatively impacted NERC registered entities, whichever is less, of a planned outage of telemetering equipment, control equipment, and associated communication channels between the affected entities.	The responsible entity did not notify three negatively-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 less, of a planned outage of telemetering equipment, control equipment and associated communication channels between the affected entities.	The responsible entity did not notify its Reliability Coordinator of a planned outage of telemetering equipment, control equipment, and associated communication channels. OR, The responsible entity did not notify four or more negatively-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 and

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	Lower	Moderate	High	Severe
				control equipment and associated communication channels between the affected entities.
<b>R7</b>	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 $T_v$ .
<b>R8</b>	The Transmission Operator did not inform its Reliability Coordinator of one SOL, or 5% or less of the SOLs, whichever is less, which, while not an IROL, has been identified by the Transmission Operator as supporting reliability internal to its Transmission Operator Area based on its assessment of its Operational Planning Analysis.	The Transmission Operator did not inform its Reliability Coordinator of two SOLs, or more than 5% and less than or equal to 10% of the SOLs whichever is less, which, while not IROLs, have been identified by the Transmission Operator as supporting reliability internal to its Transmission Operator Area based on its assessment of its Operational Planning Analysis.	The Transmission Operator did not inform its Reliability Coordinator of three SOLs, or more than 10% and less than or equal to 15% of the Sols whichever is less, which, while not IROLs, have been identified by the Transmission Operator as supporting reliability internal to its Transmission Operator Area based on its assessment of its Operational Planning Analysis.	The Transmission Operator did not inform its Reliability Coordinator of four or more SOLs, or more than 15% of the SOLs whichever is less, which, while not IROLs, have been identified by the Transmission Operator as supporting reliability internal to its Transmission Operator Area based on its assessment of its Operational Planning Analysis.
<b>R9</b>	N/A	N/A	N/A	The Transmission Operator exceeded a System Operating Limit (SOL), as identified in Requirement R8, for a continuous duration that would cause a violation of the Facility Rating or Stability criteria upon which it is based.
<b>R10</b>	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 an IROL, or an SOL identified in Requirement R8, had been exceeded.
<b>R11</b>	N/A	N/A	N/A	The Transmission Operator did not act, or direct others to act, to mitigate both the magnitude and duration of



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	Lower	Moderate	High	Severe
				exceeding an IROL within the IROL's T <sub>v</sub> , or of an SOL identified in Requirement R8.

**E. Regional Variances**

None identified.

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
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
2	May 9, 2012	Adopted by Board of Trustees; Revisions pursuant to Project 2007-03	Revised