

### Standard Development Roadmap

*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:

1. SAR version 1 posted on May 15, 2007.
2. SAR version 1 comment period closed on June 13, 2007.
3. SAR version 2 posted on August 7, 2007.
4. SAR version 2 comment period closed on September 7, 2007.
5. SAR approved by SC on November 1, 2007.
6. First posting of revised standards on October 7, 2008.
7. Second posting of revised standards on April 7, 2009.
8. Third posting of revised standards on August 25, 2009.
9. Fourth posting of revised standard on August 4, 2010.
10. Fifth posting of revised standard on April 26, 2011.

#### Proposed Action Plan and Description of Current Draft:

The SDT began meeting in January 2008 following the approval of the SAR by the SC. The original schedule showed completion of the project in 4Q09. As part of the proposed revisions, TOP-004-2, TOP-005-1, TOP-006-1, TOP-007-0, and TOP-008-0, and PER-001-0 will be retired. The requirements in those standards have been eliminated or moved to other standards within this project. The SDT is also recommending that 3 requirements in PRC-0001-1 be retired due to the fact that those requirements deal with data and data requirements will be covered in the proposed TOP-003-2.

#### Future Development Plan:

Anticipated Actions	Anticipated Date
1. Post for successive ballot.	4Q11
2. Post for recirculation ballot.	1Q12
3. Submit to BOT.	2Q12

### 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.*

#### **There are no new or revised definitions proposed in this standard revision.**

Three separate drafting teams wrote definitions for Reliability Directive. The three drafting teams have coordinated on a common definition and agreed that the Reliability Coordinator Standards Drafting Team (Project 2006-06) would write the definition and post it for vetting by the industry. The agreed upon definition is included here for ease of reference although it needs to be noted that this is still a draft and hasn't been approved by the industry.

**Reliability Directive** — A communication initiated by a Reliability Coordinator, Transmission Operator, or Balancing Authority where action by the recipient is necessary to address an Emergency or Adverse Reliability Impacts.

## A. Introduction

1. **Title:** **Coordination of 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 twenty-four 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 twenty-four months following Board of Trustees adoption.

## B. Requirements

- R1.** Each Balancing Authority, Generator Operator, Distribution Provider, and Load-Serving Entity shall comply with each identified Reliability Directive issued and identified as such by its Transmission Operator, unless such actions would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, 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 Operators 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. Such operations may include relay or equipment failures and changes in generation, Transmission, or Load. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations, Real-Time Operations]*
- R6.** Each Balancing Authority and Transmission Operator shall notify the Reliability Coordinator and negatively impacted interconnected NERC registered entities of planned outages of

telemetry 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  $T_v$ . *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
- R8.** Each Transmission Operator shall inform its Reliability Coordinator of each SOL which, while not IROLs, have been identified by the Transmission Operator as supporting its internal area reliability based on its assessment of its Operational Planning Analysis. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-day Operations, Real-Time Operations]*
- 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 each 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  $T_v$ , 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 identified Reliability Directive issued and identified as such by the Transmission Operator unless such actions 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.
- 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.
- 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.
- 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.

- 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.
- M6.** Each Balancing Authority and Transmission Operator shall make available upon request, evidence that it notified the 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.
- 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.
- 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 its internal area reliability 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.
- 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.
- 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.
- 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.

## **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 Audits

Self-Certifications

Spot Checking

Compliance Investigations

Self-Reporting

Complaints

## **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 to show compliance 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 three calendar months, 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 operated outside an identified IROL and its associated IROL  $T_v$  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 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.

2. Violation Severity Levels

	Lower	Moderate	High	Severe
<b>R1</b>	N/A	N/A	N/A	The responsible entity did not comply with an identified Reliability Directive issued by the Transmission Operator, unless such action would violate safety, equipment, regulatory, or statutory requirements.
<b>R2</b>	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.
<b>R3</b>	The Transmission Operator did not inform one other Transmission Operator that is 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 that are known or expected to be 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 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 that are known or expected to be affected by an actual or anticipated Emergency based on its assessment of its Operational Planning Analysis.
<b>R4</b>	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 entity had implemented its comparable emergency procedures, and such actions would not have violated safety, equipment, regulatory, or statutory requirements.

**Standard TOP-001-2 — Transmission Operations**

	Lower	Moderate	High	Severe
<p>For the Requirement R5 VSL 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>				
<b>R5</b>	<p>The Transmission Operator did not inform one other Transmission Operator of its operations known or expected to result in an Adverse Reliability Impact on that respective Transmission Operator Areas when conditions did permit such communications.</p>	<p>The Transmission Operator did not inform two other Transmission Operators 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.</p>	<p>The Transmission Operator did not inform three other Transmission Operators 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.</p>	<p>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 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.</p>
<b>R6</b>	<p>The responsible entity did not notify one negatively impacted interconnected NERC registered entity of a planned outage of telemetering equipment, control equipment, and associated communication channels between the affected entities.</p>	<p>The responsible entity did not notify two negatively impacted interconnected NERC registered entities of a planned outage of telemetering equipment, control equipment, and associated communication channels between the affected entities.</p>	<p>The responsible entity did not notify three negatively impacted interconnected NERC registered entities of a planned outage of telemetering equipment, control equipment and associated communication channels between the affected entities.</p>	<p>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 of a planned outage of telemetering and control equipment and associated communication channels between the affected entities.</p>
<b>R7</b>	N/A	N/A	N/A	<p>The Transmission Operator exceeded an identified Interconnection Reliability Operating Limit (IROL) for a</p>



**Standard TOP-001-2 — Transmission Operations**

	Lower	Moderate	High	Severe
				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 its internal area reliability.	The Transmission Operator did not inform its Reliability Coordinator of two SOLs or more than 5% or 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 its internal area reliability.	The Transmission Operator did not inform its Reliability Coordinator of three SOLs or more than 10% or 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 its internal area reliability.	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 its internal area reliability.
<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, has 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 exceeding an IROL within the IROL's $T_v$ , 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	TBD	Revisions pursuant to Project 2007-03	Revised