

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. Draft SAR Version 1 posted January 15, 2007
2. Draft SAR Version 1 Comment Period ended February 14, 2007
3. Draft SAR Version 2 and comment responses on SAR version 1 posted March 19, 2007
4. Draft Version 2 SAR comment period ended April 17, 2007
5. SAR version 2 and comment responses for SAR version 2 accepted by SC and SDT appointed in June 2007.
6. First posting of revised standards on August 5, 2008 with comment period closed on September 16, 2008.
7. Draft Version 2 of standards and response to comments September 16, 2008–May 26, 2009.
8. Second posting of revised standards on July 10, 2009 with comment period closed on August 9, 2009.
9. RC SDT coordinated with OPCP SDT and RTO SDT on definitions relating to directives and three part communication and Draft Version 3 of standards and response to comments August 9–November 20, 2009.
10. Third posting of revised standards on January 4, 2010 with comment period closed on February 3, 2010.
11. Fourth posting of revised standards for a comment period with an initial ballot from January 18, 2011 through March 7, 2011.

Proposed Action Plan and Description of Current Draft:

This is the third draft of this standard posted for a recirculation ballot. The standards that did not receive comments in the initial ballot will move forward for a recirculation ballot; standards needing significant revision will move forward to another comment period and a successive ballot. IRO-005-4 did not have any significant changes following the initial ballot and is being posted for a recirculation ballot.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Standard posted for recirculation ballots.	July 2011
2. Standard sent to BOT for approval.	August 2011
3. Standards filed with regulatory authorities.	September 2011

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.

None

Introduction

1. **Title:** Reliability Coordination — Current Day Operations
 2. **Number:** IRO-005-~~3a4~~
 - ~~3. Purpose: The Reliability Coordinator must be continuously aware of conditions within its Reliability Coordinator Area and include this information in its reliability assessments. The Reliability Coordinator must monitor Bulk Electric System parameters that may have significant impacts upon the Reliability Coordinator Area and neighboring Reliability Coordinator Areas.~~
 - ~~4. Applicability~~
 3. Purpose: To ensure that entities are notified when an expected or actual event with Adverse Reliability Impacts is identified.
 4. Applicability:
 - 4.1. Reliability Coordinators.
 - ~~4.2. Balancing Authorities.~~
 - ~~4.3. Transmission Operators.~~
 - ~~4.4. Transmission Service Providers.~~
 - ~~4.5. Generator Operators.~~
 - ~~4.6. Load-Serving Entities.~~
 - ~~4.7. Purchasing-Selling Entities.~~
- Effective Date: In those jurisdictions where regulatory approval is required, this standard shall become effective on the first day of the first calendar quarter after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the standard shall become effective on the latter of either April 1, 2009 or the first day of the first calendar quarter, three months after BOT adoption.
- ~~5. In those jurisdictions where regulatory approval is required, the this standard shall become effective on the latter first day of the first calendar quarter after Board of either April 1, 2009 or the first day of the first calendar quarter, three months after applicable regulatory approval. Trustees approval.~~

A. Requirements

- ~~R1. Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following:~~
 - ~~R1.1. Current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.~~
 - ~~R1.2. Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.~~

- ~~R1.3.~~ Current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.
- ~~R1.4.~~ System real and reactive reserves (actual versus required).
- ~~R1.5.~~ Capacity and energy adequacy conditions.
- ~~R1.6.~~ Current ACE for all its Balancing Authorities.
- ~~R1.7.~~ Current local or Transmission Loading Relief procedures in effect.
- ~~R1.8.~~ Planned generation dispatches.
- ~~R1.9.~~ Planned transmission or generation outages.
- ~~R1.10.~~ Contingency events.
- ~~R2.~~ Each Reliability Coordinator shall monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves is provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements. If necessary, the Reliability Coordinator shall direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. The Reliability Coordinator shall issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.
- ~~R3.~~ Each Reliability Coordinator shall ensure its Transmission Operators and Balancing Authorities are aware of Geo-Magnetic Disturbance (GMD) forecast information and assist as needed in the development of any required response plans.
- ~~R4.~~ The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.
- R1. When the results of an Operational Planning Analysis or Real-time Assessment indicate an anticipated or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area, each Reliability Coordinator shall notify all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area. [Violation Risk Factor: High] [Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]
- ~~R5.~~ Each Reliability Coordinator shall monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance. The Transmission Operators and Balancing Authorities shall utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.
- ~~R6.~~ The Reliability Coordinator shall coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.

- ~~R7.~~ As necessary, the Reliability Coordinator shall assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities.
- ~~R8.~~ The Reliability Coordinator shall identify sources of large Area Control Errors that may be contributing to Frequency Error, Time Error, or Inadvertent Interchange and shall discuss corrective actions with the appropriate Balancing Authority. The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.
- ~~R9.~~ Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.
- ~~R10.~~ In instances where there is a difference in derived limits, the Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
- ~~R11.~~ The Transmission Service Provider shall respect SOLs and IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
- ~~R12.~~ R2. Each Reliability Coordinator who foresees a transmission problem (such as an SOL that identifies an anticipated or IROL violation, loss of reactive reserves, etc.) actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area shall issue an alert to notify all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]*

B. Measures

- ~~M1.~~ The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, a prepared report specifically detailing compliance to each of the bullets in Requirement 1, EMS availability, SCADA data collection system communications performance or equivalent evidence that will be used to confirm that it monitors the Reliability Coordinator Area parameters specified in Requirements 1.1 through 1.9.
- ~~M2.~~ If one of its Balancing Authorities has insufficient operating reserves, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to computer printouts, operating logs, voice recordings or transcripts of voice

~~recordings, or equivalent evidence that will be used to determine if the Reliability Coordinator directed and, if needed, assisted the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities. (Requirement 2 and Requirement 7)~~

~~M3. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to determine if it informed Transmission Operators and Balancing Authorities of Geo-Magnetic Disturbance (GMD) forecast information and provided assistance as needed in the development of any required response plans. (Requirement 3)~~

~~M1. The Each Reliability Coordinator shall have and provide **upon request** evidence **that could** which may include, but is not limited to, dated operator logs, dated voice recordings or dated transcripts of voice recordings, **Hot Line recordings**, electronic communications, or equivalent **evidence documentation**, that will be used to determine **if that** it **disseminated information** notified all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area when it identified an anticipated or actual condition with Adverse Reliability Impacts, within its Reliability Coordinator Area **in accordance with Requirement 4.** (R1)~~

~~M1. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, computer printouts, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it monitored system frequency and Balancing Authority performance and directed any necessary rebalancing, as specified in Requirement 5 Part 1.~~

~~M2. The Transmission Operators and Balancing Authorities shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it utilized all resources, including firm load shedding, as directed by its Reliability Coordinator, to relieve an emergent condition. (Requirement 5 Part 2)~~

~~M3. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 6 Part 1)~~

~~M4. If a large Area Control Error has occurred, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, Hot Line recordings, electronic communications or equivalent evidence that will be used to determine if it identified sources of the Area Control Errors, and initiated corrective actions with the appropriate~~

~~Balancing Authority if the problem was within the Reliability Coordinator's Area (Requirement 8 Part 1)~~

- ~~M5. If a Special Protection System is armed and that system could have had an inter-area impact, the Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, agreements with their Transmission Operators, procedural documents, operator logs, computer analysis, training modules, training records or equivalent evidence that will be used to confirm that it was aware of the impact of that Special Protection System on inter-area flows. (Requirement 9)~~
- ~~M6. If there is an instance where there is a disagreement on a derived limit, the Transmission Operator, Balancing Authority, Generator Operator, Load-serving Entity, Purchasing-selling Entity and Transmission Service Provider involved in the disagreement 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. (Part 2 of Requirement 10)~~
- ~~M7. The Transmission Service Providers shall have and provide upon request evidence that could include, but is not limited to, procedural documents, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it respected the SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. (Requirement 11 Part 2)~~
- ~~M4. The Each Reliability Coordinator shall have and provide ~~upon request~~ evidence that ~~could~~which may include, but is not limited to, dated operator logs, dated voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent evidencedocumentation, that will be used to ~~confirm~~determine that it ~~issued alerts when it foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, to~~notified all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area ~~as specified in Requirement 12 Part 1.~~~~
- ~~M5. The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that upon receiving information such as an SOL or IROL violation, loss of reactive reserves, etc. it disseminated the information to its impacted Transmission Operators and Balancing Authorities as specified in Requirement 12 Part 2.~~
- ~~M1. Thewhen an anticipated or actual condition with Adverse Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings, electronic communications or equivalent evidence that will be used to confirm that it notified all impacted Transmission Operators, Balancing Authorities and Reliability Coordinators when a transmission problem has Impacts within its Reliability Coordinator Area had been mitigated. (Requirement 12 Part 3R2)~~

C. Compliance

1. Compliance Monitoring Process

1.1. ~~Compliance~~ **Monitoring Responsibility** ~~Enforcement Authority~~

~~The Regional Entity is the Compliance Enforcement Authority except where the Reliability Coordinator works for the Regional Entity. Where the Reliability Coordinator works for the Regional Entity, the Regional Entity will establish an agreement with the ERO or another entity approved by the ERO and FERC (i.e. another Regional Entity), to be responsible for compliance enforcement.~~

~~Regional Reliability Organizations shall be responsible for compliance monitoring.~~

1.2. Compliance Monitoring and ~~Reset Time Frame~~ **Enforcement Processes:**

~~One~~ Compliance Audit

Self-Certification

Spot Checking

Compliance Violation Investigation

Self-Reporting

Complaint

1.3. Data Retention

~~The Reliability Coordinator shall keep data or more of the following methods will be used evidence to assess show compliance:~~

~~— Self-certification (Conducted annually with submission according as identified below unless directed by its Compliance Enforcement Authority to schedule.)~~

~~— Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)~~

~~— Periodic Audit (Conducted once every three years according to schedule.)~~

~~Triggered Investigations (Notification retain specific evidence for a longer period of time as part of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)~~

~~The Performance Reset Period shall be 12 months from the last finding of non-compliance.~~

~~5.1.~~ **Data Retention**

~~For Measures 1 and 9, each~~ Reliability Coordinator shall ~~have its current in-force documents as evidence.~~

- ~~• For Measures 2–8~~ retain its evidence for the most recent 90 days for voice recordings or 12 months for other documentation for Requirements R1 and R2 and Measures ~~12 through 13, the~~ M1 and M2.

~~If a~~ Reliability Coordinator shall keep ~~90 days of historical data (evidence).~~

~~For Measure 6, the~~ Transmission Operator and Balancing Authority shall keep ~~90 days of historical data (evidence).~~

~~For Measure 10, the~~ Transmission Operator, Balancing Authority, and Transmission Service Provider shall keep ~~90 days of historical data (evidence).~~

~~For Measure 11, the~~ Transmission Service Provider shall keep ~~90 days of historical data (evidence).~~

~~If an entity is found non-compliant~~ the entity, it shall keep information related to the ~~non-compliance~~ non-compliance until found compliant ~~or for two years plus the current year, whichever is longer.~~

- ~~• Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor,.~~
- The Compliance ~~Monitor~~ Enforcement Authority shall keep the last ~~periodic audit~~ report records and all requested and submitted subsequent ~~compliance records~~ audit records or for the time period specified above, whichever is longer.

1.4. Additional Compliance Information

None.

2. Violation Severity Levels:

Requirement R#	Lower <u>YSL</u>	Moderate <u>YSL</u>	High <u>YSL</u>	Severe <u>YSL</u>
R1	The Reliability Coordinator failed to monitor one (1) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor two (2) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.	The Reliability Coordinator failed to monitor more than three (3) of the elements listed in IRO-005-1 R1.1 through R1.10.
R1.1	The Reliability Coordinator failed to monitor the current status of Bulk Electric System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems) and system loading.	N/A	N/A	N/A
R1.2	The Reliability Coordinator failed to monitor current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.	N/A	N/A	N/A

Requirement#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.3	The Reliability Coordinator failed to monitor current post-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate SOL or IROL violations, including the plan's viability and scope.	N/A	N/A	N/A
R1.4	The Reliability Coordinator failed to monitor system real and reactive reserves (actual versus required).	N/A	N/A	N/A
R1.5	The Reliability Coordinator failed to monitor capacity and energy adequacy conditions.	N/A	N/A	N/A
R1.6	The Reliability Coordinator failed to monitor current ACE for all its Balancing Authorities.	N/A	N/A	N/A
R1.7	The Reliability Coordinator failed to monitor current local or Transmission Loading Relief procedures in effect.	N/A	N/A	N/A
R1.8	The Reliability Coordinator failed to monitor planned generation dispatches.	N/A	N/A	N/A

Requirement#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.9	The Reliability Coordinator failed to monitor planned transmission or generation outages.	N/A	N/A	N/A
R1.10	The Reliability Coordinator failed to monitor contingency events.	N/A	N/A	N/A
R2	N/A	The Reliability Coordinator failed to direct the Balancing Authorities in the Reliability Coordinator Area to arrange for assistance from neighboring Balancing Authorities.	The Reliability Coordinator failed to issue Energy Emergency Alerts as needed and at the request of its Balancing Authorities and Load-Serving Entities.	The Reliability Coordinator failed to monitor its Balancing Authorities' parameters to ensure that the required amount of operating reserves was provided and available as required to meet the Control Performance Standard and Disturbance Control Standard requirements.
R3	N/A	N/A	The Reliability Coordinator ensured its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information, but failed to assist, when needed, in the development of any required response plans.	The Reliability Coordinator failed to ensure its Transmission Operators and Balancing Authorities were aware of Geo-Magnetic Disturbance (GMD) forecast information.
R4R1	N/A The Reliability Coordinator who identified an anticipated or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area	N/A The Reliability Coordinator who identified an anticipated or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area	N/A The Reliability Coordinator who identified an anticipated or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area	The Reliability Coordinator failed to disseminate information who identified an anticipated or actual condition with Adverse Reliability Impacts

Requirement#	Lower VSL	Moderate VSL	High VSL	Severe VSL
	<p><u>failed to issue an alert to one, but not all, impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area.</u></p>	<p><u>failed to issue an alert to two, but not all, impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area.</u></p>	<p><u>failed to issue an alert to three, but not all, impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area.</u></p>	<p><u>within its Reliability Coordinator Area, when required: failed to issue an alert to more than three impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area.</u></p> <p><u>OR</u></p> <p><u>The Reliability Coordinator who identified an anticipated or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area failed to issue an alert to all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area (in cases where there are less than three impacted entities).</u></p>
R5	N/A	N/A	<p><u>The Reliability Coordinator monitored system frequency and its Balancing Authorities' performance but failed to direct any necessary rebalancing to return to CPS and DCS compliance.</u></p>	<p><u>The Reliability Coordinator failed to monitor system frequency and its Balancing Authorities' performance and direct any necessary rebalancing to return to CPS and DCS compliance or the responsible entity failed to utilize all resources, including firm load shedding, as directed by its Reliability Coordinator to relieve the emergent condition.</u></p>
R6	N/A	The Reliability Coordinator	The Reliability Coordinator	The Reliability Coordinator

Requirement R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
		<p>coordinated with Transmission Operators, Balancing Authorities, and Generator Operators, as needed, to develop action plans to mitigate potential or actual SOL, CPS, or DCS violations but failed to implement said plans, or the Reliability Coordinator coordinated pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in the real-time reliability analysis timeframe but failed to coordinate pending generation and transmission maintenance outages in the next-day reliability analysis timeframe.</p>	<p>failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations, or the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.</p>	<p>failed to coordinate with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, CPS, or DCS violations and the Reliability Coordinator failed to coordinate pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real-time and next-day reliability analysis timeframes.</p>
R7	N/A	N/A	N/A	<p>The Reliability Coordinator failed to assist the Balancing Authorities in its Reliability Coordinator Area in arranging for assistance from neighboring Reliability Coordinator Areas or Balancing Authorities, when necessary.</p>

Requirement#	Lower <u>VSL</u>	Moderate <u>VSL</u>	High <u>VSL</u>	Severe <u>VSL</u>
R8	N/A	<p>The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange and discussed corrective actions with the appropriate Balancing Authority but failed to direct the Balancing Authority to comply with CPS and DCS.</p>	<p>The Reliability Coordinator identified sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange but failed to discuss corrective actions with the appropriate Balancing Authority.</p>	<p>The Reliability Coordinator failed to identify sources of large Area Control Errors that were contributing to Frequency Error, Time Error, or Inadvertent Interchange.</p>
R9	N/A	N/A	N/A	<p>The Reliability Coordinator failed to be aware of the impact on inter-area flows of an inter-Balancing Authority or inter-Transmission Operator, following the operation of a Special Protection System that is armed (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation), or the Transmission Operator failed to immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected.</p>
R10	N/A	N/A	N/A	The responsible entity failed

Requirement#	Lower VSL	Moderate VSL	High VSL	Severe VSL
				to operate the Bulk Electric System to the most limiting parameter in instances where there was a difference in derived limits.
R11	N/A	N/A	N/A	The Transmission Service Provider failed to respect SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes.
R12R2	N/A <u>The Reliability Coordinator failed to notify one, but not all, impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.</u>	The Reliability Coordinator failed to notify <u>two, but not all,</u> impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.	N/A <u>The Reliability Coordinator failed to notify three, but not all, impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.</u>	The Reliability Coordinator who foresaw a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area failed to issue an alert to all <u>notify more than three</u> impacted Transmission Operators and, Balancing Authorities in its Reliability Coordinator Area, or, when the receiving transmission problem had been mitigated. <u>OR</u> The Reliability Coordinator failed to disseminate this information to its <u>notify more all</u> impacted Transmission

Requirement R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
				Operators and , Balancing Authorities ; , <u>when the transmission problem had been mitigated (in cases where there are less than three impacted entities).</u>

D. Regional Differences

None identified.

E. Associated Documents**Version History**

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
<u>1</u>	<u>August 28, 2006</u>	<u>Added three items that were inadvertently left out to “Applicability” section:</u> <u>4.5 Generator Operators.</u> <u>4.6 Load-Serving Entities.</u> <u>4.7 Purchasing-Selling Entities.</u>	<u>Errata</u>
<u>1</u>	<u>February 7, 2006</u>	<u>BOT Approval</u>	<u>Revised</u>
<u>1</u>	<u>April 4, 2007</u>	<u>Regulatory Approval — Effective Date</u>	<u>New</u>
<u>2</u>	<u>November 1, 2006</u>	<u>BOT Approval</u>	<u>Revised under Missing Measures & Compliance Elements Project</u>
<u>13a</u>	<u>October 17, 2008</u>	Retired R2, R3, R5; modified, R16, R17 and revised R9, R13 and, R14 ; retired R16 and R17 Retired M2 and M3; modified M9 and M12; retired M13 Made conforming changes to data retention Replaced Levels of Non-compliance eliminate redundancy or conflicts with the Feb 28, BOT approved Violation Severity Levels (VSLs) Retired VSLs associated with R2, R3, R5, R16 and R17; Modified VSLs associated with R9 and R13, and R14 <u>IRO standards IRO-009-1, and IRO-010-1</u>	<u>Revised IROL Project – conforming changes and interpretation</u>

2	November 1, 2006 To be determined	Approved by the Board of Trustees Retired R1-R11; revised R12	Project 2006-06
2	January 1, 2007	Effective Date	
2a	November 5, 2009	Approved by the Board of Trustees	
3	October 17, 2008	Approved by the Board of Trustees	
3	March 23, 2011	Order issued by FERC approving IRO-005-3 (approval effective 5/23/11)	
3a	April 21, 2011	Added FERC-approved Interpretation	

Appendix 1

Requirement Number and Text of Requirement

TOP-005-1 Requirement R3

~~Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1 TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.~~

~~The above referenced Attachment 1 — TOP-005-0 specifies the following data as item 2.6: New or degraded special protection systems. [Underline added for emphasis.]~~

IRO-005-1 Requirement R12[†]

~~**R12.** Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator impact (e.g., could potentially affect transmission flows resulting in a SOL or IROL violation) is armed, the Reliability Coordinators shall be aware of the impact of the operation of that Special Protection System on inter-area flows. The Transmission Operator shall immediately inform the Reliability Coordinator of the status of the Special Protection System including any degradation or potential failure to operate as expected. [Underline added for emphasis.]~~

PRC-012-0 Requirements R1 and R1.3

~~**R1.** Each Regional Reliability Organization with a Transmission Owner, Generator Owner, or Distribution Providers that uses or is planning to use an SPS shall have a documented Regional Reliability Organization SPS review procedure to ensure that SPSs comply with Regional criteria and NERC Reliability Standards. The Regional SPS review procedure shall include:~~

~~**R1.3.** Requirements to demonstrate that the SPS shall be designed so that a single SPS component failure, when the SPS was intended to operate, does not prevent the interconnected transmission system from meeting the performance requirements defined in Reliability Standards TPL-001-0, TPL-002-0, and TPL-003-0.~~

Background Information for Interpretation

~~The TOP-005-1 standard focuses on two key obligations. The first key obligation (Requirement R1) is a “responsibility mandate.” Requirement R1 establishes who is responsible for the obligation to provide operating data “required” by a Reliability Coordinator within the framework of the Reliability Coordinator requirements defined in the IRO standards. The second key obligation (Requirement R3) is a “performance mandate.” Requirement R3 defines the obligation to provide data “requested” by other reliability entities that is needed “to perform~~

[†] In the current version of the Standard (IRO-005-3a), this requirement is R9.

assessments and to coordinate operations.”

The Attachment to TOP-005-1 is provided as a guideline of what “can be shared.” The Attachment is not an obligation of “what must be shared.” Enforceable NERC Requirements must be explicitly contained within a given Standard’s approved requirements. In this case, the standard only requires data “upon request.” If a Reliability Coordinator or other reliability entity were to request data such as listed in the Attachment, then the entity being asked would be mandated by Requirements R1 and R3 to provide that data (including item 2.6, whether it is or is not in some undefined “degraded” state).

IRO-002-1 requires the Reliability Coordinator to have processes in place to support its reliability obligations (Requirement R2). Requirement R4 mandates that the Reliability Coordinator have communications processes in place to meet its reliability obligations, and Requirement R5 et al mandate the Reliability Coordinator to have the tools to carry out these reliability obligations.

IRO-003-2 (Requirements R1 and R2) requires the Reliability Coordinator to monitor the state of its system.

IRO-004-1 requires that the Reliability Coordinator carry out studies to identify Interconnection Reliability Operating Limits (Requirement R1) and to be aware of system conditions via monitoring tools and information exchange.

IRO-005-1 mandates that each Reliability Coordinator monitor predefined base conditions (Requirement R1), collect additional data when operating limits are or may be exceeded (Requirement R3), and identify actual or potential threats (Requirement R5). The basis for that request is left to each Reliability Coordinator. The Purpose statement of IRO-005-1 focuses on the Reliability Coordinator’s obligation to be aware of conditions that may have a “significant” impact upon its area and to communicate that information to others (Requirements R7 and R9). Please note: it is from this communication that Transmission Operators and Balancing Authorities would either obtain or would know to ask for SPS information from another Transmission Operator.

The IRO-005-1 (Requirement R12) standard implies that degraded is a condition that will result in a failure to operate as designed. If the loss of a communication channel will result in the failure of an SPS to operate as designed then the Transmission Operator would be mandated to report that information. On the other hand, if the loss of a communication channel will not result in the failure of the SPS to operate as designed, then such a condition can be, but is not mandated to be, reported.

Conclusion

The TOP-005-1 standard does not provide, nor does it require, a definition for the term “degraded.”

The IRO-005-1 (R12) standard implies that degraded is a condition that will result in a failure of an SPS to operate as designed. If the loss of a communication channel will result in the failure of an SPS to operate as designed, then the Transmission Operator would be mandated to report that information. On the other hand, if the loss of a communication channel will not result in the failure of the SPS to operate as designed, then such a condition can be, but is not mandated to be,

~~reported.~~

~~To request a formal definition of the term degraded, the Reliability Standards Development Procedure requires the submittal of a Standards Authorization Request.~~