

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.

Proposed Action Plan and Description of Current Draft:

The SDT began working on revisions to the standards in August 2007. The current posting contains revisions based on stakeholder comments on the third draft. The team is posting for a 30 day pre-ballot review.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Respond to comments on third posting	March 2010
2. Post Standards for pre-ballot period.	January 2011
3. Standards posted for initial and recirculation ballots.	February 2011
4. Standards sent to BOT for approval.	March 2011
5. Standards filed with regulatory authorities.	June 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.

Interpersonal Communication: Any medium~~thod~~ that allows two or more individuals to interact, consult, or exchange information.

Alternative Interpersonal Communication: Any ~~method~~ Interpersonal Communication that is able to serve as a substitute for, ~~and is redundant to normal Interpersonal Communication~~ and does not utilize the same infrastructure (medium) as, ~~normal~~ Interpersonal Communications used for day-to-day operation.

Introduction

1. **Title:** Reliability Coordination — Current Day Operations
2. **Number:** IRO-005-~~44~~
3. **Purpose:** ~~To ensure that entities are notified when an expected or actual event with Adverse Reliability Impacts is identified. 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:**
 - ~~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.~~
 - ~~4.7.4.1. Purchasing-Selling Entities.~~
5. **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, this standard shall become effective on the first day of the first calendar quarter after Board of Trustees approval June 4, 2007.

The RCSDT is proposing to retire or move all requirements in this standard. This will result in retiring IRO-005-1.

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B.A. Requirements

- R1.** Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following: *[Violation Risk Factor: High]*
- ~~1.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. *[Violation Risk Factor: High]*
 - ~~2.R1.2.~~ Current pre-contingency element conditions (voltage, thermal, or stability), including any applicable mitigation plans to alleviate System Operating Limits (SOL) or Interconnection Reliability Operating Limits (IROL) violations, including the plan's viability and scope. *[Violation Risk Factor: High]*
 - ~~3.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. *[Violation Risk Factor: High]*

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Monitoring capability can **not** be objectively measured and is essential to real-time operations – however real-time monitoring is a supportin of several support o paramete should be assessed during certification and should not be a requirement. We propose retiring R1 and its subrequirements.

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~~4.R1.4.~~ System real and reactive reserves (actual versus required). *[Violation Risk Factor: High]*

~~5.R1.5.~~ Capacity and energy adequacy conditions. *[Violation Risk Factor: High]*

~~6.R1.6.~~ Current Area Control Error (ACE) for all its Balancing Authorities. *[Violation Risk Factor: High]*

~~7.R1.7.~~ Current local or Transmission Loading Relief procedures in effect. *[Violation Risk Factor: High]*

~~8.R1.8.~~ Planned generation dispatches. *[Violation Risk Factor: High]*

~~9.R1.9.~~ Planned transmission or generation outages. *[Violation Risk Factor: High]*

~~10.R1.10.~~ Contingency events. *[Violation Risk Factor: High]*

~~R2.~~ Each Reliability Coordinator shall be aware of all Interchange Transactions that wheel through, source, or sink in its Reliability Coordinator Area, and make that Interchange Transaction information available to all Reliability Coordinators in the Intereconnection. *[Violation Risk Factor: High]*

This requirement (R2) is not measurable (aware) and should be retired because it is redundant with INT-005, R1. The IA is responsible for making interchange information available to all reliability entities including the reliability Coordinator.

~~R3.~~ As portions of the transmission system approach or exceed SOLs or IROLs, the Reliability Coordinator shall work with its Transmission Operators and Balancing Authorities to evaluate and assess any additional Interchange Schedules that would violate those limits. If a potential or actual IROL violation cannot be avoided through proactive intervention, the Reliability Coordinator shall initiate control actions or emergency procedures to relieve the violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall ensure all resources, including load shedding, are available to address a potential or actual IROL violation. *[Violation Risk Factor: High]*

~~This requirement (R3 was retired) is proposed to be retired based on work by the IROL Standards Drafting Team. The RCSDT concurs.~~

~~R4.~~ 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 (CPS) and Disturbance Control Standard (DCS) 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. *[Violation Risk Factor: High]*

The BA has its own requirements regarding compliance with CPS and DCS standards as well as requesting emergency assistance. We view these as vestiges of an earlier program that no longer apply given the current mandatory requirements with which the BA must comply. We recommend retiring requirement 4.

~~R5.~~ Each Reliability Coordinator shall identify the cause of any potential or actual SOL or IROL violations. The Reliability Coordinator shall initiate the control action or emergency procedure to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The Reliability Coordinator shall be able to utilize all resources, including load shedding, to address an IROL violation. *[Violation Risk Factor: High]*

~~This requirement (R5 was retired by) is proposed to be retired based on work by the IROL Standards Drafting Team. The RCSDT concurs.~~

The RCSDT retiring this requirement as it is addressed in redundant with proposed IRO-001-2, R1R15 below. A GMD is one of the "expected or actual threats with Adverse Reliability Impacts".

- R6.** 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. *[Violation Risk Factor: High]*
- R7.** The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required. *[Violation Risk Factor: High]*
- R8.** 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. *[Violation Risk Factor: High]*
- R9.** 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, IROL, 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 time frames. *[Violation Risk Factor: High]*
- R10.** 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. *[Violation Risk Factor: High]*
- R11.** 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. *[Violation Risk Factor: High]*
- 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. *[Violation Risk Factor: High]*

The RCSDT proposes retiring requirement 7 as it is too vague and can not be measured.

The BA has its own requirements regarding compliance with CPS and DCS standards as well as requesting emergency assistance. We view these as vestiges of an earlier program that no longer apply given the current mandatory requirements with which the BA must comply. We recommend retiring requirement 8. The second sentence is redundant with EOP-002, R4, R6, R7 and R9. This requirement should be retired.

The RCSDT proposes retiring this requirement as it is redundant with TOP-003 and IRO-004 (all requirements) for next day requirements. The RC has the authority to coordinate pending outages in real-time through IRO-001-2, R1 (proposed). The issue of CPS and DCS is covered in EOP-002-2, R6, R7 and R8.

The RCSDT proposes retiring requirement 10 as it is redundant with EOP-002, R7.2 and R8.

The RCSDT proposes retiring requirement 11 as it is redundant with proposed IRO-001-2 R1 and TOP-006-1, R7.

The RCSDT proposes retiring requirement 12 as it is redundant with proposed IRO-010. Also, the scope of project 2007-3 includes enhancing the SPS provisions of TOP-005. IRO-003, R1 indicates that the RC will monitor all items that will impact reliability and SPS's are a part of that.

R13. Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load Serving Entities, and Purchasing Selling Entities operate to prevent the likelihood that a disturbance, action, or non action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its 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. *[Violation Risk Factor: High]*

The IROL SDT has proposed retiring the first sentence of this requirement as it is redundant with the proposed IRO-009-1. The RCSDT recommends retiring the remaining portion of this requirement as it is a facet of the SOL / IROL methodology required in FAC-010-1, FAC-011-1 and FAC-014-1. 2007-3 includes enhancing the SPS provisions of TOP-005. IRO-003, R1 indicates that the RC will monitor all items that will impact reliability and SPS's are a part of that.

R14. Each Reliability Coordinator shall make known to Transmission Service Providers within its Reliability Coordinator Area, SOLs or IROLs within its wide area view. The Transmission Service Providers shall respect these SOLs or IROLs in accordance with filed tariffs and regional Total Transfer Calculation and Available Transfer Calculation processes. *[Violation Risk Factor: High]*

~~R~~Per the IROL SDT, requirement 14 was retired by the work of the IROL SDT, is redundant with FAC 014, R5.1 and should be retired. The RCSDT concurs.

R15. When the results of an Operational Planning Analysis or Real-time Assessment indicate ~~Each Reliability Coordinator~~ an expected or actual condition with Adverse Reliability Impacts who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area, ~~each Reliability Coordinator~~ shall notify issue an alert to 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. *[Violation Risk Factor: High]*
[Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]

R15.R16. ~~The Each Reliability Coordinator that identifies an expected or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area shall notify all impacted Transmission Operators and~~ Balancing Authorities ~~in its Reliability Coordinator Area,~~ when the transmission problem has been mitigated. *[Violation Risk Factor: Medium]* *[Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]*~~High]~~

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R16.R17. Each Reliability Coordinator shall confirm reliability assessment results and determine the effects within its own and adjacent Reliability Coordinator Areas. The Reliability Coordinator shall discuss options to mitigate potential or actual SOL or IROL violations and take actions as necessary to always act in the best interests of the Interconnection at all times. *[Violation Risk Factor: High]*

Requirement 176 was retired is proposed to be retired based on work by the IROL Standards Drafting Team. The RCSDT concurs.

R17.R18. When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide area impacts, both real-time and post contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the

Requirement 187 was retired is proposed to be retired based on work by the IROL Standards Drafting Team. The RCSDT concurs.

~~Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load Serving Entity to return the system to within IROL or SOL. [Violation Risk Factor: High]~~

~~C.B.~~ **Measures**

M1. Each Reliability Coordinator shall have and provide evidence which may include, but is not limited to dated operator logs, dated voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent documentation, that will be used to determine that it notified all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area when it identified a real or potential condition with Adverse Reliability Impacts, within its Reliability Coordinator Area. (R1)

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M2. Each Reliability Coordinator shall have and provide evidence which may include, but is not limited to dated operator logs, dated voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent documentation, that will be used to determine that it notified all impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area when a real or potential condition with Adverse Reliability Impacts within its Reliability Coordinator Area had been mitigated. (R2)

Not specified.

~~D.C.~~ **Compliance**

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1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

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Regional Entity

1.2. Compliance Monitoring and Enforcement Processes:

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Compliance Audits

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Self-Certifications

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Spot Checking

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Compliance Violation Investigations

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Self-Reporting

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Complaints

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1.3. Data Retention

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The Reliability Coordinator shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- o The Reliability Coordinator shall 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 M1 and M2.

o If a Reliability Coordinator is found non-compliant, it shall keep information related to the non-compliance until found compliant.

o The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records or for the time period specified above, whichever is longer.

1.4. Additional Compliance Information

None.

2. Violation Severity Levels

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Lower VSL	Moderate VSL	High VSL	Sev
<p><u>The Reliability Coordinator who identified an expected or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area 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>The Reliability Coordinator who identified an expected or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area 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>The Reliability Coordinator who identified an expected or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area 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>The Reliability Coordinator who identified an expected or actual condition with Adverse Reliability Impacts within its Reliability Coordinator Area failed to issue an alert to more than three impacted Transmission Operators and Balancing Authorities in its Reliability Coordinator Area.</u></p> <p>OR</p> <p><u>The Reliability Coordinator who identified an expected 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>
<p><u>The Reliability Coordinator failed to notify one, but not all, impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.</u></p>	<p><u>The Reliability Coordinator failed to notify two, but not all, impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.</u></p>	<p><u>The Reliability Coordinator failed to notify three, but not all, impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.</u></p>	<p><u>The Reliability Coordinator failed to notify more than three impacted Transmission Operators, Balancing Authorities, when the transmission problem had been mitigated.</u></p> <p>OR</p> <p><u>The Reliability Coordinator failed to notify more all impacted Transmission Operators, Balancing Authorities, when the</u></p>

Low VSL	Moderate VSL	High VSL	Severe VSL
			transmission problem had been mitigated (in cases where there are less than three impacted entities).

E.D. Regional Differences

None identified.

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F.E. Associated Documents

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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	August 28, 2006	Added three items that were inadvertently left out to “Applicability” section: 4.5 Generator Operators. 4.6 Load-Serving Entities. 4.7 Purchasing-Selling Entities.	Errata
1	February 7, 2006	BOT Approval	Revised
1	April 4, 2007	Regulatory Approval — Effective Date	New
<u>2</u>	<u>August 3, 2010</u>	<u>Revised under Project 2006-06</u>	<u>Revised</u>