

A. Introduction

1. **Title:** Reliability Coordination – ~~Facilities~~Analysis Tools
2. **Number:** IRO 002-~~1~~2
3. **Purpose:** ~~Reliability Coordinators need information, tools and other capabilities to perform their responsibilities.~~To ensure that Reliability Coordinators provide their System Operators with authority with respect to analysis tool outages and to have procedures to mitigate effects of analysis tool outages.
4. **Applicability**
 - 4.1. Reliability Coordinators.
5. **Effective Date:** ~~TBD~~ June 4, 2007

B. Requirements

~~**R1.** Each Reliability Coordinator shall have adequate communications facilities (voice and data links) to appropriate entities within its Reliability Coordinator Area. These communications facilities shall be staffed and available to act in addressing a real-time emergency condition.~~

The RC SDT proposes retiring R1. The first sentence of this requirement is a basic facility requirement that should be addressed in certification. The second sentence is redundant with PER-004, R1 which requires the RC to be staffed 24x7.

~~**R2.** Each Reliability Coordinator shall determine the data requirements to support its reliability coordination tasks and shall request such data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities, or adjacent Reliability Coordinators.~~

The IROL SDT retired R2.

~~**R3.** Each Reliability Coordinator—or its Transmission Operators and Balancing Authorities—shall provide, or arrange provisions for, data exchange to other Reliability Coordinators or Transmission Operators and Balancing Authorities via a secure network.~~

The RC SDT proposes retiring R3. The TOP and BA portion of this requirement is redundant with TOP-005, R1. The RC to RC data exchange provisions are covered in IRO-014. The secure network is covered by the NERC Rules of Procedure, Section 1002. This requirement should be retired.

~~**R4.** Each Reliability Coordinator shall have multi-directional communications capabilities with its Transmission Operators and Balancing Authorities, and with neighboring Reliability Coordinators, for both voice and data exchange as required to meet reliability needs of the Interconnection.~~

The RC SDT proposes retiring R4 as it is a basic facility requirement that should be addressed in certification.

~~**R5.** Each Reliability Coordinator shall have detailed real-time monitoring capability of its Reliability Coordinator Area and sufficient monitoring capability of its surrounding Reliability Coordinator Areas to ensure that potential or actual System Operating~~

The RC SDT proposes retiring R5 as it is a basic facility requirement that should be addressed in certification.

~~Limit or Interconnection Reliability Operating Limit violations are identified. Each Reliability Coordinator shall have monitoring systems that provide information that can be easily understood and interpreted by the Reliability Coordinator's operating personnel, giving particular emphasis to alarm management and awareness systems, automated data transfers, and synchronized information systems, over a redundant and highly reliable infrastructure.~~

~~**R6.** Each Reliability Coordinator shall monitor Bulk Electric System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within its Reliability Coordinator Area. Each Reliability Coordinator shall monitor both real and reactive power system flows, and operating reserves, and the status of Bulk Electric System elements that are or could be critical to SOLs and IROLs and system restoration requirements within its Reliability Coordinator Area.~~

The RC SDT proposes retiring R6. Real-time monitoring is a supporting activity and is one of several processes used to support operation. It is not practical to measure real-time monitoring nor is this necessary. The real reliability objective is to operate within SOL and IROL, not to monitor.

~~**R7.** Each Reliability Coordinator shall have adequate analysis tools such as state estimation, pre and post contingency analysis capabilities (thermal, stability, and voltage), and wide area overview displays.~~

The RC SDT proposes retiring R7 as it is a basic facility requirement that should be addressed in certification.

~~**R8.** Each Reliability Coordinator shall continuously monitor its Reliability Coordinator Area. Each Reliability Coordinator shall have provisions for backup facilities that shall be exercised if the main monitoring system is unavailable. Each Reliability Coordinator shall ensure SOL and IROL monitoring and derivations continue if the main monitoring system is unavailable.~~

The RC SDT proposes retiring R8. Real-time monitoring is a supporting activity and is one of several processes used to support operation. It is not practical to measure real-time monitoring nor is this necessary. The real reliability objective is to operate within SOL and IROL, not to monitor. The second and third sentences are redundant with EOP-008, R1.

R1. Each Reliability Coordinator shall provide its System Operators with the authority to approve, deny or cancel planned outages of its own analysis tools ~~control its Reliability Coordinator analysis tools, including approvals for planned maintenance.~~ *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]*

~~**R9-R2.**~~ Each Reliability Coordinator shall have procedures in place to mitigate the effects of analysis tool outages. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]*

C. Measures

~~**M1.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a document that lists its voice communications facilities with Transmission Operators, Balancing Authorities and Generator Operators within its Reliability Coordinator Area and with neighboring Reliability Coordinators, that will be used to confirm that it has communication facilities in accordance with Requirements 1 and 4.~~

~~**M2.** Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a data link facility description document, computer print out, training document, or other equivalent evidence that will be used to confirm that it has data links with~~

~~entities within its Reliability Coordinator Area and with neighboring Reliability Coordinators, as specified in Requirements 1 and 4.~~

~~M3. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a letter to Transmission Operators, Balancing Authorities, Transmission Owners, Generator Owners, Generator Operators, and Load Serving Entities, or adjacent Reliability Coordinators, or other equivalent evidence that will be used to confirm that the Reliability Coordinator has requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~M4. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, Energy Management System description documents, computer printouts, SCADA data collection system communications performance or equivalent evidence to demonstrate that it has real-time monitoring capability of its Reliability Coordinator Area and monitoring capability of its surrounding Reliability Coordinator Areas to identify potential or actual System Operating Limit or Interconnection Reliability Operating Limit violations.~~

~~M5. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, documentation from suppliers, operating and planning staff training documents, examples of studies, or other equivalent evidence to show that it has analysis tools in accordance with Requirement 7.~~

~~M6. Each Reliability Coordinator shall provide evidence such as equipment specifications, operating procedures, staff records of their involvement in training, or other equivalent evidence to show that it has a backup monitoring facility that can be used to identify and monitor SOLs and IROLs. (Requirement 8)~~

~~M7. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that the Reliability Coordinator has provided its System Operator with the authority to approve, deny or cancel planned outages of its own analysis tools ~~the Reliability Coordinator has the authority to veto planned outages to analysis tools, including final approvals for planned maintenance as specified in Requirement 9 Part 1. (R9)~~~~

~~M8. Each Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, a documented procedure or equivalent evidence that will be used to confirm that that the Reliability Coordinator has procedures in place to mitigate the effects of analysis tool outages. (R10)~~

~~M8.M9. Each Reliability Coordinator shall have and provide upon request its current procedures used to mitigate the effects of analysis tool outages as specified in Requirement 9 Part 2.~~

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance ~~Monitoring Responsibility~~Enforcement Authority

~~Regional Reliability Organizations shall be responsible for compliance.~~
Monitoring Entity

1.2. Compliance Monitoring and Enforcement Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

~~1.2. Compliance Monitoring and Reset Time Frame~~

~~One or more of the following methods will be used to assess compliance:~~

- ~~— Self certification (Conducted annually with submission according 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 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.~~

1.3. Data Retention

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:

- The Reliability Coordinator shall retain its current, in force document and any documents in force for the current year and previous calendar year for Requirements R9 and R10 and Measures M9 and M10. The Reliability Coordinator shall have current in force documents used to show compliance with the Measures.
- If a Reliability Coordinator is found non-compliant, it shall keep information related to the non-compliance until found compliant.
- The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

~~Each Reliability Coordinator shall have current in force documents used to show compliance with Measures 1 through 8.~~

~~If an entity is found non-compliant the entity shall keep information related to the noncompliance 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 shall keep the last periodic audit report and all requested and submitted subsequent compliance records.~~

1.4. Additional Compliance Information

None.

~~2. Levels of Non-Compliance for a Reliability Coordinator~~

~~2.1. Level 1: Not applicable.~~

~~2.2. Level 2: Did not confirm that the network used for data exchange to other Reliability Coordinators is secure as specified in R3.~~

~~2.3. Level 3: There shall be a separate Level 3 non-compliance, for every one of the following requirements that is in violation:~~

~~2.3.1 Has not requested the data required to support its reliability coordination tasks. (Requirement 2)~~

~~2.3.2 Does not control its Reliability Coordinator analysis tools, including the exercising of final approvals for planned maintenance (R7) or does not have current procedures in place to mitigate the effects of analysis tool outages as specified in R9.~~

~~2.4. Level 4: There shall be a separate Level 4 non-compliance, for every one of the following requirements that is in violation:~~

~~2.4.1 Does not have or could not demonstrate the use of voice communication facilities (or show data links) to one or more Transmission Operators, Generator Operators or Balancing Authorities with authority over Bulk Electrical System equipment or with one or more neighboring Reliability Coordinators. (R1 and R4)~~

~~2.4.2 Does not have real-time monitoring capability of its Reliability Coordinator Area and surrounding Reliability Coordinator Areas as specified in R5.~~

~~1.4.1 Does not have a documented procedure for the use of its backup monitoring facilities. (R8)~~

2.4.3 — Violation Severity Levels

<u>R#</u>	<u>Lower VSL</u>	<u>Moderate VSL</u>	<u>High VSL</u>	<u>Severe VSL</u>
R2	<p>The Reliability Coordinator demonstrated that it</p> <p>1) determined its data requirements and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators with a material impact on the Bulk Electric System in its Reliability Coordination Area but did not request the data from Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators with minimal impact on the Bulk Electric System in its Reliability Coordination Area</p> <p>or</p> <p>2) determined its data</p>	<p>The Reliability Coordinator demonstrated that it determined the majority but not all of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators.</p>	<p>The Reliability Coordinator demonstrated that it determined</p> <p>1) some but less than the majority of its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators</p> <p>Or</p> <p>2) all of its data requirements necessary to support its reliability coordination functions but failed to demonstrate that it requested data from two of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators.</p>	<p>The Reliability Coordinator failed to demonstrate that it</p> <p>1) determined its data requirements necessary to support its reliability coordination functions and requested that data from its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators</p> <p>Or</p> <p>2) requested the data from three or more of its Transmission Operators, Balancing Authorities, Transmission Owners, Generation Owners, Generation Operators, and Load Serving Entities or Adjacent Reliability Coordinators.</p>

	requirements necessary to perform its reliability functions with the exceptions of data that may be needed for administrative purposes such as data reporting.			
R9	Reliability Coordinator has approval rights for planned outages of analysis tools but does not have approval rights for maintenance on analysis tools. N/A	N/A	N/A	The Reliability Coordinator failed to provide its System Operator with the authority to approve, deny or cancel planned outages of its own analysis tools. Reliability Coordinator approval is not required for planned maintenance or planned outages.
R10	N/A	N/A	N/A	The Reliability Coordinator failed to have a procedure to mitigate the effects of analysis tool outages

E. Regional ~~Differences~~Variances

None identified.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata

1	November 1, 2006	Adopted by Board of Trustees	Revised
1	April 4, 2007	Regulatory Approval — Effective Date	New
<u>2</u>		<u>Retired R1, R3-8</u>	<u>Revised</u>