

IRO-009-2 – Reliability Coordinator Actions to Operate Within IROLs

A. Introduction

1. **Title:** Reliability Coordinator Actions to Operate Within IROLs
2. **Number:** IRO-009-2
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 instances of exceeding Interconnection Reliability Operating Limits (IROLs).
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1. Reliability Coordinator.
5. **Effective Date*:** See the Implementation Plan for IRO-009-2.

B. Requirements and Measures

- R1.** For each IROL (in its Reliability Coordinator Area) that the Reliability Coordinator identifies one or more days prior to the current day, the Reliability Coordinator shall have one or more Operating Processes, Procedures, or Plans that identify actions the Reliability Coordinator shall take or actions the Reliability Coordinator shall direct others to take (up to and including load shedding): *[Violation Risk Factor: Medium]* *[Time Horizon: Operations Planning or Same Day Operations]*
 - 1.1. That can be implemented in time to prevent the identified IROL exceedance.
 - 1.2. To mitigate the magnitude and duration of an IROL exceedance such that the IROL exceedance is relieved within the IROL's T_v .
- M1.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it has Operating Processes, Procedures, or Plans to address both preventing and mitigating the magnitude and duration of IROL exceedances in accordance with Requirement R1. This evidence shall include a list of any IROLs (and each associated T_v) identified in advance, along with one or more dated Operating Processes, Procedures, or Plans that will be used.
- R2.** Each Reliability Coordinator shall initiate one or more Operating Processes, Procedures, or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirement R1) that are intended to prevent an IROL exceedance, as identified in the Reliability Coordinator's Real-time monitoring or Real-time Assessment. *[Violation Risk Factor: High]* *[Time Horizon: Real-time Operations]*
- M2.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it initiated one or more Operating Processes, Procedures or Plans (not limited to the Operating Processes, Procedures, or Plans developed for Requirements R1) in accordance with Requirement R2. This evidence could include, but is not

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limited to, Operating Processes, Procedures, or Plans from Requirement R1, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.

- R3.** Each Reliability Coordinator shall act or direct others to act so that the magnitude and duration of an IROL exceedance is mitigated within the IROL's T_v , as identified in the Reliability Coordinator's Real-time monitoring or Real-time Assessment. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
- M3.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it acted or directed others to act in accordance with Requirement R3. This evidence could include, but is not limited to, Operating Processes, Procedures, or Plans, dated operating logs, dated voice recordings, dated transcripts of voice recordings, or other evidence.
- R4.** Each Reliability Coordinator shall operate to the most limiting IROL and T_v in instances where there is a difference in an IROL or its T_v between Reliability Coordinators that are responsible for that Facility (or group of Facilities). *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*
- M4.** Each Reliability Coordinator shall have, and make available upon request, evidence to confirm that it operated to the most limiting IROL and T_v in instances where there was a difference in an IROL or its T_v . Such evidence could include, but is not limited to, dated computer printouts, dated operator logs, dated voice recordings, dated transcripts of voice recordings, or other equivalent evidence in accordance with Requirement R4.

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C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

The British Columbia Utilities Commission

1.2. Evidence Retention:

The following evidence retention period(s) 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.

The applicable entity 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 evidence of Requirement R1; Requirement R2; Requirement R3; and Requirement R4 for a rolling 12 months.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records, and any reported IROL violations submitted since the last audit.

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

1.4. Additional Compliance Information

None.

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Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.				<p>An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to prevent that IROL exceedance (Part 1.1).</p> <p>OR</p> <p>An IROL in its Reliability Coordinator Area was identified one or more days in advance and the Reliability Coordinator does not have an Operating Process, Procedure, or Plan that identifies actions to mitigate that IROL exceedance within the IROL's T_v. (Part 1.2).</p>
R2.				No Operating Processes, Procedures, or Plans were

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R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				initiated that were intended to prevent a predicted IROL exceedance as identified in the Reliability Coordinator's Real-time monitoring or Real-time Assessment.
R3.				Actual system conditions showed that there was an IROL exceedance in its Reliability Coordinator Area, and that the IROL exceedance was not mitigated within the IROL's T_v .
R4.				The most limiting IROL or its T_v was not operated to between Reliability Coordinators that are responsible for the Facility (or group of Facilities) associated with the IROL.

D. Regional Variances

None.

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E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	October 17, 2008	Adopted by NERC Board of Trustees	
1	March 17, 2011	FERC approved IRO-009-1	
2	August 13, 2015	Adopted by NERC Board of Trustees	Revised to address the recommendations of the Project 2012-09 Interconnected Reliability Operations Five-Year Review Team.
2	December 4, 2015	FERC approved IRO-009-2. Docket No. RD14-14-001, RD15-3-001 & RD15-5-001	

Supplemental Material

Standard Attachments

None.

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT adoption, the text from the rationale text boxes was moved to this section.

Rationale for revisions to Requirement R1: The standard drafting team (IRO SDT) revised this requirement by combining IRO-009-1 Requirements R1 and R2 to form one requirement with two subparts to make the requirements more concise, as both requirements contained similar language.

Rationale for revisions to new Requirement R2 (previously Requirement R3): The IRO SDT revised the language of this requirement to improve clarity as well as consistency with similar NERC Board of Trustees (Board) approved standards, such as, TOP standard revisions (TOP-001-3 R14); “IROL exceedance,” “Real-time monitoring,” and “Real-time Assessments.”

Rationale for Revisions to Requirement R3 (previously Requirement R4): The IRO SDT removed the term “without delay” from the requirement upon determining that the point of time at which the requirement is triggered is inherent in the requirement itself. The IRO SDT also revised the language of this requirement to improve clarity as well as consistency with similar Board approved standards, such as, TOP standard revisions (TOP-001-3 R14); “IROL exceedance,” “Real-time monitoring,” and “Real-time Assessments.”

Rationale for revisions to Requirement R4 (previously Requirement R5): The IRO SDT revised the language of this requirement for clarity as well as consistency with similar Board approved standards, such as TOP standard revisions (TOP-001-3 R18). The IRO SDT retained clarifying language to limit applicability to appropriate affected RCs.