

**Reliability Standard Audit Worksheet[[1]](#footnote-1)**

# IRO-017-1 – Outage Coordination

***This section to be completed by the Compliance Enforcement Authority.***

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| **Audit ID:** | Audit ID if available; or REG-NCRnnnnn-YYYYMMDD |
| **Registered Entity:** | Registered name of entity being audited |
| **NCR Number:** | NCRnnnnn |
| **Compliance Enforcement Authority:** | Region or NERC performing audit |
| **Compliance Assessment Date(s)[[2]](#footnote-2):** | Month DD, YYYY, to Month DD, YYYY |
| **Compliance Monitoring Method:** | [On-site Audit | Off-site Audit | Spot Check] |
| **Names of Auditors:** | Supplied by CEA |

# Applicability of Requirements

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | **BA** | **DP** | **GO** | **GOP** | **IA** | **LSE** | **PA/PC** | **PSE** | **RC** | **RP** | **RSG** | **TO** | **TOP** | **TP** | **TSP** |
| **R1** |  |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| **R2** | X |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| **R3** |  |  |  |  |  |  | X |  |  |  |  |  |  | X |  |
| **R4** |  |  |  |  |  |  | X |  |  |  |  |  |  | X |  |

**Legend:**

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| --- | --- |
| Text with blue background: | Fixed text – do not edit |
| Text entry area with Green background: | Entity-supplied information |
| Text entry area with white background: | Auditor-supplied information |

Findings

**(This section to be completed by the Compliance Enforcement Authority)**

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| **Req.** | **Finding** | **Summary and Documentation** | **Functions Monitored** |
| **R1** |  |  |  |
| **R2** |  |  |  |
| **R3** |  |  |  |
| **R4** |  |  |  |

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| **Req.** | **Areas of Concern** |
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| **Req.** | **Recommendations** |
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| **Req.** | **Positive Observations** |
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Subject Matter Experts

Identify the Subject Matter Expert(s) responsible for this Reliability Standard.

**Registered Entity Response (Required; Insert additional rows if needed):**

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| **SME Name** | **Title** | **Organization** | **Requirement(s)** |
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1. Supporting Evidence and Documentation
2. Each Reliability Coordinator shall develop, implement, and maintain an outage coordination process for generation and Transmission outages within its Reliability Coordinator Area. The outage coordination process shall:
   1. Identify applicable roles and reporting responsibilities including:
      1. Development and communication of outage schedules.
      2. Assignment of coordination responsibilities for outage schedules between Transmission Operator(s) and Balancing Authority(s).
   2. Specify outage submission timing requirements.
   3. Define the process to evaluate the impact of Transmission and generator outages within its Wide Area.
   4. Define the process to coordinate the resolution of identified outage conflicts with its Transmission Operators and Balancing Authorities, and other Reliability Coordinators.
3. Each Reliability Coordinator shall make available its dated, current, in force outage coordination process for generation and Transmission outages within its Reliability Coordinator Area.

**Compliance Narrative (Required):**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested:[[3]](#endnote-1)

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| **Provide the following evidence, or other evidence to demonstrate compliance.** |
| Dated current outage coordination process for generation and Transmission outages within its Reliability Coordinator Area. |

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** | | | | | |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to IRO-017-1, R1

***This section to be completed by the Compliance Enforcement Authority***

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|  | (R1) Verify the entity developed, implemented, and maintained an outage coordination process for generation and Transmission outages within its Reliability Coordinator Area that: |
|  | (Part 1.1) Identified applicable roles and reporting responsibilities including: |
|  | (Part 1.1.1) Development and communication of outage schedules. |
|  | (Part 1.1.2) Assignment of coordination responsibilities for outage schedules between Transmission Operators and Balancing Authorities. |
|  | (Part 1.2) Specified outage submission timing requirements. |
|  | (Part 1.3) Defined the process to evaluate the impact of Transmission and generator outages within its Wide Area. |
|  | (Part 1.4) Defined the process to coordinate the resolution of identified outage conflicts with its Transmission Operators and Balancing Authorities, and other Reliability Coordinators. |
| **Note to Auditor:** | |

Auditor Notes:

1. Supporting Evidence and Documentation
2. Each Transmission Operator and Balancing Authority shall perform the functions specified in its Reliability Coordinator’s outage coordination process.
3. Each Transmission Operator and Balancing Authority shall provide evidence upon request that it performed the functions specified in its Reliability Coordinator’s outage coordination process. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.

**Compliance Narrative (Required):**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested:i

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| **Provide the following evidence, or other evidence to demonstrate compliance.** |
| Reliability Coordinator’s outage coordination process for the entity. |
| Evidence to demonstrate the entity performed the functions specified in its Reliability Coordinator’s outage coordination process. |

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** | | | | | |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to IRO-017-1, R2

***This section to be completed by the Compliance Enforcement Authority***

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|  | (R2) Verify the entity performed the functions specified in its Reliability Coordinator’s outage coordination process. |
| **Note to Auditor:** | |

Auditor Notes:

1. Supporting Evidence and Documentation
2. Each Planning Coordinator and Transmission Planner shall provide its Planning Assessment to impacted Reliability Coordinators*.*
3. Each Planning Coordinator and Transmission Planner shall provide evidence upon request showing that it provided its Planning Assessment to impacted Reliability Coordinators. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.

**Compliance Narrative (Required):**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested:i

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| **Provide the following evidence, or other evidence to demonstrate compliance.** |
| Evidence the entity provided its Planning Assessment to impacted Reliability Coordinators. |

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** | | | | | |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to IRO-017-1, R3

***This section to be completed by the Compliance Enforcement Authority***

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|  | (R3) Verify the entity provided its Planning Assessment to all impacted Reliability Coordinators. |
| **Note to Auditor:** Each Planning Coordinator and Transmission Planner are required to prepare an annual Planning Assessment of its portion of the BES in TPL-001-4 R2. | |

Auditor Notes:

1. Supporting Evidence and Documentation
2. Each Planning Coordinator and Transmission Planner shall jointly develop solutions with its respective Reliability Coordinator(s) for identified issues or conflicts with planned outages in its Planning Assessment for the Near-Term Transmission Planning Horizon.
3. Each Planning Coordinator, and Transmission Planner shall provide evidence upon request showing that it jointly developed solutions with its respective Reliability Coordinator(s) for identified issues or conflicts with planned outages in its Planning Assessment for the Near-term Transmission Planning Horizon. Such evidence could include but is not limited to web postings with an electronic notice of the posting, dated operator logs, voice recordings, postal receipts showing the recipient, date and contents, or e-mail records.

**Registered Entity Response (Required):**

**Question:** Did the entity identify issues or conflicts with planned outages in its Planning Assessment for the Near-Term Transmission Planning Horizon?

Yes  No

If No, describe how this was determined in the narrative section below. If Yes, provide a list of identified issues or conflicts with planned outages in the Planning Assessment for the Near-Term Transmission Planning Horizon.

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Compliance Narrative (Required):**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested:i

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| **Provide the following evidence, or other evidence to demonstrate compliance.** |
| Evidence to demonstrate the entity jointly developed solutions with its respective Reliability Coordinator(s) for identified issues or conflicts with planned outages in its Planning Assessment for the Near-Term Transmission Planning Horizon. |
| Planning Assessment for the Near-Term Transmission Planning Horizon. |

Registered Entity Evidence (Required):

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| **The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.** | | | | | |
| **File Name** | **Document Title** | **Revision or Version** | **Document Date** | **Relevant Page(s) or Section(s)** | **Description of Applicability of Document** |
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Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

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Compliance Assessment Approach Specific to IRO-017-1, R4

***This section to be completed by the Compliance Enforcement Authority***

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|  | (R4) Verify the entity jointly developed solutions with its respective Reliability Coordinator for identified issues or conflicts with planned outages in its Planning Assessment for the Near-Term Transmission Planning Horizon. |
| **Note to Auditor:** Each Planning Coordinator and Transmission Planner are required to prepare an annual Planning Assessment of its portion of the BES in TPL-001-4 R2. | |

Auditor Notes:

Additional Information:

Reliability Standard



The full text of IRO-014-4 may be found on the NERC Web Site (www.nerc.com) under “Program Areas & Departments”, “Reliability Standards.”

In addition to the Reliability Standard, there is an applicable Implementation Plan available on the NERC Web Site.

Capitalized terms in the Reliability Standard refer to terms in the NERC Glossary, which may be found on the NERC Web Site.

Regulatory Language

*Transmission Operations Reliability Standards and Interconnection Reliability Operations and Coordination Reliability Standards,* Final Rule, Order No. 817, 153 FERC ¶ 61,178 (2015).

5. The Commission approved the initial TOP and IRO Reliability Standards in Order No. 693.[[4]](#footnote-3)On April 16, 2013, in Docket No. RM13-14-000, NERC submitted for Commission approval three revised TOP Reliability Standards to replace the eight currently-effective TOP standards.[[5]](#footnote-4)Additionally, on April 16, 2013, in Docket No. RM13-15-000, NERC submitted for Commission approval four revised IRO Reliability Standards to replace six currently-effective IRO Reliability Standards. On November 21, 2013, the Commission issued the Remand NOPR in which the Commission expressed concern that NERC had “removed critical reliability aspects that are included in the currently-effective standards without adequately addressing these aspects in the proposed standards.”The Commission identified two main concerns and asked for clarification and comment on a number of other issues. Among other things, the Commission expressed concern that the proposed TOP Reliability Standards did not require transmission operators to plan and operate within all SOLs, which is a requirement in the currently-effective standards. In addition, the Commission expressed concern that the proposed IRO Reliability Standards did not require outage coordination.

14. We also determine that the proposed TOP and IRO Reliability Standards should improve reliability by defining an appropriate division of responsibilities between reliability coordinators and transmission operators.The proposed TOP Reliability Standards will eliminate multiple TOP standards, resulting in a more concise set of standards, reducing redundancy and more clearly delineating responsibilities between applicable entities. In addition, we find that the proposed Reliability Standards provide a comprehensive framework as well as important improvements to ensure that the bulk electric system is operated within pre-established limits while enhancing situational awareness and strengthening operations planning. The TOP and IRO Reliability Standards address the coordinated efforts to plan and reliably operate the bulk electric system under both normal and abnormal conditions.

17. Furthermore, the revised definitions of operational planning analysis and real-time assessment are critical components of the proposed TOP and IRO Reliability Standards and, together with the definitions of SOLs, IROLs and operating plans, work to ensure that reliability coordinators, transmission operators and balancing authorities plan and operate the bulk electric system within all SOLs and IROLs to prevent instability, uncontrolled separation, or cascading. In addition, the revised definitions of operational planning analysis and real-time assessment address other concerns raised in the Remand NOPR as well as multiple recommendations in the 2011 Southwest Outage Blackout Report.[[6]](#footnote-5)

19. In the NOPR, the Commission noted that Reliability Standard IRO-017-1, Requirement R1 requires each reliability coordinator to develop, implement and maintain an outage coordination process for generation and transmission outages within its reliability coordinator area. Additionally, Reliability Standard IRO-014-3, Requirement R1, Part 1.4 requires reliability coordinators to include the exchange of planned and unplanned outage information to support operational planning analyses and real-time assessments in the operating procedures, processes, and plans for activities that require coordination with adjacent reliability coordinators. We believe that these proposed standards adequately address our concerns with respect to outage coordination as outlined in the Remand NOPR. However, as we discuss below we direct NERC to modify the standards to include transmission operator monitoring of non-BES facilities, and to specify that data exchange capabilities include redundancy and diverse routing; as well as testing of the alternate or less frequently used data exchange capability, within 18 months of the effective date of this Final Rule.

27. While it appears that regional discrepancies exist regarding the manner for calculating IROLs, we accept NERC’s explanation that this issue is more appropriately addressed in NERC’s Facilities Design, Connections and Maintenance or “FAC” Reliability Standards. NERC indicates that an ongoing FAC-related standards development project - NERC Project 2015-09 (Establish and Communicate System Operating Limits) - will address the development and identification of SOLs and IROLs. We conclude that NERC’s explanation, that the Project 2015-09 standard drafting team will address the clarity and consistency of the requirements for establishing both SOLs and IROLs, is reasonable. Therefore, we will not direct further action on IROLs in the immediate TOP and IRO standard-related rulemaking.

Revision History for RSAW

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| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | 06/20/2014 | Initial Posting | New Document |
| 2 | 08/29/2014 | NERC Compliance, NERC Standards, RSAWTF | Revisions for updated standard language and comments received during comment period. |
| 3 | 10/16/2014 | NERC Compliance, NERC Standards | Revisions for comments received during second comment period. |
| 4 | 3/9/2017 | NERC Compliance Assurance, RSAW Task Force | Revised for consistency with the final approved Standard. |

1. NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC’s and the Regional Entities’ assessment of a registered entity’s compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC’s Reliability Standards can be found on NERC’s website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

   The NERC RSAW language contained within this document provides a non‑exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity’s adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail. [↑](#footnote-ref-1)
2. Compliance Assessment Date(s): The date(s) the actual compliance assessment (on-site audit, off-site spot check, etc.) occurs. [↑](#footnote-ref-2)
3. Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. These items are not mandatory and other forms and types of evidence may be submitted at the entity’s discretion. [↑](#endnote-ref-1)
4. *See Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, at P 508, *order on reh’g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007). In addition, in Order No. 748, the Commission approved revisions to the IRO Reliability Standards. *Mandatory Reliability Standards for Interconnection Reliability Operating Limits*, Order No. 748, 134 FERC ¶ 61,213 (2011). [↑](#footnote-ref-3)
5. On April 5, 2013, in Docket No. RM13-12-000, NERC proposed revisions to Reliability Standard TOP-006-3 to clarify that transmission operators are responsible for monitoring and reporting available transmission resources and that balancing authorities are responsible for monitoring and reporting available generation resources. [↑](#footnote-ref-4)
6. NERC Petition at 17-18. [↑](#footnote-ref-5)