

Implementation Plan
IRO-005-4 – Reliability Coordination – Current Day Operations

Approvals Required

IRO-005-4 – Reliability Coordination – Current Day Operations

Prerequisite Approvals

None

Revisions to Glossary Terms

Adverse Reliability Impact - The impact of an event that results in ~~frequency-related Bulk Electric System instability; unplanned tripping of load or generation; or uncontrolled separation or cascading outages that affects a widespread area of the Interconnection.~~

Applicable Entities

Reliability Coordinator

Conforming Changes to Other Standards

None

Effective Dates

IRO-005-4 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.

Retirements

IRO-005-3a should be retired at midnight of the day immediately prior to the Effective Date of IRO-005-4 in the particular jurisdiction in which the new standard is becoming effective.

Summary of Changes

The RC SDT proposes retiring other requirements and revising R15 into two separate requirements.

The following tables identify the sections of approved standards that shall be retired or revised when this standard is implemented.

Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a R1. and sub-requirements Each Reliability Coordinator shall monitor its Reliability Coordinator Area parameters, including but not limited to the following: <i>[Violation Risk Factor: High]</i></p>	<p>Retire R1 and its sub-requirements – Monitoring capability can be objectively measured and is essential to real-time operations – however real-time monitoring is a supporting activity and is only one of several processes used to support operation within defined parameters. Monitoring capability should be assessed during certification and not as a requirement.</p>
<p>IRO-005-3a 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 (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. <i>[Violation Risk Factor: High]</i></p>	<p>None. The RCSDT proposes that this requirement be retired. 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. This requirement should be retired. The requirement is also redundant with existing EOP-002-2.</p>
<p>Notes: EOP-002-2 R1. Each Balancing Authority and Reliability Coordinator shall have the responsibility and clear decision-making authority to take whatever actions are needed to ensure the reliability of its respective area and shall exercise specific authority to alleviate capacity and energy</p>	

Already Approved Standard	Proposed Replacement Requirement(s)
	<p>emergencies.</p> <p>R2. Each Balancing Authority shall implement its capacity and energy emergency plan, when required and as appropriate, to reduce risks to the interconnected system.</p> <p>R3. A Balancing Authority that is experiencing an operating capacity or energy emergency shall communicate its current and future system conditions to its Reliability Coordinator and neighboring Balancing Authorities.</p> <p>R4. A Balancing Authority anticipating an operating capacity or energy emergency shall perform all actions necessary including bringing on all available generation, postponing equipment maintenance, scheduling interchange purchases in advance, and being prepared to reduce firm load.</p> <p>R5. A deficient Balancing Authority shall only use the assistance provided by the Interconnection’s frequency bias for the time needed to implement corrective actions. The Balancing Authority shall not unilaterally adjust generation in an attempt to return Interconnection frequency to normal beyond that supplied through frequency bias action and Interchange Schedule changes. Such unilateral adjustment may overload transmission facilities.</p> <p>R6. If the Balancing Authority cannot comply with the Control Performance and Disturbance Control Standards, then it shall immediately implement remedies to do so. These remedies include, but are not limited to:</p> <ul style="list-style-type: none"> R6.1. Loading all available generating capacity. R6.2. Deploying all available operating reserve. R6.3. Interrupting interruptible load and exports. R6.4. Requesting emergency assistance from other Balancing Authorities. R6.5. Declaring an Energy Emergency through its Reliability Coordinator; and R6.6. Reducing load, through procedures such as public appeals, voltage reductions, curtailing interruptible loads and firm loads. <p>R7. Once the Balancing Authority has exhausted the steps listed in Requirement 6, or if these steps cannot be completed in sufficient time to resolve the emergency condition, the Balancing Authority shall:</p> <ul style="list-style-type: none"> R7.1. Manually shed firm load without delay to return its ACE to zero; and R7.2. Request the Reliability Coordinator to declare an Energy Emergency Alert in accordance with Attachment 1-EOP-002-0 “Energy Emergency Alert Levels.” <p>R8. A Reliability Coordinator that has any Balancing Authority within its Reliability Coordinator area experiencing a potential or actual Energy Emergency shall initiate an Energy Emergency Alert as detailed in Attachment 1-EOP-002-0 “Energy Emergency Alert Levels.” The Reliability</p>

Already Approved Standard	Proposed Replacement Requirement(s)
<p>Coordinator shall act to mitigate the emergency condition, including a request for emergency assistance if required.</p> <p>R9. When a Transmission Service Provider expects to elevate the transmission service priority of an Interchange Transaction from Priority 6 (Network Integration Transmission Service from Non-designated Resources) to Priority 7 (Network Integration Transmission Service from designated Network Resources) as permitted in its transmission tariff (See Attachment 1-IRO-006-0 “Transmission Loading Relief Procedure” for explanation of Transmission Service Priorities):</p> <p>R9.1. The deficient Load-Serving Entity shall request its Reliability Coordinator to initiate an Energy Emergency Alert in accordance with Attachment 1-EOP-002-0.</p> <p>R9.2. The Reliability Coordinator shall submit the report to NERC for posting on the NERC Website, noting the expected total MW that may have its transmission service priority changed.</p> <p>R9.3. The Reliability Coordinator shall use EEA 1 to forecast the change of the priority of transmission service of an Interchange Transaction on the system from Priority 6 to Priority 7.</p> <p>R9.4. The Reliability Coordinator shall use EEA 2 to announce the change of the priority of transmission service of an Interchange Transaction on the system from Priority 6 to Priority 7.</p>	
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-2</p> <p>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.</p>	<p>The RCSDT proposes retiring this requirement as it is addressed in R15 below. A GMD is one of the “expected or actual threats with Adverse Reliability Impacts”.</p> <p>IRO-005-4 (proposed)</p> <p>R2. 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 problem has been mitigated. <i>[Violation Risk Factor: Medium]</i> <i>[Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]</i></p>
<p>IRO-005-3</p>	

Already Approved Standard	Proposed Replacement Requirement(s)
<p>R4. The Reliability Coordinator shall disseminate information within its Reliability Coordinator Area, as required.</p>	<p>None. The RCSDT recommends retiring this requirement.</p>
<p>Notes: The RCSDT proposes that this requirement is too vague and ambiguous to measure. We recommend retiring this requirement.</p>	
<p>IRO-005-3a</p> <p>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.</p>	<p>None. The BA has its own requirements regarding compliance with CPS and DCS standards as well as requesting emergency assistance. RCSDT views these as vestiges of an earlier program that no longer apply given the current mandatory requirements with which the BA must comply. The second sentence is redundant with EOP-002, R4, R6, R7, and R9. This requirement should be retired.</p> <p>The RCSDT recommends retiring this requirement as it is redundant with:</p> <p>TOP-006-1</p> <p>R7. Each Reliability Coordinator, Transmission Operator and Balancing Authority shall monitor system frequency.</p> <p>EOP-002-2</p> <p>R4. A Balancing Authority anticipating an operating capacity or energy emergency shall perform all actions necessary including bringing on all available generation, postponing equipment maintenance, scheduling interchange purchases in advance, and being prepared to reduce firm load.</p> <p>R6. If the Balancing Authority cannot comply with the Control Performance and Disturbance Control Standards, then it shall immediately implement remedies to do so.</p> <p>These remedies include, but are not limited to:</p> <p>R6.1. Loading all available generating capacity.</p> <p>R6.2. Deploying all available operating reserve.</p>

Already Approved Standard	Proposed Replacement Requirement(s)
	<p>R6.3. Interrupting interruptible load and exports.</p> <p>R6.4. Requesting emergency assistance from other Balancing Authorities.</p> <p>R6.5. Declaring an Energy Emergency through its Reliability Coordinator; and</p> <p>R6.6. Reducing load, through procedures such as public appeals, voltage reductions, curtailing interruptible loads and firm loads.</p> <p>R7. Once the Balancing Authority has exhausted the steps listed in Requirement 6, or if these steps cannot be completed in sufficient time to resolve the emergency condition, the Balancing Authority shall:</p> <p>R7.1. Manually shed firm load without delay to return its ACE to zero; and</p> <p>R7.2. Request the Reliability Coordinator to declare an Energy Emergency Alert in accordance with Attachment 1-EOP-002-0 “Energy Emergency Alert Levels.”</p>
<p>IRO-005-2</p> <p>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, 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 timeframes.</p>	<p>None. The RCSDT proposes to retire this requirement from IRO-005.</p> <p>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 (see above).</p>

Already Approved Standard	Proposed Replacement Requirement(s)
<p>Notes:</p> <p>TOP-003-0</p> <p>R1. Generator Operators and Transmission Operators shall provide planned outage information.</p> <p>R1.1. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.</p> <p>R1.2. Each Transmission Operator shall provide outage information daily to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. The Reliability Coordinator shall establish the outage reporting requirements.</p> <p>R1.3. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p>R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.</p> <p>R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.</p> <p>R4. Each Reliability Coordinator shall resolve any scheduling of potential reliability conflicts.</p> <p>IRO-004-1</p> <p>R1. Each Reliability Coordinator shall conduct next-day reliability analyses for its Reliability Coordinator Area to ensure that the Bulk Electric System can be operated reliably in anticipated normal and Contingency event conditions. The Reliability Coordinator shall conduct Contingency analysis studies to identify potential interface and other SOL and IROL violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.</p> <p>R2. Each Reliability Coordinator shall pay particular attention to parallel flows to ensure one Reliability Coordinator Area does not place an unacceptable or undue Burden on an adjacent Reliability Coordinator Area.</p> <p>R3. Each Reliability Coordinator shall, in conjunction with its Transmission Operators and Balancing Authorities, develop action plans that may be required, including reconfiguration of the transmission system, re-dispatching of generation, reduction or curtailment of Interchange</p>	

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<p>Transactions, or reducing load to return transmission loading to within acceptable SOLs or IROLs.</p> <p>R4. Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.</p> <p>R5. Each Reliability Coordinator shall share the results of its system studies, when conditions warrant or upon request, with other Reliability Coordinators and with Transmission Operators, Balancing Authorities, and Transmission Service Providers within its Reliability Coordinator Area. The Reliability Coordinator shall make study results available no later than 1500 Central Standard Time for the Eastern Interconnection and 1500 Pacific Standard Time for the Western Interconnection, unless circumstances warrant otherwise.</p> <p>R6. If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall direct its Transmission Operators, Balancing Authorities and Transmission Service Providers to take any necessary action the Reliability Coordinator deems appropriate to address the potential SOL or IROL violation.</p> <p>R7. Each Transmission Operator, Balancing Authority, and Transmission Service Provider shall comply with the directives of its Reliability Coordinator based on the next day assessments in the same manner in which it would comply during real time operating events.</p> <p>IRO-001-2, R1 (proposed)</p> <p>R1. The Reliability Coordinator shall act or direct actions to be taken by Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, Distribution Providers and Purchasing-Selling Entities within its Reliability Coordinator Area to prevent or mitigate the magnitude or duration of events that result in Adverse Reliability Impacts. <i>[Violation Risk Factor: High][Time Horizon: Real-time Operations and Same Day Operations]</i></p>	<p>None. The RCSDT proposes to retire this requirement as it is redundant with:</p> <p>EOP-002-2</p> <p>R7.2. Request the Reliability Coordinator to declare an Energy Emergency Alert in accordance with Attachment 1-EOP-002-0 “Energy Emergency Alert Levels.”</p> <p>R8. A Reliability Coordinator that has any Balancing Authority within its</p>
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a</p> <p>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. <i>[Violation Risk Factor: High]</i></p>	<p>None. The RCSDT proposes to retire this requirement as it is redundant with:</p> <p>EOP-002-2</p> <p>R7.2. Request the Reliability Coordinator to declare an Energy Emergency Alert in accordance with Attachment 1-EOP-002-0 “Energy Emergency Alert Levels.”</p> <p>R8. A Reliability Coordinator that has any Balancing Authority within its</p>

Already Approved Standard	Proposed Replacement Requirement(s)
	<p>Reliability Coordinator area experiencing a potential or actual Energy Emergency shall initiate an Energy Emergency Alert as detailed in Attachment 1-EOP-002-0 "Energy Emergency Alert Levels." The Reliability Coordinator shall act to mitigate the emergency condition, including a request for emergency assistance if required.</p>
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a 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.</p>	<p>None. The RCSDT recommends retiring this requirement as it is redundant with:</p> <p>IRO-001-2 (proposed)</p> <p>R2. Each Reliability Coordinator shall take actions or direct actions (which could include issuing Reliability Directives) by Transmission Operators, Balancing Authorities, Generator Operators, and Distribution Providers within its Reliability Coordinator Area to prevent identified events or mitigate the magnitude or duration of actual events that result in Adverse Reliability Impacts. <i>[Violation Risk Factor: High][Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]</i></p> <p>TOP-006-1, R7 (existing)</p> <p>R7. Each Reliability Coordinator, Transmission Operator, and Balancing Authority shall monitor system frequency.</p>
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a 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</p>	<p>None. The RCSDT recommends retiring this requirement as it is redundant with proposed IRO-010:</p> <p>IRO-010-1</p> <p>R1. The Reliability Coordinator shall have a documented data</p>

Already Approved Standard	Proposed Replacement Requirement(s)
<p>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.</p>	<p>specification for data and information to build and maintain models to support Real-Time monitoring, Operational Planning Analyses, and Real-time Assessments. The specification shall include the following: <i>(Violation Risk Factor: Low) (Time Horizon: Operations Planning)</i></p> <p>R1.1. List of required data and information.</p> <p>R1.2. Mutually agreeable format.</p> <p>R1.3. Timeframe and periodicity for providing data and information (based on its hardware and software requirements, and the time needed to do its Operational Planning Analyses).</p> <p>R1.4. Process for data provision when automated Real-Time system operating data is unavailable.</p> <p>R2. The Reliability Coordinator shall distribute its data specification to entities that have Facilities monitored by the Reliability Coordinator and to entities that provide Facility status to the Reliability Coordinator. <i>(Violation Risk Factor: Low) (Time Horizon: Operations Planning)</i></p> <p>R3. Each Balancing Authority, Generator Owner, Generator Operator, Interchange Authority, Load-serving Entity, Reliability Coordinator, Transmission Operator, and Transmission Owner shall provide data and information, as specified, to the Reliability Coordinator(s) with which it has a reliability relationship. The data and information is limited to data needed by the Reliability Coordinator to support Real-Time Monitoring, Operational Planning Analyses, and Real-Time Assessments. <i>(Violation Risk Factor: Medium) (Time Horizon: Operations Planning; Same-day Operations; Real-time Operations)</i></p>
<p>Notes: The RCSDT recommends retiring this requirement as it is redundant with proposed IRO-010, R1 and R3. Also, the scope of project</p>	

Already Approved Standard	Proposed Replacement Requirement(s)
<p>2007-3 includes enhancing the SPS provisions of TOP-005. IRO-003, R1 indicates the RC will monitor all items that will impact reliability, and SPSs are a part of that.</p>	
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a R10. 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.</p>	<p>None. The RCSDT recommends retiring the requirement as it is a facet of the SOL / IROL methodology required in FAC-010-1, FAC-011-1 and FAC-014-1.</p>
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a R11. 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.</p>	<p>None. The RC SDT proposes retiring this requirement. The concept of this requirement is more appropriately addressed in the proposed MOD standards under project 2006-7. As written, this requirement is not measureable and unenforceable as a TSP's tariff may supersede the requirement.</p>
Already Approved Standard	Proposed Replacement Requirement(s)
<p>IRO-005-3a R12. Each Reliability Coordinator who foresees a transmission problem (such as an SOL or IROL violation, loss of reactive reserves, etc.) within its Reliability Coordinator Area shall 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</p>	<p>IRO-005-4 R1. When the results of an Operational Planning Analysis or Real-time Assessment indicate an expected 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. <i>[Violation Risk Factor: High] [Time Horizon: Real-time]</i></p>

Already Approved Standard	Proposed Replacement Requirement(s)
<p>impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, when the transmission problem has been mitigated.</p>	<p><i>Operations, Same Day Operations and Operations Planning</i></p> <p>R2. 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 problem has been mitigated. <i>[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations, Same Day Operations and Operations Planning]</i></p>