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### **Prerequisite Approvals**

There are no other Reliability Standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before this standard can be implemented.

The proposed standards were developed for the 'Reliability Authority' function, but at the direction of the Standards Authorization Committee (SAC), the Drafting Team changed the term, 'Reliability Authority' to 'Reliability Coordinator'. The Reliability Coordinator function is recognized and using this term should make compliance easier for all involved.

### Retirement of Sections of Version 0 Standards

Some requirements in Reliability Standards IRO-014-1, IRO-015-1 and IRO-016-1 address the same or similar objectives as Version 0 Standards.

The tables on the following pages highlight the specific requirements contained in Version 0 Standards that are duplicated in the proposed set of Reliability Standards (IRO-014-1, IRO-015-1, IRO-016-1). The Drafting Team recommends that the noted sections of Version 0 Standards be retired when the proposed Version 1 Standards are adopted by the NERC Board of Trustees. Justification for these recommended retirements is provided in the tables on the following pages.

### Version 0 Standards being recommended for revision or retirement:

- COM-002-0    Communications and Coordination
  - Modify R2; retire R2.1, R2.2, R2.3
  
- EOP-002-0    Capacity and Energy Emergencies
  - Modify R2; retire R4
  
- IRO-003-0    Reliability Coordination – Wide Area View
  - Retire R2
  
- IRO-004-0    Reliability Coordination – Operations Planning
  - Retire R6; modify R7
  
- IRO-005-0    Reliability Coordination – Current Day Operations
  - Modify R7, R9, R11, R12, R15
  
- TOP-005-0    Operational Reliability Information
  - Retire R3

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>COM-002-0_R2.</b></p> <p><b>R2.</b> Each Balancing Authority and Transmission Operator shall notify its Reliability Coordinator, and all other potentially affected Balancing Authorities and Transmission Operators through predetermined communication paths of any condition that could threaten the reliability of its area or when firm load shedding is anticipated. The following information shall be conveyed to others in the Interconnection via an Interconnection-wide telecommunications system:</p> <p><b>R2.1.</b> The Balancing Authority is unable to purchase capacity or energy to meet its demand and reserve requirements on a day-ahead or hour-by-hour basis.</p> <p><b>R2.2.</b> The Transmission Operator recognizes that potential or actual line loadings, and voltage or reactive levels are such that a single Contingency could threaten the reliability of the Interconnection. (Once a single Contingency occurs, the Transmission Operator must prepare for the next Contingency.)</p> <p><b>R2.3.</b> The Transmission Operator anticipates initiating a 3% or greater voltage reduction, public appeals for load curtailments, or firm load shedding for other than local problems.</p>	<p><b>IRO-014-1_R1</b></p> <p>The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other Reliability Coordinators to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other Reliability Coordinator Areas as well as those developed in coordination with other Reliability Coordinators.</p> <p>1.1. These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li>1.1.1. Communications and notifications, including the conditions<sup>1</sup> under which one Reliability Coordinator notifies other Reliability Coordinators; the process to follow in making those notifications; and the data and information to be exchanged with other Reliability Coordinators.</li> <li>1.1.2. Energy and capacity shortages.</li> <li>1.1.3. Planned or unplanned outage information.</li> <li>1.1.4. Voltage control, including the coordination of reactive resources for voltage control.</li> <li>1.1.5. Coordination of information exchange to support reliability assessments.</li> <li>1.1.6. Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other Reliability Coordinator Areas.</li> </ul> <p><b>IRO-015-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p>

<sup>1</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.

**Notes:**

- Only the portion of COM-002-0\_R2 highlighted in yellow will be retired with the adoption of IRO-014-1. According to V0 SDT Members, the portion of COM-002-0\_R2 highlighted in yellow was assumed to be assigned to the RC since the RC is the only entity with access to an interconnection-wide communication system.
- Under IRO-014-1\_R1 RCs must have Operating Procedures, Processes or Plans in place for making notifications and exchanging reliability-related information with other RCs. Under IRO-015-1, RCs must follow the Procedures Processes or Plans for making notifications and exchanging reliability-related information with other RCs.
- IRO-015-1 does not attempt to provide a comprehensive list of incidents that would result in an interconnection-wide announcement – the V1 Standard provides a list of topics that must be addressed and allows RCs the latitude to develop additional Procedures, Processes or Plans for making notifications and exchanging reliability-related information.
- IRO-015-1 does not require the use of an interconnection-wide telecommunication system.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>EOP-002-0_R2.</b> Each Balancing Authority and Reliability Coordinator shall implement its capacity and energy emergency plan, when required and as appropriate, to reduce risks to the interconnected system.</p>	<p><b>IRO-014-1_R1</b></p> <p>The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other Reliability Coordinators to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other Reliability Coordinator Areas as well as those developed in coordination with other Reliability Coordinators.</p> <p>1.2. These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li>1.2.1. Communications and notifications, including the conditions<sup>2</sup> under which one Reliability Coordinator notifies other Reliability Coordinators; the process to follow in making those notifications; and the data and information to be exchanged with other Reliability Coordinators.</li> <li>1.2.2. Energy and capacity shortages.</li> <li>1.2.3. Planned or unplanned outage information.</li> <li>1.2.4. Voltage control, including the coordination of reactive resources for voltage control.</li> <li>1.2.5. Coordination of information exchange to support reliability assessments.</li> <li>1.2.6. Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other Reliability Coordinator Areas.</li> </ul> <p><b>IRO-015-1_R1</b></p> <p>The Reliability Coordinator shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p>

<sup>2</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.

## Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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**Notes:**

- Only the portion of EOP-002-0\_R2 highlighted in yellow should be retired with the adoption of IRO-014-1. The remaining portion should be retired when the V1 Balance Resources and Demand Standards are adopted.
- Under IRO-014-1\_R1, RCs must have Operating Procedures, Processes or Plans in place for making notifications and exchanging reliability-related information with other RCs. Under IRO-015-1 RCs must follow the Procedures Processes or Plans for making notifications and exchanging reliability-related information with other RCs.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>EOP-002-0_R4</b></p> <p>A Reliability Coordinator that is experiencing an operating capacity or energy emergency shall communicate its current and future system conditions to neighboring areas.</p>	<p><b>IRO-014-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other RCs to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other RC Areas as well as those developed in coordination with other RCs.</p> <p>1.3. These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <p>1.3.1. Communications and notifications, including the conditions<sup>3</sup> under which one RC notifies other RCs; the process to follow in making those notifications; and the data and information to be exchanged with other RCs.</p> <p>1.3.2. Energy and capacity shortages.</p> <p>1.3.3. Planned or unplanned outage information.</p> <p>1.3.4. Voltage control, including the coordination of reactive resources for voltage control.</p> <p>1.3.5. Coordination of information exchange to support reliability assessments.</p> <p>1.3.6. Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other RC Areas.</p> <p><b>IRO-015-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p> <p><b>R1.1.</b> The RC shall make notifications to other RCs of conditions in its RC Area that may impact other RC Areas.</p>

<sup>3</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.



## Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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**Notes:**

- When IRO-014-1 is adopted, EOP-002-0\_R4 should be retired.
- Under IRO-014-1\_R1, RCs must have Operating Procedures, Processes or Plans in place for making notifications and exchanging reliability-related information with other RCs. Under IRO-015-1 RCs must follow the Procedures Processes or Plans for making notifications and exchanging reliability-related information with other RCs.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-003-0_R2</b></p> <p>When a Reliability Coordinator is aware of an operational concern, such as declining voltages, excessive reactive flows, or an IROL violation, in a neighboring Reliability Coordinator Area, it shall contact the Reliability Coordinator in whose area the operational concern was observed. The two Reliability Coordinators shall coordinate any actions, including emergency assistance, required to mitigate the operational concern.</p>	<p><b>IRO-016-1_R1.</b></p> <p><b>R1.</b> The Reliability Coordinator that identifies a potential, expected, or actual problem that requires the actions of one or more other Reliability Coordinators shall contact the other Reliability Coordinator(s) to confirm that there is a problem and then discuss options and decide upon a solution to prevent or resolve the identified problem.</p> <p><b>R1.1</b> If the involved Reliability Coordinators agree on the problem and the actions to take to prevent or mitigate the system condition each involved Reliability Coordinator shall implement the agreed-upon solution, and notify the involved Reliability Coordinators of the action(s) taken.</p> <p><b>R1.2.</b> If the involved Reliability Coordinators cannot agree on the problem(s) each Reliability Coordinator shall re-evaluate the causes of the disagreement (bad data, status, study results, tools, etc.)</p> <p><b>R1.2.1.</b> If time permits, this re-evaluation shall be done before taking corrective actions.</p> <p><b>R1.2.2.</b> If time does not permit, then each Reliability Coordinator shall operate as though the problem(s) exist(s) until the conflicting system status is resolved.</p> <p><b>R1.3.</b> If the involved Reliability Coordinators cannot agree on the solution, the more conservative solution shall be implemented.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>– When IRO-016-1 is adopted, IRO-003-0_R2 should be retired.</li> <li>– IRO-016-1_R1 is more comprehensive than IRO-003-0_R2 because it addresses actions to resolve differences of opinion between RCs. Resolving differences of opinion between RCs was a problem during the August 2003 Blackout.</li> </ul>	

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-004_R6</b></p> <p>When conditions warrant, the Reliability Coordinator shall initiate a conference call or other appropriate communications to address the results of its reliability analyses.</p>	<p><b>IRO-015-1</b></p> <p><b>R1.</b> The Reliability Coordinator shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p> <p><b>R1.1</b> The Reliability Coordinator shall make notifications to other Reliability Coordinators of conditions in its Reliability Coordinator Area that may impact other Reliability Coordinator Areas.</p> <p><b>R2.</b> The Reliability Coordinator shall participate in agreed upon conference calls and other communication forums with adjacent Reliability Coordinators.</p> <p><b>R2.1</b> The frequency of these conference calls shall be agreed upon by all involved Reliability Coordinators and shall be at least weekly.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>– When IRO-015-1 is adopted, IRO-004-0_R6 should be retired.</li> <li>– IRO-015-1 requires the RC to share data and information with other RCs. IRO-014-1 requires that each RC have Operating Procedures, Processes or Plans to address situations where one RC needs to share data or information with other RCs, or needs another RC to take actions to alleviate a scenario that has an Adverse Reliability Impact. The results of reliability analyses is just one example of a scenario that may require one RC to share data or information with one or more other RCs.</li> </ul>	

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-004_R7</b></p> <p>If the results of these studies indicate potential SOL or IROL violations, the Reliability Coordinator shall issue the appropriate alerts via the Reliability Coordinator Information System (RCIS) and 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><b>IRO-014-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other RCs to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other RC Areas as well as those developed in coordination with other RCs.</p> <p><b>R1.1</b> These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.1</b> Communications and notifications, including the conditions<sup>4</sup> under which one RC notifies other RCs; the process to follow in making those notifications; and the data and information to be exchanged with other Ras.</li> <li><b>R1.1.2</b> Energy and capacity shortages.</li> <li><b>R1.1.3</b> Planned or unplanned outage information.</li> <li><b>R1.1.4</b> Voltage control, including the coordination of reactive resources for voltage control.</li> <li><b>R1.1.5</b> Coordination of information exchange to support reliability assessments.</li> <li><b>R1.1.6</b> Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other RC Areas.</li> </ul> <p><b>IRO-015-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p> <p><b>R1.1</b> The RC shall make notifications to other RCs of conditions in its RC Area that may impact other RC Areas.</p>

<sup>4</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.

## Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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### Notes:

- When IRO-014-1 and IRO-015-1 are adopted, the highlighted sections of IRO-004-0\_R7 should be retired.
- The requirement to notify other RCs is addressed in IRO-015-1. Note that IRO-015-1 does not mention the use of a specific tool. This omission can be found throughout V1 Standards, and is intended to result in the need for fewer changes to standards. While the tool used may change in the future, the performance of making the notification would not change and by leaving out the name of the tool, no conforming changes would be needed to the standard if the tool did change.
- Alerts may not be practical for all scenarios, and the V1 Standards require the RC to notify entities who are required to act to prevent/mitigate a problem.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-005_R7</b></p> <p>The Reliability Coordinator shall participate in NERC hotline discussions, assist in the assessment of reliability of the overall interconnected system, and coordinate actions in anticipated or actual emergency situations. The Reliability Coordinator shall disseminate such information within its Reliability Coordinator Area, as required.</p>	<p><b>IRO-014-1_R1</b></p> <p><b>R1.</b> The RC shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other RCs to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other RC Areas as well as those developed in coordination with other RCs.</p> <p><b>R1.1</b> These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.1</b> Communications and notifications, including the conditions<sup>5</sup> under which one RC notifies other RCs; the process to follow in making those notifications; and the data and information to be exchanged with other Ras.</li> <li><b>R1.1.2</b> Energy and capacity shortages.</li> <li><b>R1.1.3</b> Planned or unplanned outage information.</li> <li><b>R1.1.4</b> Voltage control, including the coordination of reactive resources for voltage control.</li> <li><b>R1.1.5</b> Coordination of information exchange to support reliability assessments.</li> <li><b>R1.1.6</b> Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other RC Areas.</li> </ul> <p><b>IRO-015-1_R1</b></p> <p><b>R1.</b> The RC shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p> <p><b>R1.1</b> The RC shall make notifications to other RCs of conditions in its RC Area that may impact other RC Areas.</p> <p><b>R2.</b> The RC shall participate in agreed upon conference calls and other communication forums with adjacent RCs.</p>

<sup>5</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.

## Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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### Notes:

- When IRO-014-1 and IRO-015-1 are adopted, the highlighted sections of IRO-005-0\_R7 should be retired.
- IRO-015-1 requires the RC to share data and information with other RCs. IRO-014-1 requires that each RC have Operating Procedures, Processes or Plans to address situations where one RC needs to share data or information with other RCs, or needs another RC to take actions to alleviate a scenario that has an Adverse Reliability Impact.
- The V0 Standard is difficult to measure because no criteria are established in the standard for things such as the frequency of participation. The set of V1 Coordinate Operations Standards requires that the criteria for sharing information be identified in advance and then be shared as specified. V1 Standards do not reference or require the use of specific tools such as the NERC Hotline since the tools used and the names applied to those tools may change.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-005-0_R9</b></p> <p>The Reliability Coordinator shall coordinate with <b>other Reliability Coordinators and</b> 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.</p> <p>The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with <b>other Reliability Coordinators and</b> Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.</p>	<p><b>IRO-014-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other RCs to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other RC Areas as well as those developed in coordination with other RCs.</p> <p><b>R1.1</b> These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.1</b> Communications and notifications, including the conditions<sup>6</sup> under which one RC notifies other RCs; the process to follow in making those notifications; and the data and information to be exchanged with other Ras.</li> <li><b>R1.1.2</b> Energy and capacity shortages.</li> <li><b>R1.1.3</b> Planned or unplanned outage information.</li> <li><b>R1.1.4</b> Voltage control, including the coordination of reactive resources for voltage control.</li> <li><b>R1.1.5</b> Coordination of information exchange to support reliability assessments.</li> <li><b>R1.1.6</b> Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other RC Areas.</li> </ul>

<sup>6</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.



## Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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### Notes:

- When IRO-014-1 is adopted, the highlighted sections of IRO-005-0\_R9 should be retired.
- IRO-014-1 replaces the text highlighted in yellow. (Both the Balance Resources and Demand Standards require RCs to follow action plans developed under the Coordinate Operations Standards for interconnection frequency issues - IROL Standards require RCs to have and implement action plans for prevention and mitigation of IROLs. The Balance Resources and Demand Standards replace V0 CPS and DCS standards.)
- IRO-014-1 requires RCs to have Operating Procedures, Processes or Plans to address exchange of information with other RCs relative to planned and unplanned outages.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-005-0_R11</b></p> <p>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. <b>If a Frequency Error, Time Error, or inadvertent problem occurs outside of the Reliability Coordinator Area, the Reliability Coordinator shall initiate a NERC hotline call to discuss the Frequency Error, Time Error, or Inadvertent Interchange with other Reliability Coordinators.</b> The Reliability Coordinator shall direct its Balancing Authority to comply with CPS and DCS.</p>	<p><b>IRO-016-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator that identifies a potential, expected, or actual problem that requires the actions of one or more other Reliability Coordinators shall contact the other Reliability Coordinator(s) to confirm that there is a problem and then discuss options and decide upon a solution to prevent or resolve the identified problem.</p> <p><b>R1.1.</b> If the involved Reliability Coordinators agree on the problem and the actions to take to prevent or mitigate the system condition each involved Reliability Coordinator shall implement the agreed-upon solution, and notify the involved Reliability Coordinators of the action(s) taken.</p> <p><b>R1.2.</b> If the involved Reliability Coordinators cannot agree on the problem(s) each Reliability Coordinator shall re-evaluate the causes of the disagreement (bad data, status, study results, tools, etc.)</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>– When IRO-016-1 is adopted, the highlighted section of IRO-005-0_R11 should be retired. (The Balance Resource and Demand (BRD) Standards require the RC to coordinate with other RCs by following action plans developed under IRO-015-1.) V1 Standards don't require use of NERC Hotline or any other specific tool.</li> <li>– IRO-016-1_R1 requires RCs to coordinate actions to address real-time problems involving coordination of actions between RCs.</li> </ul>	

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-005-0_R12</b></p> <p>Whenever a Special Protection System that may have an inter-Balancing Authority, or inter-Transmission Operator, or inter-Reliability Coordinator Area 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.</p>	<p><b>IRO-014-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other RCs to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other RC Areas as well as those developed in coordination with other RCs.</p> <p><b>R1.1</b> These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.1</b> Communications and notifications, including the conditions<sup>7</sup> under which one RC notifies other RCs; the process to follow in making those notifications; and the data and information to be exchanged with other RCs.</li> <li><b>R1.1.2</b> Energy and capacity shortages.</li> <li><b>R1.1.3</b> Planned or unplanned outage information.</li> <li><b>R1.1.4</b> Voltage control, including the coordination of reactive resources for voltage control.</li> <li><b>R1.1.5</b> Coordination of information exchange to support reliability assessments.</li> <li><b>R1.1.6</b> Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other RC Areas.</li> </ul>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>– When IRO-014-1 is adopted, the highlighted section of IRO-005-0_R12 should be retired.</li> <li>– IRO-014-1_R1 requires the RCs to have Operating Processes, Procedures or Plans to address issues in one RC Area that may have an Adverse Reliability Impact on other RC Areas. This includes having a procedure, process or plan that identifies the conditions under which one RC notifies another RC – and arming of an SPS is an example that may be included in this. IRO-015-1_R1 requires the RC to follow these procedures, processes or plans.</li> </ul>	

<sup>7</sup> Examples of conditions when one RC may need to notify another RC may include (but aren't limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>IRO-005-0_R15</b></p> <p>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, and all impacted Reliability Coordinators within the Interconnection via the Reliability Coordinator Information System (RCIS) without delay. The receiving Reliability Coordinator shall disseminate this information to its impacted Transmission Operators and Balancing Authorities. The Reliability Coordinator shall notify all impacted Transmission Operators, Balancing Authorities, and Reliability Coordinators when the transmission problem has been mitigated.</p>	<p><b>IRO-016-1_R1</b></p> <p><b>R1.</b> The RC that identifies a potential, expected, or actual problem that requires the actions of one or more other RCs shall contact the other RC(s) to confirm that there is a problem and then discuss options and decide upon a solution to prevent or resolve the identified problem.</p>
<p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>– When IRO-016-1 is adopted, the highlighted sections of IRO-005-0_R15 should be retired.</li> <li>– Alerts may not be practical for all scenarios, and for almost all scenarios, IRO-015-1 and IRO-016-1 require the RC to notify entities who are required to act to prevent/mitigate a problem. With any transmission problem, all entities on the interconnection will be impacted to some degree, making this criteria too broad as a threshold for making notifications. Thus, the V1 standard requires only notifying those that must take action and those that are impacted by those actions.</li> </ul>	

Version 0 Standards	Proposed Replacement Requirement(s)
<p><b>TOP-005-0_R3</b></p> <p>Upon request, each Reliability Coordinator shall, via the ISN or equivalent system, exchange with other Reliability Coordinators operating data that are necessary to allow the Reliability Coordinators to perform operational reliability assessments and coordinate reliable operations. Reliability Coordinators shall share with each other the types of data listed in Attachment 1- TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to.</p>	<p><b>IRO-014-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall have Operating Procedures, Processes, or Plans in place for activities that require notification, exchange of information or coordination of actions with one or more other RCs to support Interconnection reliability. These Operating Procedures, Processes or Plans shall address Scenarios that affect other RC Areas as well as those developed in coordination with other RCs.</p> <p><b>R1.1</b> These Operating Procedures, Processes or Plans shall collectively address, as a minimum, the following:</p> <ul style="list-style-type: none"> <li><b>R1.1.1</b> Communications and notifications, including the conditions<sup>8</sup> under which one RC notifies other RCs; the process to follow in making those notifications; and the data and information to be exchanged with other RCs.</li> <li><b>R1.1.2</b> Energy and capacity shortages.</li> <li><b>R1.1.3</b> Planned or unplanned outage information.</li> <li><b>R1.1.4</b> Voltage control, including the coordination of reactive resources for voltage control.</li> <li><b>R1.1.5</b> Coordination of information exchange to support reliability assessments.</li> </ul> <p><b>R1.1.6</b> Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other RC Areas.</p> <p><b>IRO-015-1_R1</b></p> <p><b>R1.</b> The Reliability Coordinator shall follow its Operating Procedures, Processes or Plans for making notifications and exchanging reliability-related information with other Reliability Coordinators.</p>

<sup>8</sup> Examples of conditions when one RC may need to notify another RC may include (but aren’t limited to) sabotage events, Interconnection Reliability Operating Limit violations, voltage reductions, insufficient resources, arming of special protection systems, etc.

## Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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**Notes:**

- When IRO-015-1 is adopted, TOP-005-0\_R3 should be retired. IRO-014-1\_R1.1.5 requires the RCs to have procedures, processes or plans that address coordination of information exchange to support reliability assessments.
- IRO-015-1\_R1 requires the RC to follow its procedures, processes or plans for exchanging reliability-related information with other RCs.

**Functions That Must Comply with the Proposed Standards**

Standard	Functions That Must Comply With the Requirements
IRO-014-1 – Procedures to Support Coordination Between Reliability Coordinators	Reliability Coordinator
IRO-015-1 – Notifications and Information Exchange Between Reliability Coordinators	Reliability Coordinator
IRO-016-1 – Coordination of Real-time Activities Between Reliability Coordinators	Reliability Coordinator

***Phased-in Compliance***

The following table identifies the date entities must be fully compliant with each requirement.

The effective date is the date entities are expected to begin meeting the performance identified in a standard. Additional time (preparation time) has been added to give entities time needed to fully comply with the requirements. The justification for the compliance dates is in the tables on the following pages. The drafting team recognizes that many entities have resources focused on ensuring compliance with Version 0 Standards and the nine-month time delay for full compliance with IRO-014-1, IRO-015-1, and IRO-016-1, should give entities the additional time needed to collect the evidence required by these new standards.

Requirement	Compliance Date
IRO-014-1 – Procedures to Support Coordination Between Reliability Coordinators	Full compliance 9 months from effective date. (October 1, 2006)
IRO-015-1 – Notifications and Information Exchange Between Reliability Coordinators	Full compliance 9 months from effective date. (October 1, 2006)
IRO-016-1 – Coordination of Real-time Activities Between Reliability Coordinators	Full compliance 9 months from effective date. (October 1, 2006)

Proposed Measures	Industry Preparation
<p><b>IRO-014-1</b></p> <p><b>M1.</b> The Reliability Coordinator's System Operators shall have available for Real-Time use, the latest approved version of Operating Procedures, Processes, or Plans that require notifications, information exchange or the coordination of actions between Reliability Coordinators.</p> <p><b>M1.1</b> These Operating Procedures, Processes, or Plans shall address:</p> <ul style="list-style-type: none"> <li><b>M1.1.1</b> Communications and notifications, including the conditions under which one Reliability Coordinator notifies other Reliability Coordinators; the process to follow in making those notifications; and the data and information to be exchanged with other Reliability Coordinators.</li> <li><b>M1.1.2</b> Energy and capacity shortages.</li> <li><b>M1.1.3</b> Planned or unplanned outage information.</li> <li><b>M1.1.4</b> Voltage control, including the coordination of reactive resources for voltage control.</li> <li><b>M1.1.5</b> Coordination of information exchange to support reliability assessments.</li> <li><b>M1.1.6</b> Authority to act to prevent and mitigate instances of causing Adverse Reliability Impacts to other Reliability Coordinator Areas.</li> </ul> <p><b>M1.2</b> The Reliability Coordinator shall have evidence that these Operating Procedures, Processes or Plans were:</p> <ul style="list-style-type: none"> <li><b>M1.2.1</b> Agreed to by all the Reliability Coordinators required to take the indicated action(s).</li> <li><b>M1.2.2</b> Distributed to all Reliability Coordinators that are required to take the indicated action(s).</li> </ul>	<p>Entities are expected to have these procedures, processes or plans in place, but some entities may need to formalize the evidence that there is agreement with entities expected to act as part of these procedures, processes or plans and may need to compile evidence that the documents were distributed.</p> <p>The drafting team recognizes that many entities have resources focused on ensuring compliance with Version 0 Standards and the time delay for full compliance should give entities the additional time needed to collect the evidence required by this new standard.</p>



<p><b>IRO-014-1</b></p> <p><b>M2.</b> The Reliability Coordinator’s Operating Procedures, Processes or Plans developed (for its System Operators’ internal use) to support a Reliability Coordinator to Reliability Coordinator Operating Procedure, Process or Plan received from another Reliability Coordinator shall:</p> <p><b>M2.1</b> Be available to the Reliability Coordinator's System Operators for Real-Time use,</p> <p><b>M2.2</b> Include a reference to the associated source document, and</p> <p><b>M2.3</b> Support the agreed-upon actions from the source document.</p>	<p>Some entities may have these documents, but they may be missing the references to the source documents. The drafting team recognizes that many entities have resources focused on ensuring compliance with Version 0 Standards and the time delay for full compliance should give entities the additional time needed to add these references required by this new standard.</p>
<p><b>IRO-014-1</b></p> <p><b>M3.</b> The Reliability Coordinator’s Operating Procedures, Processes or Plans that addresses Reliability Coordinator to Reliability Coordinator coordination shall each include a version control number or date and a distribution list. The Reliability Coordinator shall have evidence that these Operating Procedures, Processes or Plans were reviewed within the last three years.</p>	<p>Some documents in existence may not include a version control number or date and a distribution list or may not have been updated within the past 3 years. The drafting team recognizes that many entities have resources focused on ensuring compliance with Version 0 Standards and the time delay for full compliance should give entities the additional time needed to make the modifications required by this new standard.</p>

**Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1**

Proposed Measures	Industry Preparation
<p><b>IRO-015-1</b></p> <p><b>M1.</b> The Reliability Coordinator shall have evidence (such as operator logs or other data sources) it has followed its Operating Procedures, Processes or Plans for notifying other Reliability Coordinators of conditions in its Reliability Coordinator Area that may impact other Reliability Coordinator Areas.</p>	<p>There is a nine-month ‘grace’ period for entities to develop the Procedures, Processes or Plans identified in IRO-014-1 and this ‘grace period’ should be sufficient for entities to begin collecting evidence of acting in accordance with these Procedures, Processes or Plans.</p>
<p><b>M2.</b> The Reliability Coordinator shall have evidence (such as operator logs or other data sources) that it participated in agreed upon (at least weekly) conference calls and other communication forums with adjacent Reliability Coordinators.</p>	<p>No grace period is required to collect this documentation – however the agreements on the details of the calls are addressed in IRO-014-1_ and there is a nine-month ‘grace period’ for enforcing compliance with IRO-014-1_M1.</p>
<p><b>M3.</b> The Reliability Coordinator shall have evidence (such as operator logs ext or other data sources) identifying other Reliability Coordinators that have:</p> <p><b>M3.1</b> Notified them of conditions in their area that may impact the questioned Reliability Coordinator Area.</p>	<p>No ‘grace period’ is required to collect this documentation – however the documents that address commitments to provide other RCs with information are addressed in IRO-014-1, and there is a nine-month delay in enforcing compliance with IRO-014-1.</p>
<p><b>M4.</b> The Reliability Coordinator shall have evidence that it provided requested reliability related information to other Reliability Coordinators.</p>	<p>No ‘grace period’ is required to collect this evidence – however the documents that address commitments to provide other RCs with information are addressed in IRO-014-1, and there is a nine-month delay in enforcing compliance with IRO-014-1.</p>

Implementation Plan for Coord Ops Standards IRO-014-1, IRO-015-1, IRO-016-1

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<b>Proposed Measures</b>	<b>Industry Preparation</b>
<p><b>IRO-016-1</b></p> <p><b>M1.</b> For each event that requires Reliability Coordinator to Reliability Coordinator coordination, each involved Reliability Coordinator shall have evidence (operator logs or other data sources) of the actions taken for either the event or for the disagreement on the problem or for both.</p>	<p>The documentation to be kept is the same type of documentation typically kept in all control rooms. While no 'grace period' is required to collect this documentation, a nine-month period has been provided to ensure there is sufficient time to ensure control room personnel understand the obligation to follow-up when there are disagreements between RCs.</p>