

Implementation Plan for Project 2007-03: Real-Time Operations

Prerequisite Approvals

Some changes made in this project are dependent on corresponding changes being approved in Project 2006-06, Reliability Coordination:

- COM-001-1 — Telecommunications
- COM-002-2 — Communications and Coordination
- IRO-001-1 — Reliability Coordination — Responsibilities and Authorities
- IRO-002-1 — Reliability Coordination — Facilities
- IRO-014-1 — Procedures to Support Coordination between Reliability Coordinators
- IRO-015-1 — Notifications and Information Exchange between Reliability Coordinators
- IRO-016-1 — Coordination of Real-Time Activities between Reliability Coordinators
- PER-004-1 — Reliability Coordination — Staffing
- PRC-001-1 — System Protection Coordination

It is the intent of the SDT that Project 2006-06 and Project 2007-03 be filed together so that the changes to the different standards can be coordinated.

Revision to Sections of Approved Standards and Definitions

There are no new definitions in the proposed set of standards.

However, three separate drafting teams wrote definitions for Reliability Directive. The three drafting teams have coordinated on a common definition and agreed that the Reliability Coordinator Standards Drafting Team (Project 2006-06) would write the definition and post it for vetting by the industry. The agreed upon definition is included here for ease of reference although it needs to be noted that this is still a draft and hasn't been approved by the industry.

Reliability Directive — A communication initiated by a Reliability Coordinator, Transmission Operator, or Balancing Authority where action by the recipient is necessary to address an actual or expected Emergency.

Compliance with Standard

| Standard | Functions that must Comply with the Associated Requirements | | | | | | | |
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| | TOP | BA | GO | GOP | IA | LSE | DP | TO |
| PER-001-0: Operating Personnel Responsibility and Authority | Retired | | | | | | | |
| TOP-001-2: Coordination of Transmission Operations | X | X | | X | | X | X | |
| TOP-002-3: Operations Planning | X | | | | | | | |
| TOP-003-1: Operational Reliability Data | X | X | X | X | X | X | | X |
| TOP-004-2: Real-Time Transmission | Retired | | | | | | | |

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| Operations | |
| TOP-005-2: Operational Reliability Data | Retired |
| TOP-006-1: Monitoring System Conditions | Retired |
| TOP-007-0: Reporting System Operating Limits (SOL) and Interconnection Reliability Operating Limit (IROL) Violations | Retired |
| TOP-008-1: Response to Transmission Limit Violations | Retired |

The effective date is the date entities are expected to meet the performance identified in these standards. Note that entities have been given several months beyond the regulatory approval date (preparation time) to fully comply with new requirements.

The assumption used by the SDT in establishing this Implementation Plan is that the project mentioned in the prerequisites: Project 2006-06, Reliability Coordination; has been approved prior to the implementation of this Project 2007-03, Real-Time Operations.

Effective Date of Revised Standards

All requirements will become effective the first day of the first calendar quarter twenty-four months following applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the requirements become effective the first day of the first calendar quarter twenty-four months following Board of Trustees adoption.

Retirement Date for Existing Standards

All requirements will be retired twenty-four months following the first day of the first quarter following regulatory approval.

Mapping Table

The following table indicates the disposition of the existing standards related to this project.

| Existing Requirement | Resolution |
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| TOP-001-1 | |
| R1 | Deleted – Deletion of this requirement doesn’t alleviate responsibility for actions as each individual requirement in the Reliability Standards now specifies an action and a responsible entity. Needed actions required for reliability of the bulk power system have been more clearly laid out in revised standards. (See FERC Order 693a, paragraph 112.) The requirement is also non-specific, ambiguous, and not performance oriented. If an entity doesn’t perform as specified in an individual requirement, then they are held accountable at that level. This is a generic requirement that is no longer necessary since there are now specific requirements that cover all needed reliability actions. All of this makes this requirement redundant. The overall reliability of the bulk power system is not adversely affected by the deletion of this requirement. |
| R2 | Deleted for Reliability Coordinator - The Reliability Coordinator has the ultimate responsibility for the reliability of the bulk power system and the Transmission Operator must respond to Reliability Coordinator directives as per proposed IRO-001-2, Requirement R2. |

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| | Replaced for Transmission Operator – Based on the interpretation of the undefined term ‘operating emergency’ as equivalent to ‘Emergency’ as defined in the Glossary which points to ‘Adverse Reliability Impact’ which in turn points to IROs, this has been replaced by proposed TOP-001-2, Requirements R7 through R10. |
| R3 | Moved for Reliability Coordinator - All references to the Reliability Coordinator and Reliability Coordinator responsibilities have been removed from the TOP standards as they are now covered in the revisions being undertaken in Project 2006-06. This requirement is now covered in the proposed IRO-001-2, Requirements R2 & R3. Replaced for Transmission Operator – Proposed TOP-001-2, Requirement R1 now covers the Balancing Authority and Generator Operator responding to Transmission Operator directives. |
| R4 | Retained and moved to proposed TOP-001-2, Requirement R1. |
| R5 | Retained and moved to proposed TOP-001-2, Requirement R2. The intent of the “mitigation” phrasing was replaced by proposed TOP-001-2, Requirement R10. (Also, see explanation for R2 above.) Also, this is covered in approved EOP-001-0, Requirement R3 and the proposed EOP-001-2, Requirement R2. |
| R6 | Retained and moved to proposed TOP-001-2, Requirement R3 for the Transmission Operator. The Generator Operator was removed since they can’t be contacted directly by others and will only respond to such requests if they were in the form of a Reliability Directive from its Transmission Operator which is covered in proposed TOP-001-2, Requirement R1. EOP-001-0, Requirement R1 covers the Balancing Authority so to eliminate a redundancy the Balancing Authority has been removed from this requirement. In addition, the Balancing Authority must still respond to any Reliability Directive from the Transmission Operator as stated in proposed TOP-001-2, Requirement R1. |
| R7 | Retained in concept but re-worded as part of proposed TOP-001-2, Requirements R4 & R5. After the fact notifications have been deleted since those actions will be seen through telemetry as cited in the proposed TOP-003-2 and proposed IRO-001-2. The term ‘burden’ was considered by the SDT to be vague, ambiguous, unmeasurable, and undefined and has been replaced by a NERC defined term ‘Burden’. |
| R8 | Real Power Balance and Reactive Power Balance are not defined terms. First sentence – Deleted due to: - The Balancing Authority is covered in approved EOP-002-2.1, Requirement R6. Therefore, this portion of the requirement is superfluous and can be deleted. The Transmission Operator does not balance real power so that part of the sentence can be deleted. Approved VAR-001-1, Requirement R8 covers reactive power requirements and the meaning of balancing reactive power for the Transmission Operator. The Balancing Authority must be told by the Transmission Operator to take actions regarding reactive power (see proposed TOP-001-2, Requirement R1) and can therefore be deleted from this part of the requirement. Second sentence – Deleted due to: The Balancing Authority must be told by the Transmission Operator to take actions regarding reactive power (see proposed TOP-001-2, Requirement R1) and can thus be deleted. Transmission Operators are covered under approved VAR-001-1, Requirement R1 thus making this part of the requirement redundant. Third sentence – The Reliability Coordinator is now covered in proposed IRO-009-1, Requirements R1 through R4 and can be deleted here. The Transmission Operator and Balancing Authority are covered in approved EOP-003-1, Requirement R1. Therefore, this is redundant and can be deleted. |
| TOP-002-2 | |

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| R1 | <p>First sentence – Deleted for Balancing Authority, Retained for Transmission Operator - The Balancing Authority is required to balance by approved BAL-001-0.1a and approved BAL-002-0 and must take action per approved EOP-002-2.1, Requirement R6 and thus can be deleted. Retained for Transmission Operator in proposed TOP-002-3, Requirements R1 through R3. This is patterned after the proposed IRO-008-1, Requirement R1 for the Reliability Coordinator. Second sentence – Deleted. The Balancing Authority is covered in approved BAL-002-0, Requirement R3 and thus is redundant and can be deleted here. The Transmission Operator is covered in the proposed TOP-001-2, Requirement R10 and is thus also redundant and can be deleted. In addition, approved EOP-001-2, Requirement R3 covers the Transmission Operator having plans in place to mitigate emergency conditions.</p> |
| R2 | <p>Deleted - The SDT reviewed the purpose of the Reliability Standard and believes that this requirement referred to operations planning. Given the current definition of Transmission Operator in the Glossary and Functional Model v5, operations planning is part of what the Transmission Operator is required to do and as such this requirement is no longer needed and can be deleted.</p> |
| R3 | <p>For all but the Transmission Service Provider, proposed TOP-003-2 requires the transfer of any and all data required for Real-time operations or Operational Planning Analyses regardless of timeframe involved. That makes this requirement redundant and it can be deleted. The Transmission Service Provider is covered in the proposed MOD-028-1, MOD-029-1, and MOD-030-1 and is thus redundant and can be deleted.</p> |
| R4 | <p>Deleted – Proposed TOP-003-2 requires the transfer of any and all data required for Real-time operations or Operational Planning Analyses between and amongst Balancing Authorities and Transmission Operators regardless of timeframe involved. That makes this requirement redundant and it can be deleted for Balancing Authorities and Transmission Operators. Data requirements for Reliability Coordinators are covered in proposed IRO-010-1, Requirement R3 making this requirement redundant for Reliability Coordinators and it is therefore deleted.</p> |
| R5 | <p>The Balancing Authority is covered by approved BAL-001-0.1a and thus can be deleted. The Functional Model requires a Balancing Authority to operate under the direction of the Transmission Operator for such matters. It is also a basic tenet of operations and good standards that only one entity should be ‘in charge’. The Balancing Authority can only work within the constraints handed down by the Transmission Operator. Any needed coordination issues are built in to the Functional Model. Therefore, the Transmission Operator should be doing the plan and passing it down to the Balancing Authority. The Balancing Authority gets any needed data to the Transmission Operator through the data specification requirements in proposed TOP-003-2. Transmission Operator - replaced by proposed TOP-002-3, requirements R1 through R3.</p> |
| R6 | <p>The Balancing Authority is covered by approved BAL-002-0, Requirements R2 through R4 and approved EOP-002-2.1, Requirement R6 and thus can be deleted. The Functional Model requires a Balancing Authority to operate under the direction of the Transmission Operator for such matters. It is also a basic tenet of operations and good standards that only one entity should be ‘in charge’. The Balancing Authority can only work within the constraints handed down by the Transmission Operator. Any needed coordination issues are built in to the Functional Model. Therefore, the Transmission Operator should be doing the plan and passing it down to the Balancing Authority. The Balancing Authority gets any needed data to the Transmission Operator through the data specification requirements in proposed TOP-003-2.</p> |

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| | <p>Transmission Operator - replaced by proposed TOP-002-3, Requirements R1 through R3.</p> <p>The SDT does not believe that there is a need for the last part of the sentence ‘in accordance with...’ with the advent of the ERO and enforceable reliability standards.</p> <p>As stated in the NERC Functional Model V4, the Balancing Function: “Integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area and supports Interconnection frequency in real time.” To this end and in accordance with approved NERC Reliability Standards BAL-001-0.1a and BAL-002-0, Balancing Authorities are required to meet all control performance and disturbance recovery criteria for any system condition. Balancing Authorities are not responsible for the operation of the transmission system. The Transmission Operator is responsible for the real-time operating reliability of the transmission assets under its purview, and as such has the authority to issue reliability-related directives to entities within its Transmission Operator Area. Balancing Authorities are required to implement directives received from the Transmission Operator or the Reliability Coordinator regarding load, generation and interchange for transmission concerns both predicted (e.g., through Unit Commitment) and actual (e.g., through re-dispatch, Interchange modifications or load shedding). If the Balancing Authorities’ actions do not resolve the transmission issues, it is the Transmission Operators’ or Reliability Coordinators’ responsibility to direct alternative actions.</p> |
| R7 | <p>The Balancing Authority is required to always plan to meet and recover from Contingency events as stated in approved BAL-002-0, Requirement R2 and therefore this requirement is redundant and can be deleted.</p> <p>Deliverability is not in the control of the Balancing Authority; it is a Transmission Operator responsibility and is covered in proposed TOP-002-3, Requirements R1 and R2. Operational Planning Analysis includes deliverability considerations.</p> |
| R8 | <p>Deleted - The Balancing Authority must be told by the Transmission Operator to take actions regarding reactive power (see proposed TOP-001-2, Requirement R1) and thus this requirement can be deleted.</p> <p>Voltage and reactive are the responsibility of the Transmission Operator and are covered under approved VAR-001-1, Requirement R1.</p> <p>Deliverability is not in the control of the Balancing Authority; it is a Transmission Operator responsibility and is covered in proposed TOP-002-3, Requirement R1 and R2.</p> |
| R9 | <p>This is covered in approved INT-003-2 and is redundant and can be deleted.</p> |
| R10 | <p>Balancing Authority - deleted as for transmission, the Balancing Authority is only responsible to respond to Reliability Directives as per the definition of Balancing Authority in the Glossary and thus this requirement is not applicable to the Balancing Authority. The SDT position is that SOLs and IROLs are transmission items for which the Balancing Authority has no information or control. The Transmission Operator instructs the Balancing Authority as to what to do in these situations.</p> <p>Transmission Operator - covered in proposed TOP-002-3, Requirement R1 (analysis of SOLs) & Requirement R2 (avoid IROLs).</p> <p>As stated in the NERC Functional Model V4, the Balancing Authority is responsible for integrating resource plans ahead of time, maintaining load-interchange-generation balance within a Balancing Authority Area and supporting Interconnection frequency in real time. The Balancing Authority does not possess the bulk power system information necessary to manage transmission flows. Therefore, the Balancing Authority can only plan to meet SOLs and IROLs by responding to directions from the Transmission Operator.</p> |
| R11 | <p>Deleted:</p> <p>First sentence – Proposed TOP-003-2 requires the transfer of any and all data required for real-time operations or Operational Planning Analyses regardless of the timeframe involved. Operational Planning Analyses are covered in proposed TOP-002-3, Requirement R1.</p> <p>Second sentence deleted as this is now covered in the proposed IRO-009-1, Requirement R5 for</p> |

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| | IROLs and the SDT has moved toward an operating philosophy for the Transmission Operator based on avoiding IROLs (and selected SOLs) and acting within the IROL T_v . Third sentence – ‘update... as necessary’ is ambiguous and the SDT believes that proposed TOP-003-2, Requirement R1 better covers this for studies and covered in proposed TOP-002-3, Requirement R3 for distribution so this is redundant and can be deleted. |
| R12 | Deleted as duplicative of proposed MOD-028-2, MOD-029-2, or MOD-030-2 . |
| R13 | Deleted as duplicative of approved FAC-008-1 & approved FAC-009-1, Requirement R1.3. |
| R14 | Deleted – duplicative of proposed TOP-003-2. |
| R15 | Deleted – duplicative of proposed TOP-003-2. |
| R16 | Deleted – duplicative of proposed TOP-003-2. |
| R17 | Deleted - duplicative of proposed IRO-010-1, Requirement R3. |
| R18 | Deleted as the SDT feels that this requirement adds no reliability benefit. Entities have existing processes that handle this issue. There has never been a documented case of the lack of uniform line identifiers contributing to a system reliability issue. This is an administrative item as seen in the measure which simply requires a list of line identifiers. The SDT feels that the true reliability issue is not the name of a line but what is happening to it, pointing out the difficulty in assigning compliance responsibility for such a requirement, as well as the near impossibility of coming up with truly unique identifiers on a nation-wide basis. The bottom line is that this situation is handled by the operators as part of their normal responsibilities and no one is aware of a switching error caused by confusion over line identifiers. |
| R19 | Deleted - Order 693, paragraph 1660 states that FERC is not interested in analytical tools but rather in capabilities. This requirement is tool-specific and as such is not suitable for Reliability Standards per Order 693. |
| TOP-003-1 | |
| R1 | Deleted as duplicative of proposed TOP-003-2, Requirement R1. |
| R2 | Balancing Authority deleted since Balancing Authority is only required to respond to Reliability Directives regarding voltage. Proposed TOP-001-2, Requirement R4 covers coordination issues. Proposed TOP-003-2, Requirement R1 handles data requirements. |
| R3 | Retained as proposed TOP-001-2, Requirement R6. |
| R4 | Deleted – covered by proposed TOP-001-2, Requirements R4 & R5 as the SDT expects the entities to resolve any conflicts based on this requirement. If the conflict can't be resolved, the (proposed) IRO-001-2, Requirement R1 gives the Reliability Coordinator the authority to resolve the conflict. . |
| TOP-004-2 | |
| R1 | Moved to proposed TOP-001-2, R7 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T_v . |
| R2 | Moved to proposed TOP-001-2, Requirement R7 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T_v . |
| R3 | Moved to proposed TOP-001-2, Requirement R7. This requirement is not limited by single or multiple Contingencies but is based solely on identified IROLs regardless of how they were identified or whether they were identified by the Transmission Operator or Reliability Coordinator. |
| R4 | Deleted due to the fact that the SDT believes the best way to handle such a situation is to treat it |

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| | like an IROL or restoration scenario and to take the same type of actions that you would apply for alleviating those situations. Therefore, it is covered under proposed TOP-001-2, Requirement R7 and the proposed EOP-006-2. This allows the operator sufficient flexibility within a structured environment to take the necessary actions for the reliability of the bulk power system. |
| R5 | The Transmission Operator does not have the right to unilaterally separate – that can only be done through the authorization of the Reliability Coordinator, thus the first sentence is a moot point and that portion of the requirement can be deleted. The second sentence has been replaced by proposed TOP-001-2, R7 through R10 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T _v . |
| R6 | The first sentence was deleted as it is has been superseded by the NERC Reliability Standards taken as a whole. The second sentence can be deleted as all of the sub-requirements are covered elsewhere: R6.1 is duplicative of approved VAR-001-1, Requirement R1 for reactive. Real power flows are covered in proposed TOP-001-2, Requirement R7. R6.2 is covered in proposed TOP-001-2, Requirement R4 R6.3 – moved to proposed TOP-001-2, Requirement R4; R6.4 – moved to proposed TOP-001-2, Requirements R7 through R10 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T _v . Also, a Transmission Operator must have a documented Operating Procedure covering every applicable standard requirement in order to pass an audit |
| TOP-005-2 | |
| R1 | Confidentiality is not a reliability issue but a market or business issue. Since this is not a reliability issue, it does not belong in the Reliability Standards and can be deleted. |
| R2 | Deleted – covered by proposed TOP-003-2. |
| R3 | Deleted –All operating data that a Purchasing Selling Entity has that a Transmission Operator or Balancing Authority needs is part of eTag and is acquired through that system. This is a NAESB standard and can thus be deleted. Purchasing Selling Entity is covered under the INT standards and thus can be deleted. |
| TOP-006-2 | |
| R1 | R1 & R1.1 - Deleted – covered as part of the new data specification requirements in proposed TOP-003-2. R1.2 - Deleted – covered by proposed IRO-010-1, Requirement R3. |
| R2 | Deleted – covered as part of the new data specification requirements in proposed TOP-003-2 for the Transmission Operator & Balancing Authority. The Reliability Coordinator is covered by proposed IRO-010-1, Requirement R3. |
| R3 | Deleted – as duplicative of proposed PER-005-1 (training) and proposed TOP-003-2 (data). |
| R4 | Deleted – covered as part of the new data specification requirements in proposed TOP-003-2. |
| R5 | Deleted – covered in certification process for initial core capabilities. Entities will be in violation of other standards if they don't maintain their initial certification. For example, approved BAL-005-0.1b for ACE calculations (Balancing Authority); proposed TOP-001-2, for Transmission Operator avoiding IROLs; proposed IRO-008-1, Requirement R2 for real-time assessments every 30 minutes for Reliability Coordinators. |

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| R6 | Deleted – covered in certification process for initial core capabilities. Entities will be in violation of other standards if they don't maintain their initial certification. For example, approved BAL-005-o.1b for ACE calculations (Balancing Authority); proposed TOP-001-2, for Transmission Operator avoiding IROLs. |
| R7 | Deleted – covered in certification process for initial core capabilities. Entities will be in violation of other standards if they don't maintain their initial certification. For example, approved BAL-005-0.1b for ACE calculations (Balancing Authority); approved EOP-003-1, for Transmission Operator avoiding underfrequency; proposed EOP-006-2, Requirement R8 for resynchronization for Reliability Coordinators. |
| TOP-007-0 | |
| R1 | Moved to proposed TOP-001-2, R9 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T _v . |
| R2 | Moved to proposed TOP-001-2, R7 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T _v . |
| R3 | Deleted - Covered in approved EOP-003-1, Requirements R1 & R3. and proposed TOP-001-2, Requirement R10. |
| R4 | Deleted as duplicative of approved IRO-001-1.1, R3. |
| TOP-008-1 | |
| R1 | Deleted – as duplicative of approved EOP-003-1, Requirements R1, R3 & R5 and proposed TOP-001-2, Requirement R10. |
| R2 | First sentence - Deleted as duplicative of proposed TOP-001-2, Requirement R7 with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T _v . Second sentence – deleted as this is now handled by the Reliability Coordinator as cited in proposed IRO-009-1, Requirement R5. |
| R3 | Delete first sentence – Placing this procedure in a requirement when it is only one of the possible options for alleviating the condition is bad practice and should not be mandated in standards. If the situation involves an IROL it is covered in proposed TOP-001-2, Requirements R7 through R10. If it is not an IROL, then the owner still has the right to protect their equipment within the limitations of their contracts and obligation to comply with the Reliability Standards. Delete second sentence as duplicative of proposed TOP-001-2, Requirements R4 & R5. The SDT feels that a standard should not be mandating disconnection. This is in conflict with other Reliability Standards where disconnection is dependent on system conditions and coordination with other functional entities. Such actions, taken unilaterally, could make conditions worse. |
| R4 | Deleted – information is covered as part of the new data specification requirements in proposed TOP-003-2. Analysis tools are covered in the certification process for initial core capabilities. The Transmission Operator will be in violation of other standards if they don't maintain their initial certification. For example, they can't develop their limits without maintaining their tools. Operational Planning Analyses are required in proposed TOP-002-3 while real-time analysis is required for IROL mitigation in proposed TOP-001-2 thus covering the operational timeframes. Proposed TOP-001-2, R10 covers mitigation of limit violations with the note that the SDT has moved toward an operating philosophy based on avoiding IROLs (and selected SOLs) and the IROL T _v . |
| PER-001-0 | |

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| R1 | Deleted - In FERC Order 693a, paragraph 112, the Commission clarifies that a Reliability Coordinator's authority to issue directives arises out of the Commission's approval of Reliability Standards that mandate compliance with such directives. The SDT believes that this same logic applies to Transmission Operators and Balancing Authorities and that makes this requirement superfluous and thus it can be deleted. |
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