

Standard Authorization Request Form

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| Title of Proposed Standard | Reliability Coordination (Project 2006-06) |
| Request Date | December 18, 2006 |

| SAR Requestor Information | SAR Type <i>(Check a box for each one that applies.)</i> |
|--|---|
| Name Ellis Rankin | <input type="checkbox"/> New Standard |
| Primary Contact Ellis Rankin | <input checked="" type="checkbox"/> Revision to existing Standards – see list below COM-001 — Telecommunications COM-002 — Communications and Coordination IRO-001 — Reliability Coordination – Responsibilities and Authorities IRO-002 — Reliability Coordination – Facilities IRO-005 — Reliability Coordination – Current Day Operations IRO-014 — Procedures to Support Coordination between Reliability Coordinators IRO-015 — Notifications and Information Exchange Between Reliability Coordinators IRO-016 — Coordination of Real-time Activities between Reliability Coordinators PER-004 — Reliability Coordination – Staffing PRC-001 — System Protection Coordination |
| Telephone 214-743-6828 Fax 972-263-6710 | <input checked="" type="checkbox"/> Withdrawal of existing Standard Some requirements in the above standards |
| E-mail erankin@txued.com | <input type="checkbox"/> Urgent Action |

| | |
|----------------|---|
| Purpose | To ensure that the reliability-related requirements applicable to the Reliability Coordinator are clear, measurable, unique and enforceable; and to ensure that this set of requirements is sufficient to maintain reliability of the Bulk Electric System. |
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Standards Authorization Request Form

Brief Description

Most of the requirements in this set of standards were translated from Operating Policies as part of the Version 0 process. There have been suggestions for improving these requirements, and the drafting team will consider comments submitted by stakeholders, drafting teams and FERC in determining what changes should be proposed to stakeholders.

The drafting team will review all of the requirements in this set of standards and make a determination, with stakeholders, on whether to:

- Modify the requirement to improve its quality
- Move the requirement (into another SAR or Standard or to the certification process or standards)
- Eliminate the requirement (either because it is redundant or because it doesn't support bulk power system reliability).

Detailed Description

The drafting team will review all of the requirements in the following set of standards:

- COM-001 — Telecommunications
- COM-002 — Communications and Coordination
- IRO-001 — Reliability Coordination – Responsibilities and Authorities
- IRO-002 — Reliability Coordination – Facilities
- IRO-005 — Reliability Coordination – Current Day Operations
- IRO-014 — Procedures to Support Coordination between Reliability Coordinators
- IRO-015 — Notifications and Information Exchange Between Reliability Coordinators
- IRO-016 — Coordination of Real-time Activities between Reliability Coordinators
- PER-004 — Reliability Coordination – Staffing
- PRC-001 — System Protection Coordination

For each existing requirement, the drafting team will work with stakeholders and:

- Eliminate redundancy in the requirements.
- Identify requirements that should be moved into other SARs
- Eliminate requirements that do not support bulk power system reliability
- Transfer requirements that need to be in place before an entity begins operation as an RC to certification.

The standard drafting team will also:

- Coordinate with the drafting teams working on the SAR and standards for Transmission Operator and Balancing Authority standards (Project 2007-06).
- Consider comments received during the initial development of this set of standards and other comments received from ERO regulatory authorities and stakeholders (Attachment 1)
- Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 2)

This review of the set of identified standards will satisfy the standards procedure requirement to review each approved standard at least once every five years.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <i>(Check box for each one that applies.)</i> | | |
|---|-------------------------------|---|
| <input checked="" type="checkbox"/> | Reliability Coordinator | Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view. |
| <input checked="" type="checkbox"/> | Balancing Authority | Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports system frequency in real time. |
| <input checked="" type="checkbox"/> | Interchange Authority | Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas. |
| <input checked="" type="checkbox"/> | Planning Coordinator | Assesses the longer-term reliability of its Planning Coordinator Area. |
| <input checked="" type="checkbox"/> | Resource Planner | Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator Area. |
| <input checked="" type="checkbox"/> | Transmission Planner | Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area. |
| <input checked="" type="checkbox"/> | Transmission Service Provider | Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff). |
| <input checked="" type="checkbox"/> | Transmission Owner | Owens and maintains transmission facilities. |
| <input checked="" type="checkbox"/> | Transmission Operator | Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area. |
| <input checked="" type="checkbox"/> | Distribution Provider | Delivers electrical energy to the End-use customer. |
| <input checked="" type="checkbox"/> | Generator Owner | Owens and maintains generation facilities. |
| <input checked="" type="checkbox"/> | Generator Operator | Operates generation unit(s) to provide real and reactive power. |
| <input type="checkbox"/> | Purchasing-Selling Entity | Purchases or sells energy, capacity, and necessary reliability-related services as required. |
| <input type="checkbox"/> | Market Operator | Interface point for reliability functions with commercial functions. |
| <input checked="" type="checkbox"/> | Load-Serving Entity | Secures energy and transmission service (and related reliability-related services) to serve the end-use customer. |

Reliability and Market Interface Principles

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| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input checked="" type="checkbox"/> | 2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand. |
| <input checked="" type="checkbox"/> | 3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably. |
| <input checked="" type="checkbox"/> | 4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented. |
| <input checked="" type="checkbox"/> | 5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems. |
| <input checked="" type="checkbox"/> | 6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified, and have the responsibility and authority to implement actions. |
| <input checked="" type="checkbox"/> | 7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards – Listed under description

| Standard No. | Explanation |
|---------------------|--------------------|
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Related SARs

| SAR ID | Explanation |
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Regional Differences

| Region | Explanation |
|---------------|--------------------|
| ERCOT | |
| FRCC | |
| MRO | |
| NPCC | |
| SERC | |
| RFC | |
| SPP | |
| WECC | |

The drafting team will assist stakeholders in considering these comments in determining what changes to make to the standards:

COM-001-0 Telecommunications

FERC NOPR

- Include generator operators and distribution provider as applicable entities; and
- Include requirements for communication facilities for use during emergency situations.

V0 Industry Comments

- Many players missing
- Apply R1 to all but smallest entities

Violation Risk Factor Drafting Team Comments

- R6 – administrative requirement

COM-002-1 Communications and Coordination

FERC NOPR

- Include a Requirement for the reliability coordinator to assess and approve actions that have impacts beyond the area views of transmission operators or balancing authorities;
- Include distribution providers as applicable entities; and
- Require tightened communications protocols, especially for communications during alerts and emergencies.

V0 Industry Comments

- Voice with generators not required
- R1 – include reliability authority
- R2 – include sabotage and security
- R4 – clarify repeat back requirement with regard to emergency

IRO-001-0 Reliability Coordination – Responsibilities and Authorities

FERC NOPR

- Reflect the process set forth in the NERC Rules of Procedures; and
- Eliminate the regional reliability organization as an applicable entity.

Regional Fill-in-the-Blank Team Comments

- Remove ", sub-region, or interregional coordinating group" from R1
- Consider removing "Standards of conduct are necessary to ensure the Reliability Coordinator does not act in a manner that favors one market participant over another." from the Purpose section of the standard.

V0 Industry Comments

- Inability to perform needs to be communicated
- What is meant by 'interest of other entity'?

Violation Risk Factor Drafting Team Comments

- R6 - Since the RC must be NERC certified, it stands to reason that anyone performing RC tasks should be certified. However, since the RC still retains the accountability for actions, and requirement 4 handles the agreements, this requirement is a medium risk.

IRO-002-0 Reliability Coordination – Facilities

FERC NOPR

- o Modify Requirement R7 to explicitly require a minimum set of tools for the reliability coordinator.

V0 Industry Comments

- o R5 – define synchronized information system
- o R7 – define ‘adequate’ tools and ‘wide-area’
- o Words such as ‘easily understood’ and ‘particular emphasis’ need to be tightened

IRO-005-1 Reliability Coordination – Current Day Operations

FERC NOPR

- o Propose that the ERO conduct a survey on IROL practices and experiences.
- o The Commission may propose further modifications to IRO-005-1 based on the survey results.

V0 Industry Comments

- o R10, 11 & 12 – RA not empowered to do this

IRO-016-1 Coordination of Real-Time Activities Between Reliability Coordinators

Violation Risk Factors Drafting Team Comments

- o R1.2.1 & R2 – ambiguous

PER-004-0 Reliability Coordination – Staffing

FERC NOPR

- o Include formal training requirements for reliability coordinators similar to those addressed under the personnel training Reliability Standard PER-002-0;
- o Include requirements pertaining to personnel credentials for reliability coordinators similar to those in PER-003-0; and

V0 Industry Comments

- o Calendar year timing increment
- o Other training needs to be defined

PRC-001-0 System Protection Coordination

FERC NOPR

- o Include a requirement that relevant transmission operators and generator operators must be informed immediately upon the detection of failures in relays or protection system elements on the Bulk-Power System that would threaten reliable operation, so that these entities can carry out the appropriate corrective control actions consistent with those used in mitigating IROL violations; and
- o Clarify that, after being informed of failures in relays or protection system elements on the Bulk-Power System, transmission operators or generator operators shall carry out corrective control actions, i.e., returning the system to a stable state that respects system requirements as soon as possible and no longer than 30 minutes.

V0 Industry Comments

- o Effects on reliability may not be known
- o Consistent terminology as to neighbor vs. affected
- o Not all criteria moved over from policies

The drafting team will reference these guidelines in determining what changes to make to the standards to bring them into conformance with the *Reliability Standards Development Procedure Manual, Version 6* and the *ERO Rules of Procedure*:

Standard Review Guidelines

Applicability

Does this reliability standard clearly identify the functional classes of entities responsible for complying with the reliability standard, with any specific additions or exceptions noted? Where multiple functional classes are identified is there a clear line of responsibility for each requirement identifying the functional class and entity to be held accountable for compliance? Does the requirement allow overlapping responsibilities between Registered Entities possibly creating confusion for who is ultimately accountable for compliance?

Does this reliability standard identify the geographic applicability of the standard, such as the entire North American bulk power system, an interconnection, or within a regional entity area? If no geographic limitations are identified, the default is that the standard applies throughout North America.

Does this reliability standard identify any limitations on the applicability of the standard based on electric facility characteristics, such as generators with a nameplate rating of 20 MW or greater, or transmission facilities energized at 200 kV or greater or some other criteria? If no functional entity limitations are identified, the default is that the standard applies to all identified functional entities.

Purpose

Does this reliability standard have a clear statement of purpose that describes how the standard contributes to the reliability of the bulk power system? Each purpose statement should include a value statement.

Performance Requirements

Does this reliability standard state one or more performance requirements, which if achieved by the applicable entities, will provide for a reliable bulk power system, consistent with good utility practices and the public interest?

Does each requirement identify who shall do what under what conditions and to what outcome?

Measurability

Is each performance requirement stated so as to be objectively measurable by a third party with knowledge or expertise in the area addressed by that requirement?

Does each performance requirement have one or more associated measures used to objectively evaluate compliance with the requirement?

If performance results can be practically measured quantitatively, are metrics provided within the requirement to indicate satisfactory performance?

Technical Basis in Engineering and Operations

Is this reliability standard based upon sound engineering and operating judgment, analysis, or experience, as determined by expert practitioners in that particular field?

Completeness

Is this reliability standard complete and self-contained? Does the standard depend on external information to determine the required level of performance?

Consequences for Noncompliance

In combination with guidelines for penalties and sanctions, as well as other ERO and regional entity compliance documents, are the consequences of violating a standard clearly known to the responsible entities?

Clear Language

Is the reliability standard stated using clear and unambiguous language? Can responsible entities, using reasonable judgment and in keeping with good utility practices, arrive at a consistent interpretation of the required performance?

Practicality

Does this reliability standard establish requirements that can be practically implemented by the assigned responsible entities within the specified effective date and thereafter?

Capability Requirements versus Performance Requirements

In general, requirements for entities to have ‘capabilities’ (this would include facilities for communication, agreements with other entities, etc.) should be located in the standards for certification. The certification requirements should indicate that entities have a responsibility to ‘maintain’ their capabilities.

Consistent Terminology

To the extent possible, does this reliability standard use a set of standard terms and definitions that are approved through the NERC reliability standards development process?

If the standard uses terms that are included in the NERC Glossary of Terms Used in Reliability Standards, then the term must be capitalized when it is used in the standard. New terms should not be added unless they have a ‘unique’ definition when used in a NERC reliability standard. Common terms that could be found in a college dictionary should not be defined and added to the NERC Glossary.

Are the verbs on the ‘verb list’ from the DT Guidelines? If not – do new verbs need to be added to the guidelines or could you use one of the verbs from the verb list?

Violation Risk Factors (Risk Factor)

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures;

or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or

contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. However, violation of a medium risk requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures;

or a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement

A requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. A requirement that is administrative in nature;

or a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. A planning requirement that is administrative in nature.

Time Horizon

The drafting team should also indicate the time horizon available for mitigating a violation to the requirement using the following definitions:

- **Long-term Planning** — a planning horizon of one year or longer.
- **Operations Planning** — operating and resource plans from day-ahead up to and including seasonal.
- **Same-day Operations** — routine actions required within the timeframe of a day, but not real-time.
- **Real-time Operations** — actions required within one hour or less to preserve the reliability of the bulk electric system.
- **Operations Assessment** — follow-up evaluations and reporting of real time operations.

Violation Severity Levels

The drafting team should indicate a set of violation severity levels that can be applied for the requirements within a standard. ('Violation severity levels' replace existing 'levels of non-compliance.')

The violation severity levels must be applied for each requirement and may be combined to cover multiple requirements, as long as it is clear which requirements are included and that all requirements are included.

The violation severity levels should be based on the following definitions:

- **Lower: mostly compliant with minor exceptions** — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more minor details. Equivalent score: 95% to 99% compliant.
- **Moderate: mostly compliant with significant exceptions** — The responsible entity is mostly compliant with and meets the intent of the requirement but is deficient with respect to one or more significant elements. Equivalent score: 85% to 94% compliant.
- **High: marginal performance or results** — The responsible entity has only partially achieved the reliability objective of the requirement and is missing one or more significant elements. Equivalent score: 70% to 84% compliant.
- **Severe: poor performance or results** — The responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: less than 70% compliant.

Compliance Monitor

Replace, ‘Regional Reliability Organization’ with ‘Regional Entity’

Fill-in-the-blank Requirements

Do not include any ‘fill-in-the-blank’ requirements. These are requirements that assign one entity responsibility for developing some performance measures without requiring that the performance measures be included in the body of a standard – then require another entity to comply with those requirements.

Every reliability objective can be met, at least at a threshold level, by a North American standard. If we need regions to develop regional standards, such as in under-frequency load shedding, we can always write a uniform North American standard for the applicable functional entities as a means of encouraging development of the regional standards.

Requirements for Regional Reliability Organization

Do not write any requirements for the Regional Reliability Organization. Any requirements currently assigned to the RRO should be re-assigned to the applicable functional entity.

Effective Dates

Must be 1st day of 1st quarter after entities are expected to be compliant – must include time to file with regulatory authorities and provide notice to responsible entities of the obligation to comply. If the standard is to be actively monitored, time for the Compliance Monitoring and Enforcement Program to develop reporting instructions and modify the Compliance Data Management System(s) both at NERC and Regional Entities must be provided in the implementation plan.

Associated Documents

If there are standards that are referenced within a standard, list the full name and number of the standard under the section called, ‘Associated Documents’.

Functional Model Version 3

Review the requirements against the latest descriptions of the responsibilities and tasks assigned to functional entities as provided in pages 13 through 53 of the draft Functional Model Version 3.