

# Standard Authorization Request Form

Title of Proposed Standard	Real Time Operations (Project 2007-03)
Request Date	April 16, 2007

<b>SAR Requestor Information</b>	<b>SAR Type</b> <i>(Check a box for each one that applies.)</i>
Name            Jim Case	<input type="checkbox"/> New Standard
Primary Contact    Jim Case	<input checked="" type="checkbox"/> Revision to existing Standard
Telephone        870.541.3908	<input checked="" type="checkbox"/> Withdrawal of existing Standard
E-mail            jcase@entergy.com	<input type="checkbox"/> Urgent Action

**Purpose**

Applicable Standards:

- COM-001-1 Telecommunications
- COM-002-2 Communications and Coordination
- TOP-001-1 Reliability Responsibilities and Authorities
- TOP-002-2 Normal Operations Planning
- TOP-003-0 Planned Outage Coordination
- TOP-004-1 Transmission Operations
- TOP-005-1 Operational Reliability Information
- TOP-006-1 Monitoring System Conditions
- TOP-007-0 Reporting Sol and IROL Violations
- TOP-008-0 Response to Transmission Violations
- PER-001-0 Operating Personnel Responsibility and Authority

The purpose of revising these standards is to:

1. Clarify requirements for real-time operations of the Bulk Electric System in the cited standards.
2. Consider stakeholder comments received during the initial development of the standards and other comments received from ERO regulatory authorities as noted in Appendix B.
3. Consider other general improvements as described in Appendix A.
4. This satisfies the ANSI procedure requirement for five-year review of the standards.

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### Industry Need

The industry needs clearer, unambiguous and enforceable standards in order to effectively operate the Bulk Electric System.

### Detailed Description

The drafting team should address the following general changes:

- Adjust measures to match any changes to requirements.
- Add measures as needed to complete the alignment of measures with requirements.
- Address issues outlined in Appendix A.
- Review the industry comments provided during the Version 0 process, CESDT Project, RRSWG efforts, VRF work, etc., as outlined in Appendix B.
- Address the comments from FERC Order 693 as outlined in Appendix B.

In addition, the drafting team should consider the following specific changes in the TOP and COM standards:

- TOP-001-1:
  - Removal of R2 due to redundancy with R3. R2 largely describes an ill-defined procedure which should not be in a standard.
  - Adding the wording 'without delay' after the phrase 'shall comply' in the first sentence of R3.
  - Adding the wording 'without delay' in place of 'immediately' in all requirements where appropriate.
  - Eliminating R5 in light of possible redundancy with IROL standards.
  - Deleting the phrase 'all available' from R6.
  - Replacing 'burden' with 'adversely impact system reliability of' in R7.
  - Replacing 'generator outage' with 'generation facility' in R7.1.
  - Replacing 'at the earliest possible time' with 'without delay' in R7.3.
  - Deleting R8 as it is redundant with IROL, BAL, VAR and EOP standards.
- TOP-002-2:
  - Deleting R1 as it is redundant with TOP-008-1 R1.
  - Deleting R2 as it is simply good utility practice and not really a reliability standard.
  - Deleting R3 as it is redundant with TOP-004-1 R1.
  - Deleting R4 as it is redundant with IRO-005-2, R9.
  - Deleting R5 as it is simply good utility practice and not really a reliability standard.
  - Deleting R6 as it is redundant with BAL- 002-0, R4 and IRO-005-2, R9.
  - Deleting R7 and R9 as they are redundant with BAL-007 through -011.
  - Deleting R8, R10 and R11 as they are redundant with IRO-005-2, R9.
  - Deleting R12 as it is redundant with FAC-010 and -011.
  - Removing references to the Balancing Authority and real power output from R13 as they are contractual issues and as such can not be incorporated in a standard. The remaining language should be clarified.
  - R14 and R15 apply to the Generator Operator and as such do not belong in the TOP standards. The drafting team should look to find another place for these requirements if possible.
  - Deleting R16.2 as it is redundant with FAC-009-1.
  - Deleting R17 as it is no longer needed if the above mentioned changes are made.
  - R18 should be moved to FAC-009-1.

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- Deleting R19 as it can not be measured.
- TOP-003-0:
  - The drafting team should review the 50 MW requirement in R1.1 to determine the size where a generator can have an adverse impact on the Bulk Electric System. See FAC-008-3.
  - Delete Reliability Coordinator when IRO-010-1 is placed in service.
  - Delete R1.3 as it is redundant with IRO-010, R3 as part of the over-all data specification effort.)
  - Re-wording R2 to require general coordination of all facilities that affect Bulk Electric System reliability.
  - Delete R4 in deference to the RC Project.
- TOP-004-1:
  - Delete R1 as it is redundant with IRO-009-1, R4.
  - Deleting R2 as it is simply the definition of an IROL and is redundant with FAC-010-1 and FAC-011-1...
  - Deleting R3 as it is redundant with FAC-010-1 and FAC-011-1.
  - Re-word R6 for clarity.
- TOP-005-1:
  - Deleting R1 as it is redundant with IRO-010-1.
  - Deleting R1.1 as it is redundant with IRO-010-1.
  - Deleting R2 as it is not a reliability concern.
  - Re-wording R3 to provide more clarity and simplicity.
  - Deleting R4 as it is redundant with INT-001-2, R1.
  - When IRO-010-1 becomes effective, Attachment 1 should be translated into a technical specification. It is only a partial list of required data.
- TOP-006-1:
  - Deleting R1 as it is redundant with FAC-009-1, R2.
  - Deleting the Balancing Authority from R2 as the list of items does not apply. Consider deleting the Reliability Coordinator from R2 as it is redundant with IRO-007-1, R1.
  - Moving R3 to PRC-001.
  - Deleting R4 as it is redundant with BAL-001 and -002 and is also addressed in IRO-010-1, R1 and R3.
  - Deleting R5 as (1) it is good utility practice and not a true reliability requirement or (2) provide clarification on the utilization of alarm processing and to provide definition of important deviations or (3) move the requirement to ORG-004-0.
  - Deleting R6 as it is redundant with BAL-005-0, R17.
  - R7: Consider deleting Balancing Authority as it is covered in BAL-005-0, R8. Consider deleting Reliability Coordinator as it is covered in BAL-008-1, R1.
- TOP-007-0:
  - Rewording R2 to say that the Transmission Operator shall act 'without delay' to return the transmission system to within IROL as soon as possible but not longer than the IROL  $T_v$ . The 30 minute time frame should be deleted as it is redundant with IRO-009-1, R2.
  - Delete R4 in deference to the RC Project.
- TOP-008-0:
  - Deleting R1 as it is redundant with TOP-007-0, R3.
  - R2: Suggested wording as follows:
    - R2a: For each IROL or SOL that is identified in advance of Real-time, the TOP shall have one or more Operating Processes, Procedures, or Plans that identify actions it shall take or actions it shall direct others to take to prevent exceeding those IROLs or SOLs or to mitigate actual violations (*Violation Risk Factor: Medium*) (*Mitigation Time Horizon: Operations Planning*)

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- R2b. If the involved TOPs cannot agree on a solution or if there is a difference in derived operating limits (IROLs or SOLs), the more conservative solution or limit shall be utilized.
- Deleting R3 as it is a local utility risk consideration and not a reliability issue as currently worded.
- Re-wording R4 for clarity.
- COM-001-1:
  - Re-word R1 to provide clarity to terms such as 'adequate' and 'reliable'. The term 'telecommunication facilities' needs to be explicitly defined or re-worded to provide clarity.
  - Define 'internally' in R1.1.
  - Delete R1.4 on the basis that it is covered in the new definitions of 'adequate' and 'reliable'. The current phrasing could be interpreted that specific telecommunication devices must be redundant. We believe that this was not the original intent of this requirement. The intent should be to provide redundant telecommunication capability between reliability entities.
  - In R2, periodicity and type of testing, 'vital' and 'special attention' should be defined.
  - Re-word R3 to make clear that each reliability entity shall notify reliability entities to which you have a communication path prior to changes in telecommunication facilities that would affect them and to resolve any coordination issues.
  - Delete R6 as it is simply an ERO procedural issue. It is assumed that if it belongs in standards that it would be in CIP as opposed to COM. This would then cause the deletion of Attachment 1 and would remove NERC Net User Organization as an applicable entity.
- COM-002-2:
  - Delete the first sentence of R1 as it is redundant with COM-001-1 if the Generator Operator is added as an applicable entity in COM-001-1. Delete the second sentence as it is redundant with PER-003-0, R3.
  - Re-word R1.1 to provide clarity as to the definition of applicable areas. Delete the requirement for firm load shedding as it is not a reliability issue.
  - Re-word R2 to provide clarity for the terminology 'clear, concise and definitive'. The use of scripts is a possible solution.

Remove applicability and all references to TOP in PER-001-0 due to redundancy with TOP-001-1, R1 with the ultimate goal to eliminate PER-001-0.

There is an industry need to retain good utility practice information that may be deleted from standards requirements. Any requirements so deleted should be considered for movement into appropriate guides or reference documents.

Note that Appendix B is an informative attachment that contains material that should be addressed in the standards revision process. It should not be considered to contain mandatory changes to the standard.

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***Reliability Functions***

<b>The Standard will Apply to the Following Functions</b> <i>(Check box for each one that applies.)</i>		
X	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.
X	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports Interconnection frequency in real time.
<input type="checkbox"/>	Interchange Coordinator	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
<input type="checkbox"/>	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
<input type="checkbox"/>	Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.
<input 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.
X	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
<input type="checkbox"/>	Transmission Owner	Owns and maintains transmission facilities.
X	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
X	Distribution Provider	Delivers electrical energy to the End-use customer.
<input type="checkbox"/>	Generator Owner	Owns and maintains generation facilities.
X	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.

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<input type="checkbox"/>	Load-Serving Entity	Secures energy and transmission service (and related reliability-related services) to serve the End-use Customer.
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***Reliability and Market Interface Principles***

<b>Applicable Reliability Principles</b> <i>(Check box for all that apply.)</i>	
X	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.
X	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.
X	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.
X	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
X	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
X	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified, and have the responsibility and authority to implement actions.
X	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
	8. Bulk power systems shall be protected from malicious physical or cyber attacks.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b> <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

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### *Related Standards*

<b>Standard No.</b>	<b>Explanation</b>
BAL-001	Real Power Balancing Control Performance
BAL-002	Disturbance Control Performance
BAL-005	Automatic Generation Control
BAL-007	Balance of Resources and Demand
BAL-008	Frequency and Area Control Error
BAL-009	Actions to Return Frequency to within FTL
BAL-010	Frequency Bias Settings
BAL-011	Frequency Limits
FAC-008	Facility Ratings Methodology
FAC-009	Establish and Communicate Facility Ratings
FAC-010	System Operating Limits Methodology for the Planning Horizon
FAC-011	System Operating Limits Methodology for the Operations Horizon
INT-002	Interchange Transaction Tag Communication and Reliability Assessment
IRO-007	Monitoring the Reliability Coordinator Wide Area
IRO-009	Reliability Coordinator Actions to Operate Within IROLs
IRO-010	Reliability Coordinator Data Specification and Collection
ORG-004	Transmission Operator Certification – Data Acquisition and Monitoring
PER-003	Operating Personnel Credentials
PRC-001	System Protection Coordination

### *Related SARs*

<b>SAR ID</b>	<b>Explanation</b>
Reliability Coordination: Project 2006-06	There are parallels between this SAR for Transmission Operators and the SAR for Reliability Coordinators that must be taken into account in the development of the eventual standards.



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### *Regional Variances*

<b>Region</b>	<b>Explanation</b>
ERCOT	
FRCC	
MRO	
NPCC	
SERC	
RFC	
SPP	
WECC	

## **Appendix A**

### **Reliability 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 Electric 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?

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### **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**

This is 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' replaces the 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: more than 95% but less than 100% 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: more than 85% but less than or equal to 95% 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: more than 70% but less than or equal to 85% compliant.

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- **Severe: poor performance or results** — the responsible entity has failed to meet the reliability objective of the requirement. Equivalent score: 70% or less 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 1<sup>st</sup> day of 1<sup>st</sup> 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. The effective date should be linked to the NERC BOT adoption date.

### **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.

## **Appendix B: List of Comments**

The following items are comments received from various sources that shall be considered by the SDT.

### **COM-001-1**

#### **CESDT: (Compliance Elements Standards Drafting Team)**

- R1: clarify 'adequate', 'reliable' and 'internally'.
- The statement 'Where applicable, these facilities shall be redundant and diversely routed' should be a guide and not a requirement. It would also appear that this is duplicated in COM-002-2, R1.
- R2: clarify the term 'Special attention'.
- R3: clarify 'shall provide a means' and the 'ability to investigate'.

#### **VRFSDT: (Violation Risk Factors Standards Drafting Team)**

- R6: administrative.

#### **Version 0 Industry Comments:**

- Gerald Reahlt, Manitoba: There may be redundancy here with Policy 5A Requirement 1.
- Robert Snow: R1 - In section R1, for all but the smallest areas, redundancy and diversely routed telecommunications is required.
- Guy Zito, NPCC: R1 thru R5 - Add "Transmission Owners, Generator Owners, Generator Operators and Load Serving Entities" to the list of FM entities this applies to.
- Ralph Ruffano, NYPA: NPCC's participating members recommend changing R1 to; Each Reliability Authority, Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator and Load Serving Entity shall provide adequate and reliable telecommunications facilities internally and with others for the exchange of Interconnection and operating information necessary to maintain reliability. Where applicable, these facilities shall be redundant and diversely routed. -and changing R2 – R5 from "Each Reliability Authority, Transmission Operator, and Balancing Authority shall" To "Each Reliability Authority, Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator and Load Serving Entity shall" -Remove R6 and attachment 029-1 should be removed. Those procedures apply to NERCnet users, which is a small subset of community that R1 – R5 apply to. Also, these procedures are the steps for obtaining and using NERCnet. Those procedures should not be part of a Reliability Standard.

#### **FERC Order 693:**

- Expand the applicability of the standard to include Generator Operators and Distribution Providers and include requirements for their telecommunication facilities (or as an alternative to applying this Reliability Standard to Generator Operators and Distribution Providers, develop a new Reliability Standard that will address the requirements for telecommunication facilities applicable to Generator Operators and Distribution Providers).
- Identify specific requirements for telecommunications facilities for use in normal and emergency conditions that reflect the roles of the applicable entities and their impact on Reliable Operation
- Include adequate flexibility for compliance with the Reliability Standard, adoption of new technologies and cost-effective solutions

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### **COM-002-2**

#### **CESDT:**

- R1, part 2: clarify ‘Such communication shall be staffed and available for addressing a real-time emergency condition’.
- R2: clarify ‘clear, concise and definitive manner’. Define ‘directive’.

#### **V0 Industry Comments:**

- Mike Kormos, PJM: In a Market environment voice communication with generators is not necessarily required.
- FRCC: R1 - Reliability Authority should be included in this requirement.
- Ray Morella, First Energy: R2 - All groups active in the industry should be required to report sabotage incidents and security breaches.
- Guy Zito, NPCC: R4 - Even though this is a direct translation of the existing Policy, NPCC requests a clarification of the repeat back requirements, specifically are they for emergency, abnormal, normal, all of the above, provide specific examples.

#### **FERC Order 693:**

- Expand the applicability to include distribution providers as applicable entities.
- Include a new requirement for the Reliability Coordinator to assess and approve actions that have impacts beyond the area view of a Transmission Operator or Balancing Authority.
- Require tightened communications protocols, especially for communications during alerts and emergencies.
  - Alternatively, develop a new Reliability Standard that responds to Blackout Report Recommendation No. 26 in the manner described above.
- Include APPA’s suggestions to complete the Measures and Levels of Non-Compliance.

### **PER-001-0**

#### **V0 Industry Comments:**

- Southern Company: Compliance Monitoring Process - The Data Retention requirement for this standard should be 1 year. The probability exists that over time, the job description and perhaps other documentation will be modified. There should not be a requirement to keep past versions of authorizing documents for an indefinite period of time.
- Bill Squib, ECAR: In the Compliance Monitoring Process... if the Reset Period is One Calendar Year, then why is the Data Retention Permanent. In addition, what kind of data is considered for Data Retention? Surely a 10-year old Job Description that has been updated several times does not need to be retained permanently.

### **TOP-001-1**

#### **CESDT:**

- R8: essentially duplicated in other areas; clarify reactive power balance.

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### V0 Industry Comments:

- Michael Moltane, ECAR: (1) Need good, clear definition of “Reliability Emergency” for this to work. Otherwise we will get into the endless and age-old discussion of “what is an emergency?” (2) R1: Recommend adding wording to the sentence “clear decision making authority” that such authority should be documented and incorporated into Operating Procedures so that there will not be any confusion in real time emergencies as to who is responsible for what, and to whom.
- Roman Carter, Southern Company: (1) This req. states "The RA, BA, and TO shall have the responsibility..." The original language in Policy 5 for this requirement uses Operating Authority and this includes entities such as the GO, TO, and BA but not the Reliability Coordinator. Throughout this V-0 Standard the RA is substituted for the RC even within this requirement. Since the original policy says RCs are excluded, this poses a conflict for this requirement. This is also in Requirements 2, 4, and 5. (2) There are times when a Generator Operator must act quickly and may not have time to notify the Transmission Operator. There needs to be an exception here (like that listed in 7C for the RA and TOP) for emergency situations that allows follow up notification by the GO.
- Southern Company: R4 and R6 - Should specify that the local RA will handle all communications with other potentially impacted Reliability Coordinators. As written (Reliability Authority or ...), these requirements could lead to multiple notifications and potential confusion as to exactly what action is going to happen or has taken place. In general, all communications with adjacent Reliability Authorities should be through the local Reliability Coordinator. (Note that R4 may intend that RA contact other RAs, etc., but this is not clear and could easily be misinterpreted.)
- Peter Henderson, IMO: In the sentence: “Under these circumstances the Transmission Operator or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive ...” The use of “or” is confusing and may create ambiguity. The specific role of entity responsible for ‘providing’ and ‘receiving’ information needs to be clarified. Should this be combined responsibility applicable to all or for any? \*\*For the purposes of effective implementation/enforcement of these standards, we recommended that the associated measures, compliance monitoring process and levels of non compliance should also be (a) simultaneously mapped/specified where these exist already and (b) specified/addressed in the very near future, where these do not exist today for consistency. \*\*This comment also applies to Standards 19, 21, 26, 34 and 35.

### FERC Order 693:

- Include Measures and Levels of Non-Compliance for Requirement R8.
- Consider adding other Measures and Levels of Non-Compliance in the Reliability Standard.
- Consider revising Requirements R7.2 and R7.3 to provide that the transmission operator may notify the Reliability Coordinator or the Balancing Authority that it is removing facilities from service as suggested by Santa Clara.

### TOP-002-2

### CESDT:

- R1, part2: clarify ‘Transmission Operator shall be responsible for using available personnel and system equipment’.
- R2: too vague
- R3: too vague; clarify ‘coordinate’.
- R4: too vague; clarify ‘coordinate’.
- R12: duplicated in FAC-013.
- R13: duplicated in MOD-024 & MOD-025.



## **Reliability Standard Review Guidelines**

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- R17: incorrectly written.
- R19: too vague; clarify ‘accuracy’; determine timeliness of model.

### Regional Reliability Standards Working Group (RRSWG):

- R6: remove ‘in accordance with NERC, Regional Reliability Organization, sub-regional, and local reliability requirements’.
- R12: remove ‘in accordance with filed tariffs and/or regional Total transfer Capability and Available Transfer capability calculation processes’.

### V0 Industry Comments:

- Alan Johnson, Mirant: Concerned that the translation from Control Area to BA or TOP creates a new requirement for the GOP. The proposed language allows the possibility of the GOP having to perform tests at the request of both the BA and TOP. The GOP should only be required to perform 2 seasonal capability tests per year (winter and summer) within pre-defined parameters.
- Southern Company: General - Hierarchical structure seems to be implied, but not explicitly defined in the translation of Control Area and Reliability Coordinator language to functional model language. May want to consider writing requirements such that all Balancing Authorities and Transmission Operators within a given Reliability Authority’s area should coordinate their operations planning, etc.
- PG&E: R3, R4, R5 — The parentheticals "where confidentiality agreements allow" imply that confidentiality agreements trump coordination of operational plans needed to assure system reliability. They should be eliminated. Reliability Authorities would then be responsible for coordination between each other, etc. Seems confusing and/or difficult to follow as written.
- Roman Carter, Southern Company: (1) 4, 5 - Requirement says LSE, TSP, and GO coordinate with BA (where confidentiality agreements allow). Under the F.M., the BA can delegate certain tasks that prevent the BA from meeting the Conf. Agreement in order for the BA to meet the obligations of the BA. Version-0 Standard should recognize this ability. (2) Requirement states without intentional delay. How is this enforceable? The burden of proof is with the enforcement organization.
- Ray Morella, First Energy: R7 - Need to explicitly and precisely define what N-1 contingency means.
- Raj Rana, AEP: R18 - R18 only needs to state that the BALANCING AUTHORITIES shall, without any intentional time delay, communicate the information described in the requirement R15 above to their RELIABILITY AUTHORITY, or add such statement to R15. R17 already requires notification to the RA, and these were the activities that Policy today requires notification to the RA, as referenced in Policy 6A R6.1 - 6.5.
- Peter Lebro, National Grid: R3, R4, R5, R12, R17: Confidentiality of information should not be a factor when it comes to reliability – this needs to be addressed otherwise Companies may hide behind the confidentiality clause and not provide the data necessary to conduct operational reliability assessments and coordinate reliable operations.

### FERC Order 693:

- Delete references to confidentiality agreements in Requirements R3 and R4, but address the issue separately to ensure that necessary protections are in place related to confidential information.
- Require the next-day analysis for all IROLs to identify and communicate control actions to system operators that can be implemented within 30 minutes following a contingency to return the system to a reliable operating state and prevent cascading outages.
- Require next day analysis of minimum voltages at nuclear power plants auxiliary power busses.
- Require simulation contingencies to match what will actually happen in the field.

### TOP-003-0

#### VRF:

- R4: poorly written.

#### V0:

- Peter Lebro, National Grid: Standard 16:R1, Standard 37:R4: In the standards it states outage data (generation and transmission) is only required to be submitted by noon of the day ahead, the emphasis should be on submitting the data as soon as it is known but no later than noon day ahead.
- Anita Lee, AESO: CMP - Third paragraph - The RA should "direct" the cancellation of an outage, not "request".
- Robert Snow: Outage information is needed by neighboring reliability authorities much sooner than one day prior to the outage.

#### FERC Order 693:

- Include a new requirement to communicate longer term outages well in advance to ensure reliability and accuracy of ATC calculations.
- Make any facility below the voltage thresholds that, in the opinion of the Transmission Operator, Balancing Authority, or Reliability Coordinator, will have a direct impact on the operation of the Bulk Power System, subject to Requirement R1 for planned outage coordination.
- Incorporate an appropriate lead time for planned outages.

### TOP-004-1

#### CESDT:

- R1: TOP cannot always operate within IROL.
- R2: need to be able to measure 'planning to prevent such an occurrence'.
- R3: same comments as R2; clarify 'when practical'.
- R5: clarify 'every effort to remain connected' and 'imminent danger'.

#### V0:

- Brandian, ISO-NE: In the existing policy the overall role of monitoring of SOL or IROL was assigned to a Control Area. In the applicable version 0 standards a clarification on the role and relationship between Reliability Authority and Transmission Operator should be made with regards to the monitoring of SOL & IROL.
- Guy Zito, NPCC: (1) These Standards must clearly identify, define and provide examples of what a SOL and IROL are. The reason for this is that this is not consistently interpreted by industry. (2) (Also in R5) This needs to be clarified whether these requirements have to be fulfilled by both presently worded RA (i.e. new proposed terminology RC) and TO - "individually or jointly". It is not clear that who would be overall monitor. A more clear role needs to be identified in this standard. Also Reliability entity should be termed as 'RC'.
- Robert Snow: Transmission Security during operation should conform to the applicable portions of Table 1 in the planning standards.

## **Reliability Standard Review Guidelines**

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- Vinod Kotecha, Con Edison: There remains vagueness in the application of Interconnection Reliability Operating Limits (IROL) and guidelines for how it is calculated. The RC has been designated as being responsible for maintaining the interconnection within IROLs, however debate on how these should be calculated continues.
- Tracy Edwards, BPA: R5 indicates that every effort shall be made to remain connected to the Interconnection. However the second sentence of the requirement implies that it may be acceptable to disconnect from the Interconnection if there is imminent danger of violating an IROL or SOL. There can be other conditions other than violating IROL's or SOL's that place the system at great risk. In fact, violating an IROL or SOL in itself does not necessary mean the system is at imminent risk. Therefore, change the second sentence of R5 to read as follows: The Reliability Authority or Transmission Operator may take such actions as disconnecting from the Interconnection, as it deems necessary, to protect its Area.
- Roman Carter, Southern Company: It is not practical to say the RA and the TOP operate, when practical, to protect against instability, separation, or cascading outages. Recommend removing "when practical" because when is it ever practical to allow cascading outages.

### FERC Order 693:

- Modify Requirement R4 to state that the system should be restored to respect proven limits as soon as possible, taking no more than 30 minutes.
- Define high risk conditions under which the system must be operated to respect multiple outages in Requirement R3.

### **TOP-005-1**

### V0:

- Brandian, ISO-NE: Applicability - Add Generator Owners and Load Serving Entities. Extend R5 to include these Functional Model entities.
- Ed Riley, CAISO: R1 - Current policy is for data to be updated every 10 minutes, and is in Standard 15. This rate is too slow and should be increased (every 4-10 seconds) when possible. This should be addressed in Version 1.
- Robert Snow: In Attachment 1, the generator data should include status of voltage control and power system stabilizer facilities.
- Tracy Edwards, BPA: Attachment 015-1: Need a time frame for this data, it is not measurable as it reads now.
- Peter Lebro, National Grid: National Grid USA would like to make the following recommendations to be considered when drafting the next draft of Version 0. Standard 15: There should be a requirement on generators to provide the necessary data as there is a requirement on the PSE's (R6), a paragraph R7 should be inserted which reads 'Generation Operators shall provide information requested by their host Balancing Authority and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.'

### FERC Order 693:

- Include information about the operational status of special protection systems and power system stabilizers in Attachment 1.
- Delete references to confidentiality agreements, but address the issue separately to ensure that necessary protections are in place related to confidential information.

### TOP-006-1

#### CESDT:

- R3: quantify relay information that is required and the scope of the relays to be included; clarify what constitutes 'appropriate technical information'.
- R6: clarify 'measure requirement'

#### VRF:

- R1, 1.1 & 1.2: may need 'available in emergency situation'
- R3: define 'appropriate'.
- R4: what information is required and what is a load pattern?

#### V0:

- Guy Zito, NPCC: Associated Measure, Compliance Monitoring Process and Levels of Non Compliance are missing and needs to be defined in this standard simultaneously.
- Michael Moltane, ECAR: R1.1: Should clarify that the Gen Operator needs to provide "normal and emergency capability for use", as opposed to current wording of just ".all generation resources available for use" (i.e., stretch capability, maximum run time for emergency capability, etc.). R7: Indicates that entities shall "monitor system frequency".....recommend adding wording to indicate frequency shall monitor system frequency at multiple points on their system.
- Alan Boesch, NPPD: R4 - In the Functional Model load forecasts are developed by the Load Serving Entity and provided to the Balancing Authority. The BA sends the aggregated information to the RA. The TOP is not involved in this process. Please change the requirement to match the functional model.
- Various entities: R4 - Load forecasting is the starting point for planning capacity for obligations and thus, deemed to be required for reliability.

#### FERC Order 693:

- Include a new requirement related to the provision of minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk Power System.
- Clarify the meaning of "appropriate technical information" concerning protective relays.

### TOP-007-0

#### V0:

- Ed Riley, CAISO: Measures - 2nd paragraph should be changed to read "...within IROL or SOL..." The CAISO believes that suggesting that the determination of an SOL becoming an IROL after the fact is inappropriate.
- Eric Grant, Progress: R1-R5 - In general, unless better bounds/criteria are set for the determination of IROLs, this standard will not be enforceable or auditable.
- Phil Creech, Progress: "Applicability" for this standard should include "Reliability Authorities".
- Various entities: R5 - This should be considered as a compliance monitoring or administrative procedure rather than a standard.

## **Reliability Standard Review Guidelines**

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- Martin Huang, BC Transmission: R1 and M1 both requires the Reliability Coordinate be informed of any IROL or SOL violation but the level of non-compliance only applies when the limit is exceeded more than 30 minutes and none for failure to report the violation.
- Tracy Edwards, BPA: (1) Compliance Monitoring Process: (bullets following the first paragraph) 2) ... Is vague and not measurable 3) ... Would not necessarily make it an IROL. 4) ... Would not necessarily make it an IROL. 5) ... Is vague and there is no unacceptable loss of load definition for NERC that is measurable. (2) Compliance Monitoring Process: (first paragraph, second sentence) If this sentence were true the violation would have been an IROL to begin with. Give an example of this scenario. (3) Give an example of how you would show evidence something was evaluated. This does not seem like a possible measure. Also the RC may not have needed to give any additional direction and would therefore not have any evidence as required by the measure.
- Linda Campbell, FRCC: Standard 008, M1-M3. What kind of evidence is anticipated? The word evidence can be very subjective and broad. Also the RA should be removed from these measures.

### FERC Order 693:

- Consider comments from APPA, FirstEnergy and SoCal Edison that the Reliability Standards would benefit from the elimination of overlapping matters in TOP-007-0 and TOP-008-1.
- Consider comments from the NRC that raised some significant issues regarding nuclear power plants voltage requirements.

### **TOP-008-0**

### CESDT:

- R2: clarify 'prevent the likelihood'.
- R4, part 2: clarify 'in all operating timeframes'.