

## Standard Authorization Request Form

Title of Proposed Standard	Revisions to Facility Ratings Standards FAC-008-1 and FAC-009-1
Request Date	December 24, 2008
Revision Date	July 23, 2009
Revision 2 Date	October 21, 2009

<b>SAR Requestor Information</b>	<b>SAR Type</b> <i>(Check a box for each one that applies.)</i>
Name            Paul Johnson	<input type="checkbox"/> New Standard
Primary Contact    Paul Johnson, Managing Director of Transmission Operations	<input checked="" type="checkbox"/> Revision to existing Standards FAC-008-1 FAC-009-1
Telephone    614-413-2200 Fax	<input type="checkbox"/> Withdrawal of existing Standard
E-mail            pbjohnson@aep.com	<input type="checkbox"/> Urgent Action

<b>Purpose</b>	<p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> <li>1. Ensure they are enforceable as mandatory reliability standards with financial penalties - the applicability to bulk power system owners, operators, and users, and as appropriate particular classes of facilities, is clearly defined; the purpose, requirements, and measures are results-focused and unambiguous; the consequences of violating the requirements are clear.</li> <li>2. Consider applicable FERC directives from Order 693</li> <li>3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1)</li> <li>4. Satisfy the standards procedure requirement for five-year review of the standards.</li> </ol>
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**Industry Need**

As the electric reliability organization begins enforcing compliance with reliability standards under Section 215 of the Federal Power Act in the United States and applicable statutes and regulations in Canada, the industry needs a set of clear, measurable, and enforceable reliability standards. While the Federal Energy Regulatory Commission approved both FAC-008 and FAC-009 as enforceable reliability standards, the Commission also directed NERC to make modifications to FAC-008 and indicated that making these modifications should be considered a 'high' priority.

**Brief Description**

The revisions to these two standards will result in a single standard that is responsive to the recommended changes identified in the Standard Review Guidelines attached to this SAR and also to two of the three applicable FERC directives in Order 693.

The proposed changes to FAC-008 and FAC-009 have already been through stakeholder review and reached consensus in 2008 on all requirements except the requirement (R7) developed to meet the FERC directive in Order 693 that required identification of the most limiting component of a facility and the theoretical increase in rating if the limitation were removed. Stakeholders indicated that this requirement (R7) did not have a reliability-related benefit, and voted against the inclusion of a requirement to meet this directive. Thus, this SAR proposes the same standard that was developed and balloted in late 2008, but without the requirement (R7).

Revise the Generator Owner requirements to provide greater clarity of the Generator Owner responsibilities and options for developing facility rating documentation.

Revise the Measures, and compliance elements, including Violation Severity Levels (VSLs) to conform to changes made to the requirements for the Generator Owner and to conform to the latest revisions to the VSL Guidelines and in support of the work done by the VSL Drafting Team.

**Detailed Description**

The revisions to these two standards are shown in the proposed standard.

The proposed changes have already been through stakeholder review and appeared to reach consensus in 2008 with the exception of adding a requirement to meet the third FERC directive shown below. Stakeholders indicated that the third directive was not needed for reliability, and voted against the inclusion of a requirement to meet this directive. The first two directives have been met in the attached proposed standard.

- (1) document underlying assumptions and methods used to determine normal and emergency facility ratings;
- (2) develop facility ratings consistent with industry standards developed through an open, transparent and validated process and
- (3) for each facility, identify the limiting component and, for critical facilities, the resulting increase in rating if that component is no longer limiting.

Stakeholders have indicated that additional clarity is needed with respect to the requirements assigned to Generator Owners and the requirements assigned to the Generator Owners will be revised. Additional conforming changes will be made to measures and compliance elements in support of the revisions made to the requirements assigned to the Generator Owner.

The Violation Severity Levels Standard Drafting Team (Project 2007-23) has posted proposed Violation Severity Levels (VSLs) for FAC-008-1 and FAC-009-1. The SDT used the

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VSLs that the VSLDT developed for new requirements R4-R7 according to the mapping table below:

Old Standard	Old Requirement	New Standard	New Requirement
FAC-008-1	R2	FAC-008-2	R4
FAC-008-1	R3	FAC-008-2	R5
FAC-009-1	R1	FAC-008-2	R6
FAC-009-1	R2	FAC-008-2	R7

The SDT developed VSLs for new requirements R1-R3 in accordance with the latest version of the VSL guidelines. The revised VSLs for R1-R3 are consistent with the VSLs developed for other FAC-008-2 requirements.

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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>		
<input type="checkbox"/>	Reliability Coordinator	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest Reliability Authority.
<input type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time.
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules.
<input type="checkbox"/>	Planning Authority	Plans the Bulk Electric System.
<input type="checkbox"/>	Resource Planner	Develops a long-term (>one year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input type="checkbox"/>	Transmission Planner	Develops a long-term (>one year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities.
<input type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders.
<input type="checkbox"/>	Distribution Provider	Provides and operates the "wires" between the transmission system and the customer.
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s).
<input type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services.
<input type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity, and all necessary Interconnected Operations Services as required.
<input type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user.

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***Reliability and Market Interface Principles***

<b>Applicable Reliability Principles</b> <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 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 type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input 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 type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
<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>

***Related SARs***

<b>SAR ID</b>	<b>Explanation</b>

***Regional Differences***

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

**The drafting team that developed the version of FAC-008-2 that was balloted in late 2008 referenced these guidelines in determining what changes to make to the standards to bring them into conformance with the *Reliability Standards Development Procedure Manual, Version 6.1* 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.

**Violation Risk Factors (Risk Factor)**

Identify the potential reliability significance of a violation of the associated requirement. Each requirement must have an associated VRF.

A **High Risk Factor** requirement:

- (a) is one that, if violated, could directly cause or contribute to bulk power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures; or
- (b) is 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 power system instability, separation, or a cascading sequence of failures, or could place the bulk power system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

A **Medium Risk Factor** requirement:

- (a) is a requirement that, if violated, could directly affect the electrical state or the capability of the bulk power system, or the ability to effectively monitor and control the bulk power system, but is unlikely to lead to bulk power system instability, separation, or cascading failures; or



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

A **Lower Risk Factor** requirement is administrative in nature and:

(a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the bulk power system, or the ability to effectively monitor and control the bulk power system; or

(b) is 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 affect the electrical state or capability of the bulk power system, or the ability to effectively monitor, control, or restore the bulk power system.

**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 develop a set of violation severity levels that can be applied for the requirements within the standard.

**The violation severity levels should be based on the following criteria:**

Define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple “degrees” of noncompliant performance and may have only one, two, or three VSLs.

Lower	Moderate	High	Severe
Missing a minor element (or a small percentage) of the required performance  The performance or product measured has significant value as it almost meets the full	Missing at least one significant element (or a moderate percentage) of the required performance.  The performance or product measured still has significant value in	Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component.  The performance or	Missing most or all of the significant elements (or a significant percentage) of the required performance.  The performance measured does not meet the intent of the

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intent of the requirement.	meeting the intent of the requirement.	product has limited value in meeting the intent of the requirement.	requirement or the product delivered cannot be used in meeting the intent of the requirement.
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### Compliance Monitor

Replace, “Regional Reliability Organization” with “Regional Entity.”

Replace “NERC” with “ERO.”

### 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.

### 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.