

### Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

#### Development Steps Completed:

1. SAC approved SAR and standard for posting (January 11, 2007).
2. Posted for initial comment period from January 15 – February 28, 2007.
3. Second draft posted for comment from July 19 – August 17, 2007
4. Third draft posted for comment from July 28 through August 26, 2008

#### Proposed Action Plan and Description of Current Draft:

This is the final draft of the proposed standard, and will be submitted to the Standards Committee with a request to authorize posting the standard for a 30-day pre-ballot review period, along with the associated implementation plan.

#### Future Development Plan:

Anticipated Actions	Anticipated Date
1. Post response to comments.	September 16, 2008
2. Post for 30-day pre-ballot review	September 24– October 23, 2008
3. Conduct initial ballot	October 24 – November 3, 2008
4. Respond to comments with initial ballot	November 7, 2008
5. Conduct recirculation ballot	November 10-19, 2008
6. BOT adoption	To be determined
7. File with regulatory authorities	To be determined

### **Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

None.

## A. Introduction

1. **Title:** Facility Ratings
2. **Number:** FAC-008-2
3. **Purpose:** To ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on technically sound principles. A Facility Rating is essential for the determination of System Operating Limits.
4. **Applicability**
  - 4.1. Transmission Owner.
  - 4.2. Generator Owner.
5. **Proposed Effective Date:** The first day of the first calendar quarter that is twelve months beyond the date approved by applicable regulatory authorities, or in those jurisdictions where regulatory approval is not required, the first day of the first calendar quarter twelve months following BOT adoption.

## B. Requirements

- R1. The Generator Owner shall have a documented methodology for determining the Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned generating unit Facilities that identifies how each of the following were considered: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
  - R1.1. Facility commissioning data.
  - R1.2. ~~Either p~~Performance history or rating verification ~~accompanied~~ supplemented by engineering analysis.
  - R1.3. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
  - R1.4. Ambient conditions.
  - R1.5. Equipment Rating industry standard(s) used in development of this methodology.
- R2. The Transmission Owner and Generator Owner shall each have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned Facilities (except for those generating unit Facilities addressed in R1) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
  - R2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility shall be consistent with at least one of the following:

~~Nameplate rating~~ Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

    - R2.1.1.
    - R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
    - R2.1.3. A practice that has been verified by testing or engineering analysis.
  - R2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R2.1 including identification of how each of the following were considered:

- R2.2.1.** Equipment Rating standard(s) used in development of this methodology.
  - R2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
  - R2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
  - R2.2.4.** Operating limitations.<sup>1</sup>
- R2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
  - R2.4.1.** The scope of equipment addressed shall include, but not be limited to, transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
  - R2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** The Transmission Owner and Generator Owner shall each make its Facility Ratings Methodology available for inspection and technical review by those Reliability Coordinators, Transmission Operators, Transmission Planners and Planning Coordinators that have responsibility for the area in which the associated Facilities are located, within 21 calendar days of receipt of a request. [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]
- R4.** If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's or Generator Owner's Facility Ratings Methodology, the Transmission Owner or Generator Owner shall provide a response to that commenting entity within 45 calendar days of receipt of those comments. The response shall indicate whether a change will be made to the Facility Ratings Methodology and, if no change will be made to that Facility Ratings Methodology, the reason why. [*Violation Risk Factor: Lower*] [*Mitigation Time Horizon: Operations Planning*]
- R5.** The Transmission Owner and Generator Owner shall each have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning, Same-day Operations, Real-time Operations*]
- R6.** The Transmission Owner and Generator Owner shall each provide Facility Ratings for its solely and jointly owned Facilities that are existing Facilities, new Facilities, modifications to existing Facilities and re-ratings of existing Facilities to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), and Transmission Operator(s) as scheduled by such requesting entities. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning, Same-day Operations, Real-time Operations*]
- R7.** If a Reliability Coordinator, Transmission Operator, Transmission Planner, or Planning Coordinator requests:
  - Identification of the most limiting Equipment that comprises a Facility, or

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<sup>1</sup> Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- The hypothetical increase in the Facility’s Rating if that most limiting Equipment that comprises that Facility were not considered in the development of that Facility Rating

then the Transmission Owner shall provide the requested information within 30 calendar days, (or a later date if specified by the requester) if the Facility Rating meets all of the criteria in the table below: [*Violation Risk Factor: Lower*] [*Time Horizon: Operations Planning*]

If the <u>Transmission</u> Facility Rating meets <b>both</b> of the following:	<b>And</b> the requester provides evidence that the Facility Rating is at least <b>one</b> of the following:
<ul style="list-style-type: none"> <li>- It is a thermal rating</li> <li>- It is limited by equipment other than the conductor</li> </ul>	<ul style="list-style-type: none"> <li>- Used to develop an Interconnection Reliability Operating Limit</li> <li>- A limitation of Total Transfer Capability</li> <li>- An impediment to generation deliverability</li> <li>- An impediment to service to major cities or load pockets</li> </ul>

**C. Measures**

- M1.** The Generator Owner shall have a documented Facility Ratings Methodology that shows how each of the items identified in Requirement 1.1 through Requirement 1.5 were considered.
- M2.** The Transmission Owner and Generator Owner shall each have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 2.1 through Requirement 2.4.
- M3.** The Transmission Owner and Generator Owner shall each have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its Facility Ratings Methodology available for inspection within 21 calendar days of a request in accordance with Requirement 3.
- M4.** If the Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner’s or Generator Owner’s Facility Ratings Methodology, the Transmission Owner or Generator Owner shall have evidence, (such as a copy of a dated electronic or hard copy note, or other comparable evidence from the Transmission Owner or Generator Owner addressed to the commenter that includes the response to the comment,) that it provided a response to that commenting entity in accordance with Requirement 4.
- M5.** The Transmission Owner and Generator Owner shall have evidence to show ~~or shall be able to demonstrate~~ that its Facility Ratings are consistent with its Facility Ratings Methodology (Requirement 5).
- ~~**M6.** The Transmission Owner’s and Generator Owner’s set of Facility Ratings shall include ratings for its solely and jointly owned Facilities including new Facilities, existing Facilities, modifications to existing Facilities and re-ratings of existing Facilities. (Requirement 6)~~
- M7.M6.** The Transmission Owner and Generator Owner shall each have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), and Transmission Operator(s) in accordance with Requirement 6.

**M8:M7.** The Transmission Owner shall each have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided requested information (identification of the most limiting Equipment that comprises a Facility and the hypothetical increase in the Facility's Rating if that most limiting Equipment that comprises that Facility were not considered in the development of that Facility's Rating) to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), and Transmission Operator(s) in accordance with Requirement 7.

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Enforcement Authority

Regional Entity

#### 1.2. Compliance Monitoring Period and Reset Timeframe

Not Applicable

#### 1.3. Compliance Monitoring and Enforcement Processes:

- Self-Certifications
- Spot Checking
- Compliance Audits
- Self-Reporting
- Compliance Violation Investigations
- Complaints

#### 1.4. Data Retention

The Generator Owner shall keep its current, in force Facility Rating Methodology (for R1) and any modifications to the methodology that were in force since last compliance audit period for Measure 1 and Measure 5.

The Transmission Owner and Generator Owner shall keep its current, in force Facility Ratings Methodology (for R2) and any modifications to the methodology that were in force since the last compliance audit for Measure 2 and Measure 5.

The Transmission Owner and Generator Owner shall keep its current, in force Facility Ratings and any changes to those ratings for three calendar years for Measure 5, ~~and Measure 6.~~

The Generator Owner and Transmission Owner shall each keep evidence for Measure 3, Measure 4, Measure ~~7~~6, and Measure ~~8~~7 for three calendar years.

If a Generator Owner or Transmission Owner is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit and all subsequent compliance records.

#### 1.5. Additional Compliance Information

None

2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how ambient conditions were considered. (R1.4)	The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how either of the following were considered: Ratings provided by equipment manufacturers (R1.3) Equipment Rating standard(s) (R1.5)	The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how either of the following were considered: Facility commissioning data. (R1.1) <del>Facility</del> Performance history or rating verification accompanied by engineering analysis. (R1.2)	The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how any of the following were considered: Facility commissioning data. (R1.1) <del>R1.2.</del> —Performance history or rating verification accompanied by engineering analysis. (R1.2) Ratings provided by equipment manufacturers. (R1.3) Ambient conditions. (R1.4) Equipment Rating standard(s) (R1.5)
R2	The Transmission Owner’s or Generator Owner’s Facility Rating Methodology addresses all of its solely and jointly owned facilities, but is missing one of the following: Does not identify how it considered ratings from equipment manufacturers specifications (R2.2.2) OR The scope of equipment type addressed is missing one of the following: transmission conductors, transformers, relay	The Transmission Owner’s or Generator Owner’s Facility Rating Methodology does not address one of the following sub-requirements: R2.2.1, R2.2.3, R2.2.4. OR The scope of equipment addressed is missing two of the following equipment types: transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt. (R2.4.1) OR	The Transmission Owner’s or Generator Owner’s Facility Rating Methodology does not address two of the following sub-requirements: R2.2.1, R2.2.3, R2.2.4. OR <del>The methodology does not respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility. (R2.3)</del> OR The scope of equipment	The Transmission Owner or Generator Owner has no Facility Rating Methodology. (R2)

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R3	<p>protective devices, terminal equipment, and series and shunt compensation devices. (R2.4.1) OR The methodology document is missing a statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility. (R2.3)</p> <p>The Transmission Owner or Generator Owner made its methodology available <u>to requesting entities</u> for inspection, but within a time period that was greater than 21 calendar days but less than <del>45</del> <u>30</u> calendar days of receipt of a request - (R3)</p>	<p>The methodology does not identify whether it is consistent with the methods identified in R2.1.1, R2.1.2, or R2.1.3.</p> <p>The Transmission Owner or Generator Owner did not make its methodology available to <del>either one of its requesting Transmission Planners or its Planning Coordinators_ but did make it available to its Reliability Coordinators and Transmission Operators.</del> (R3) OR <u>The Transmission Owner or Generator Owner made its methodology available for inspection, but within a time period that was greater than 30 calendar days but less than 45 calendar days of receipt of a request</u></p>	<p>addressed is missing more than two of the following equipment types: transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices. (R2.4.1) OR The methodology is missing the process for determining either normal or emergency ratings. (R2.4.2)</p> <p>The Transmission Owner or Generator Owner did not make its methodology available to <del>either one of its requesting Transmission Planners or Planning Coordinators</del> OR <del>The Transmission Owner or Generator Owner made its methodology available to some but not all of its Reliability Coordinators and or its Transmission Operators.</del> (R3) <u>The Transmission Owner or Generator Owner made its methodology available for inspection, but within a time period that was greater than 45 calendar days but less than 60 calendar days of receipt of a</u></p>	<p>The Transmission Owner or Generator Owner <u>received requests, but did not make its Facility Ratings Methodology available to any of the required requesting entities for inspection within 60 calendar days of a receipt of a request.</u> (R3)</p>

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R4	<p>The Transmission Owner or Generator Owner provided a complete response to comments on its Facility Ratings Methodology, but the response was <u>provided more than 45 days but less than 90 days after the comments were received</u>late. (R4)</p>	<p>The Transmission Owner or Generator Owner provided an <u>on-time</u> <del>late</del> response to comments on its Facility Ratings Methodology <del>and</del> <u>but</u> the response was missing one of the following:</p> <p>An indication of whether changes <del>were</del> <u>will be</u> made</p> <p><u>OR</u></p> <p><u>If no change will be made, A</u>the reason why no change will be made. <del>n</del> explanation to support the decision made. (R4)</p>	<p><u>request</u></p> <p>The Transmission Owner or Generator Owner provided a response to comments on its Facility Ratings Methodology, <del>on-time</del>, but <u>the response</u> was <u>provided more than 45 days but less than 90 days after the comments were received, and the response was missing one</u> <del>both</del> of the following:</p> <p>An indication of whether changes <del>were</del> <u>will be</u> made</p> <p><u>OR</u></p> <p><u>If no change will be made, the</u> reason why no change will be made. <del>An</del> explanation to support the decision made. (R4)</p>	<p><del>The Transmission Owner or Generator Owner provided a response to comments on its Facility Ratings Methodology, that was late and was missing</del> <b>both</b> of the following:</p> <p><del>An indication of whether changes were made</del></p> <p><del>An explanation to support the decision made</del></p> <p><del>OR</del></p> <p>The Transmission Owner or Generator Owner did not provide any response to comments on its Facility Ratings Methodology within 90 calendar days. (R4)</p>

R5	<p>The Transmission Owner or Generator Owner developed Facility Ratings and <u>at least one rating, some</u> but less than 5% of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5)</p>	<p>The Transmission Owner or Generator Owner developed Facility Ratings but 5% or more, but less than 10% of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5)</p>	<p>The Transmission Owner or Generator Owner developed Facility Ratings but 10% or more, but less than 15% of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5)</p>	<p>The Transmission Owner or Generator Owner developed Facility Ratings but 15% or more of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5)</p>
R6	<p>The Transmission Owner or Generator Owner provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by up to 15 calendar days. (R6)</p>	<p>The Transmission Owner or Generator Owner provided all of its Facility Ratings <u>on schedule</u> to all but one of the requesting entities but the Facility Ratings provided to one of the required entities were incomplete.</p> <p>OR</p> <p>The Transmission Owner or Generator Owner provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by 15 calendar days or more but less than 30 calendar days. (R6)</p>	<p>The Transmission Owner or Generator Owner provided some Facility Ratings <u>on schedule</u> to all of the requesting entities but the Facility Ratings provided to the following entities were incomplete:</p> <ul style="list-style-type: none"> <li>– Planning Coordinators and Transmission Planners, or</li> <li>– Reliability Coordinators and Transmission Operators</li> </ul> <p>OR</p> <p>The Transmission Owner or Generator Owner provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by 30 calendar days or more but less than 45 calendar days. (R6)</p>	<p>The Transmission Owner or Generator Owner did not provide any of its Facility Ratings to the following entities:</p> <ul style="list-style-type: none"> <li>– Planning Coordinators and Transmission Planners, or</li> <li>– Reliability Coordinators and Transmission Operators</li> </ul> <p>OR</p> <p>The Transmission Owner or Generator Owner provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by 45 calendar days or more. (R6)</p>

R7	The Transmission Owner reported all of the required information but in a time period that was greater than 30 calendar days, but less than 60 calendar days. (R7)	The Transmission Owner responded to the request within 30 calendar days, but the response was incomplete. (R7)	The Transmission Owner responded to the request in a time period that was greater than 30 calendar days, but less than 60 calendar days AND The response was incomplete. (R7)	The Transmission Owner did not provide any response within 60 calendar days. (R7)
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**E. Regional Variances**

None Identified

**F. Associated Documents**

None Identified

**Version History**

Version	Date	Action	Change Tracking
<u>2</u>	<u>To be determined.</u>	<u>Combined FAC-008-1 and FAC-009-1 and made changes to address FERC directives in Order 693.</u>	<u>Revision</u>