

Exhibit A

Reliability Standard FAC-008-3 — Facility Ratings Submitted for Approval

A. Introduction

1. **Title:** **Facility Ratings**
2. **Number:** FAC-008-3
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. **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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
 - 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
 - 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
 - R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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]*
 - R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner’s Facility Ratings methodology or Generator Owner’s documentation for determining its Facility Ratings and its Facility Rating 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] [Time Horizon: Operations Planning]*
 - R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
 - R7. Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
 - R8. Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide requested information as specified below (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), Transmission Owner(s) and Transmission Operator(s): *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- 8.1.** As scheduled by the requesting entities:
 - 8.1.1.** Facility Ratings
 - 8.1.2.** Identity of the most limiting equipment of the Facilities
- 8.2.** Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that limits the use of Facilities under the requester's authority by causing any of the following: 1) An Interconnection Reliability Operating Limit, 2) A limitation of Total Transfer Capability, 3) An impediment to generator deliverability, or 4) An impediment to service to a major load center:
 - 8.2.1.** Identity of the existing next most limiting equipment of the Facility
 - 8.2.2.** The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement R4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings, 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 R5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement R6).
- M7.** Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R7.
- M8.** Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability

Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R8.

D. Compliance

1. Compliance Monitoring Process

1.1. **Compliance Enforcement Authority**

Regional Entity

1.2. **Compliance Monitoring and Enforcement Processes:**

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

1.3. **Data Retention**

The Generator Owner shall keep its current documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.

The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, and Measure M5, for three calendar years.

The Generator Owner shall keep evidence for Measure M7 for three calendar years.

The Transmission Owner (and Generator Owner that is subject to Requirement R2) shall keep evidence for Measure M8 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.

1.4. **Additional Compliance Information**

None

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request. | The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request. | The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3) |
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|---|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to and including 15 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. OR The Generator Owner failed to provide its Facility Ratings to the requesting entities. |
| R8 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to and including 15 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 100%, but not less than or equal to 95% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 95%, but not less than or equal to 90% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 90%, but not less than or equal to 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the required Rating information to the requesting entity, but did so more |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|---|---|
| | <p>required Rating information to the requesting entity, but the information was provided up to and including 15 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 100%, but not less than or equal to 95% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 15 calendar days but less than or equal to 25 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 95%, but not less than or equal to 90% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 25 calendar days but less than or equal to 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 90%, but no less than or equal to 85% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>than 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 85 % of the required Rating information to the requesting entity. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity failed to provide its Rating information to the requesting entity. (R8, Part 8.1)</p> |

Standard FAC-008-3 — Facility Ratings

E. Regional Variances

None.

F. Associated Documents

Version History

| Version | Date | Action | Change Tracking |
|---------|--------------|-----------------------------------|--|
| 1 | Feb 7, 2006 | Approved by Board of Trustees | New |
| 1 | Mar 16, 2007 | Approved by FERC | New |
| 2 | May 12, 2010 | Approved by Board of Trustees | Complete Revision, merging FAC_008-1 and FAC-009-1 under Project 2009-06 and address directives from Order 693 |
| 3 | May 24, 2011 | Addition of Requirement R8 | Project 2009-06 Expansion to address third directive from Order 693 |
| 3 | May 24, 2011 | Adopted by NERC Board of Trustees | |

Exhibit B

Implementation Plan for Reliability Standard FAC- 008-3 — Facility Ratings Submitted for Approval

Project 2009-06 Facility Ratings Implementation Plan

Implementation Plan for FAC-008-3 – Facility Ratings

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should all be retired when FAC-008-03 becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)

Compliance with the Standard

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before FAC-008-3 becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

Project 2009-06 Facility Ratings Implementation Plan

Implementation Plan for FAC-008-3 – Facility Ratings

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should all be retired when FAC-008-03 becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)

Compliance with the Standard

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- Transmission Owners
- Generator Owners

Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before FAC-008-3 becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

Exhibit C

Mapping Document Between FAC-008-3 — Facility Ratings and FAC-008-1— Facility Ratings Methodology and FAC-009-1 — Establish and Communicate Facility Ratings

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|---|---|---|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| <p>R1. The Transmission Owner and Generator Owner shall each document its current methodology used for developing Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned Facilities. The methodology shall include all of the following:</p> <p>R1.1. A statement that a Facility Rating shall equal the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> <p>R1.2. The method by which the Rating (of major BES equipment that comprises a Facility) is determined.</p> <p>R1.2.1. The scope of equipment addressed shall include, but not be limited to, generators,</p> | <p>Subdivided the requirement from FAC-008-1 into 3 separate requirements so that R1 now applies only to the Generator Owner for facilities associated with the generating unit - R2 applies only to Generator Owners that own facilities between the step up transformer and the point of interconnection, and R3 applies only to the Transmission Owner.</p> <p>Modified the requirement to meet the directive to develop ratings consistent with industry standards developed through an</p> | <p>R3. Each Transmission Owner shall 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 and R2) that contains all of the following: <i>[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]</i></p> <p>3.1 The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:</p> <ul style="list-style-type: none"> • Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. • 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). • A practice that has been verified by testing, performance history or engineering analysis. <p>3.2 The underlying assumptions, design criteria, and</p> |

| Standard: FAC-008-3 | | |
|---|---|---|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| <p>transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.</p> <p>R1.2.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.</p> <p>R1.3. Consideration of the following:</p> <p>R1.3.1. Ratings provided by equipment manufacturers.</p> <p>R1.3.2. Design criteria (e.g., including applicable references to industry Rating practices such as manufacturer’s warranty, IEEE, ANSI or other standards).</p> <p>R1.3.3. Ambient conditions.</p> <p>R1.3.4. Operating</p> | <p>open process (see Requirement R3, Part 3.1, second bullet and Requirement R2, Part .1, second bullet and Requirement R1, Part 1.1, second bullet).</p> <p>Modified the requirement to meet the directive to require documenting the underlying assumptions and methods used (see Requirement R3, Part 3.2, Requirement R1, Part 1.1, and Requirement R2, Part 2.2 in FAC-009-3) to determine normal and emergency ratings (see Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2).</p> | <p>methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:</p> <p>3.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.</p> <p>3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>3.2.4. Operating limitations.¹</p> <p>3.3 A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> <p>3.4. The process by which the Rating of equipment that comprises a Facility is determined.</p> <p>3.4.1. 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.</p> |

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

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|--|---|---|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| <p>limitations.</p> <p>R1.3.5. Other assumptions.</p> | | <p>3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.</p> |
| | | <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. <i>[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]</i></p> <p>1.1. The documentation shall contain assumptions used to rate the generator and at least one of the following:</p> <ul style="list-style-type: none"> • Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis. • Operational information such as |

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|--|---|---|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| | | <p>commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.</p> <p>1.2. The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> |
| | | <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. <i>[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]</i></p> <p>2.1. The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <ul style="list-style-type: none"> • Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. • One or more industry standards developed |

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|--|---|--|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| | | <p>through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <ul style="list-style-type: none"> • A practice that has been verified by testing, performance history or engineering analysis. <p>2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:</p> <p>2.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.</p> <p>2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>2.2.4. Operating limitations.²</p> <p>2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> |

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|---|---|--|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| | | <p>2.4. The process by which the Rating of equipment that comprises a Facility is determined.</p> <p>2.4.1. The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.</p> <p>2.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.</p> |
| <p>R2. 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 Authorities that have responsibility for the area in which the associated Facilities are located, within 15 business days of receipt of a request.</p> | <p>Moved into FAC-008-3 as R4</p> | <p>R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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. <i>[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]</i></p> |
| <p>R3. If a Reliability Coordinator, Transmission Operator, Transmission Planner, or</p> | <p>Moved into FAC-008-3 as R5</p> | <p>R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides</p> |

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|--|---|--|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| <p>Planning Authority provides written 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 written 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.</p> | | <p>documented comments on its technical review of a Transmission Owner’s Facility Ratings methodology or Generator Owner’s documentation for determining its Facility Ratings and its Facility Rating 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. <i>[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]</i></p> |
| Requirement in Approved Standard FAC-009-1 | Translation to New Standard or Other Action | Comments |
| <p>R1. The Transmission Owner and Generator Owner shall each establish Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology.</p> | <p>Moved into FAC-008-3 as R6.</p> | <p>R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. <i>[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]</i></p> |
| <p>R2. The Transmission Owner and Generator Owner shall each provide Facility Ratings for its solely and jointly owned Facilities that are existing Facilities, new Facilities,</p> | <p>Moved into FAC-008-3 as R7</p> | <p>R7. Each Generator Owner shall 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</p> |

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|---|--|---|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| modifications to existing Facilities and re-ratings of existing Facilities to its associated Reliability Coordinator(s), Planning Authority(ies), Transmission Planner(s), and Transmission Operator(s) as scheduled by such requesting entities. | | its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. <i>[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]</i> |
| | New Requirement to meet Order 693, directive to identify the limiting component for all facilities and for critical facilities, the increase in rating if the most limiting component is no longer limiting. | <p>R8. Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide requested information as specified below (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), Transmission Owner(s) and Transmission Operator(s): <i>[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]</i></p> <p>8.1. As scheduled by the requesting entities:</p> <ul style="list-style-type: none"> 8.1.1. Facility Ratings 8.1.2. Identity of the most limiting equipment of the Facilities <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that limits the use of Facilities under the requester’s authority by causing any of the following: 1) An Interconnection Reliability Operating Limit, 2) A</p> |

Mapping Table Showing Translation of FAC-008-1 – Facility Ratings Methodology and FAC-009-1 – Establish and Communicate Facility Ratings into FAC-008-3 – Facility Ratings

| Standard: FAC-008-3 | | |
|--|---|---|
| Requirement in Approved Standard FAC-008-1 | Translation to New Standard or Other Action | Comments |
| | | limitation of Total Transfer Capability, 3) An impediment to generator deliverability, or 4) An impediment to service to a major load center: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. |

Exhibit D

Consideration of Comments Reports Created During the Development of Reliability Standard FAC-008-3 — Facility Ratings

Project 2009-06 Facility Ratings

[Related Files](#)

Status:

The NERC Board of Trustees adopted the standard on May 24, 2011.

Purpose/Industry Need:

The expansion of this project is necessary to address a directive from Order 693 that was not addressed in FAC-008-2 – Facility Ratings. There were three directives in Order 693 relative to FAC-008-1 – Facility Ratings:

- (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 process such as IEEE or CIGRE and
- (3) identify the limiting component(s) and define the increase in rating based on the next limiting component(s) for all critical facilities.

The version of FAC-008-2 that was approved in 2010 only addressed the first two of the three directives. FERC's September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay on its March 18 Order included the following clarification regarding the third directive:

"In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event."

With this additional clarity, the drafting team has developed a new requirement to address the reliability intent of the third directive. NERC received a final order on March 17, 2011 granting the ERO 90 days to file a version of FAC-008 that addresses all three of the directives from Order 693, making the filing due on June 15, 2011.

| Draft | Action | Dates | Results | Consideration of Comments |
|--|---|-------------------------------------|---|---|
| <p>Draft 2</p> <p>FAC-008-3 Clean Redline to last posted Redline to last approved</p> <p>Implementation Plan Clean Redline to last approved</p> | <p>Recirculation Ballot</p> <p>Vote>> Info>></p> | <p>05/12/11 - 05/23/11</p> | <p>Summary>></p> <p>Full Record>></p> | |
| <p>Draft 1</p> <p>Supplemental SAR</p> <p>FAC-008-3 Clean Redline to last approval</p> <p>Supporting Materials:</p> <p>Comment Form (word) Implementation Plan Clean Redline to last approval</p> | <p>Join Ballot Pool>></p> | <p>03/17/11 - 04/16/11 (closed)</p> | <p>Summary>></p> <p>Full Record>></p> | <p>Consideration of Comments (4)</p> |
| | <p>Initial Ballot and Non-Binding Poll</p> <p>Vote>> Info>></p> | <p>04/21/11 - 05/02/11 (closed)</p> | <p>Non-Binding Poll Results>></p> | |
| | <p>45-day Formal Comment Period</p> <p>Info>></p> <p>Submit comments >></p> | <p>03/17/11 - 05/02/11 (closed)</p> | <p>Comments Received>></p> | |
| <p>Draft 4</p> <p>Proposed SAR and Modifications to Facility Ratings Standards</p> <p>FAC-008-2 Clean Redline to Initial Ballot</p> <p>Draft SAR Version 3 Clean Redline to</p> | <p>Recirculation Ballot</p> <p>Vote>> Info>></p> | <p>03/08/10 - 03/18/10 (closed)</p> | <p>Summary>></p> <p>Full Record>></p> | |

| | | | | |
|---|--|---|---|---|
| <p>Last Posting</p> <p>Supporting Materials: Implementation Plan</p> | | | | |
| | | | | |
| <p>Draft 3 Proposed SAR and Modifications to Facility Ratings Standards</p> <p>FAC-008-2 Clean Redline to Last Posting</p> <p>Draft SAR Version 3 Clean Redline to Last Posting</p> <p>Supporting Materials: Implementation Plan</p> | <p>Initial Ballot</p> <p>Vote>> Info>></p> | <p>1/12/10 - 01/22/10 (closed)</p> | <p>Summary>></p> <p>Full Record>></p> | <p>Consideration of Comments (3)</p> |
| | <p>Pre-ballot Review</p> <p>Join>> Info>></p> | <p>12/07/09 - 01/12/10 (closed)</p> | | |
| | | | | |
| <p>Draft 2 Proposed SAR and Modifications to Facility Ratings Standards</p> <p>Draft SAR Version 2 Clean Redline to Original Posting</p> <p>FAC-008-2 Clean Redline to Last Posting</p> <p>Supporting Materials: Comment Form (Word) Implementation Plan</p> | <p>Comment Period</p> <p>Info>></p> <p>Submit Comments>></p> | <p>08/10/09 - 09/09/09 (closed)</p> | <p>Comments Received>></p> | <p>Consideration of Comments (2)</p> |
| | | | | |

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|--|--|-------------------------------------|--|---|
| <p>Proposed SAR and Modifications to Facility Ratings Standards</p> <p>Draft SAR Version 1</p> <p>FAC-008-2 Clean Redline to Recirculation Ballot</p> <p>Supporting Materials: Comment Form (Word) Implementation Plan</p> | <p>Comment Period</p> <p>Info>></p> <p>Submit Comments>></p> | <p>01/20/09 - 03/05/09 (closed)</p> | <p>Comments Received>></p> | <p>Consideration of Comments (1)</p> |
|--|--|-------------------------------------|--|---|

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Consideration of Comments on the Proposed SAR for Modifications to the Facility Ratings Standards and for the Revisions to FAC-008-2 — Project 2009-06

The Facility Ratings Standard Drafting Team thanks all commenters who submitted comments on the proposed SAR for modifications to the Facility Ratings standards and for the revisions to FAC-008-2. This SAR and draft standard was posted for a 45-day public comment period from January 20, 2009 through March 5, 2009. The stakeholders were asked to provide feedback on the SAR and standard through a special Electronic Comment Form. There were 38 sets of comments, including comments from more than 85 different people from over 50 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

In this document the comments have been sorted to make it easier to see where there is stakeholder consensus. All comments can be viewed in the original format at the following site:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

The vast majority of responding entities agreed with the scope of the SAR and agreed that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1. Several commenters who did agree with the removal of R7 expressed concern with the limited scope of the SAR. The FR SDT explained that proposed changes to FAC-008 and FAC-009 (FAC-008-02) have been through stakeholder review and consensus appeared to have been reached on all requirements except R7, which this SAR proposed to remove. Several entities expressed concerns that R1 was overly broad or that FAC-008-2 should not apply to generating facilities.

The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning.

For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows "performance history or rating verification supplemented by engineering analysis". MOD-024 and MOD 025 validation processes (neither MOD 024 nor MOD 025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters. FAC 008 "only" requires this Methodology be documented and followed. Therefore FAC 008 need not be redundant with MOD 024 and/or MOD 025.

Several other commenters suggested that the standard should not be applicable to Generator Owners for various reasons, including the requirements being vague and burdensome. The SDT feels strongly that the standard applies to generation Owners and has revised the Generator Owner requirements for this draft Standard (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities and options for developing facility rating documentation. The FR SDT made conforming changes to the associated measures and compliance elements.

Two commenters suggested revising the VRF from "Medium" to "Lower". The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to "Lower".

Other commenters questioned the Violation Severity Levels, indicating that they should not be severe. Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post- violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement. Following the initial posting, the FR SDT did make some additional changes to the VSLs to line up with the work of the VSL DT.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. Do you agree that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1? If not, please explain in the comment area.10

2. Do you agree with the scope of the SAR? If not, please explain in the comment area.14

3. Do you agree with the applicability of the SAR? If not, please explain in the comment area.21

4. If you have any other comments on this standard or its implementation plan that you have not already submitted above, please provide them here.39

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------|---------------------|--|------------------|---|---|---|---|---|---|---|---|----|--|--|-------------------|-------------------------|--------|---------|-----------|------------------|--------|------|---|--|-----------------|---------|------|---|--|------------------|-------------|------|---|--|----------------|-----------------------|------|----|--|----------------|-----------------------|------|----|--|--------------|-----------------------|------|---|--|-----------------|-----|------|---|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | Group | Phillip R. Kleckley | SERC Engineering Committee Planning Standards Subcommittee | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment</th> <th>Selection</th> </tr> </thead> <tbody> <tr> <td>1. John Sullivan</td> <td>Ameren</td> <td>SERC</td> <td>1</td> <td></td> </tr> <tr> <td>2. Charles Long</td> <td>Entergy</td> <td>SERC</td> <td>1</td> <td></td> </tr> <tr> <td>3. Scott Goodwin</td> <td>Midwest ISO</td> <td>SERC</td> <td>2</td> <td></td> </tr> <tr> <td>4. Pat Huntley</td> <td>SERC Reliability Corp</td> <td>SERC</td> <td>10</td> <td></td> </tr> <tr> <td>5. Carter Edge</td> <td>SERC Reliability Corp</td> <td>SERC</td> <td>10</td> <td></td> </tr> <tr> <td>6. Bob Jones</td> <td>Southern Co. Services</td> <td>SERC</td> <td>1</td> <td></td> </tr> <tr> <td>7. David Marler</td> <td>TVA</td> <td>SERC</td> <td>1</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | | | | | | | Additional Member | Additional Organization | Region | Segment | Selection | 1. John Sullivan | Ameren | SERC | 1 | | 2. Charles Long | Entergy | SERC | 1 | | 3. Scott Goodwin | Midwest ISO | SERC | 2 | | 4. Pat Huntley | SERC Reliability Corp | SERC | 10 | | 5. Carter Edge | SERC Reliability Corp | SERC | 10 | | 6. Bob Jones | Southern Co. Services | SERC | 1 | | 7. David Marler | TVA | SERC | 1 | |
| Additional Member | Additional Organization | Region | Segment | Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. John Sullivan | Ameren | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Charles Long | Entergy | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Scott Goodwin | Midwest ISO | SERC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Pat Huntley | SERC Reliability Corp | SERC | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Carter Edge | SERC Reliability Corp | SERC | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Bob Jones | Southern Co. Services | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. David Marler | TVA | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Group | Sandra Shaffer | PacifiCorp | X | | X | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Group | Douglas Selin | APS - Technical Projects Engineering | X | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment | Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | |
|---|----------------|--------------------------------------|---|---------------|---|---|---|---|---|---|---|----|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | |
| 1. | Baj Agrawal | Arizona Public Service Co. WECC | 1, 3, 5 | | | | | | | | | | | | |
| 2. | Dave Simonton | Arizona Public Service Co. WECC | 1, 3, 5 | | | | | | | | | | | | |
| 4. | Group | Thomas J. Bradish | Reliant Energy Inc and Gila River Power | | | | | X | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | |
| 1. | Ken Parker | Gila Rivere Power | WECC | 5 | | | | | | | | | | | |
| 5. | Group | Jim Busbin | Southern Company | | | | | X | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | |
| 1. | Tom Sims | Southern Company Services | SERC | 1 | | | | | | | | | | | |
| 2. | Andrew Neal | Southern Nuclear Company | SERC | 5 | | | | | | | | | | | |
| 3. | Marc Butts | Southern Company Services | SERC | 1 | | | | | | | | | | | |
| 4. | Jim Viikinsalo | Southern Company Services | SERC | 1 | | | | | | | | | | | |
| 6. | Group | Jalal Babik | Dominion Resources Inc. | | X | | X | | X | X | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | |
| 1. | Louis Slade | | SERC | 5 | | | | | | | | | | | |
| 2. | Mike Garton | | NPCC | 6 | | | | | | | | | | | |
| 7. | Group | Sam Ciccone | FirstEnergy | | X | | X | X | X | X | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | |
| 1. | Doug Hohlbaugh | FirstEnergy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | | | |
| 2. | Dave Folk | FirstEnergy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | | | |
| 3. | Dick Kovacs | FirstEnergy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | | | |
| 8. | Group | Jeffrey P. Mueller | Public Service Enterprise Group | | X | | X | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | |
| 1. | James Hebson | PSEG Energy Resources and Trade, LLC | ERCOT | 6 | | | | | | | | | | | |
| 4. | Gary Grysko | PSEG Fossil, LLC | RFC | 5 | | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | |
|---|-------------------------|------------------------|--|------------------|---|---|---|---|---|---|---|---|----|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 9. | Group | Jack Cashin | Electric Power Supply Association | | | | | X | X | | | | | |
| 10. | Group | Robert Loy | Allegheny Energy Supply Company, LLC | | | | | X | | | | | | |
| 11. | Group | Denise Koehn | Bonneville Power Administration | X | | X | | X | X | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | |
| | 1. Dean Freel | Substation Engineering | WECC | 1 | | | | | | | | | | |
| 12. | Group | Guy Zito | NPCC RSC | | | | | | | | | | | X |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | |
| | 1. Greg Campoli | NYISO | NPCC | 2 | | | | | | | | | | |
| | 2. Mike Gildea | Constellation | NPCC | 5 | | | | | | | | | | |
| | 3. Ralph Rufrano | NYP&A | NPCC | 1 | | | | | | | | | | |
| | 4. Chris de Graffenried | Con Ed | NPCC | 1 | | | | | | | | | | |
| | 5. Ted Dahill | National Grid | NPCC | 3 | | | | | | | | | | |
| | 6. Mike Garton | Dominion | NPCC | 5 | | | | | | | | | | |
| | 8. Rick White | NU | | 1 | | | | | | | | | | |
| | 9. Guy Zito | NPCC | NPCC | 10 | | | | | | | | | | |
| | 10. Lee Pedowicz | NPCC | NPCC | 10 | | | | | | | | | | |
| | 11. Gerry Dunbar | NPCC | NPCC | 10 | | | | | | | | | | |
| 13. | Group | Michael Brytowski | MRO NERC Standards Review Subcommittee | | | | | | | | | | | X |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | |
| | 1. Carol Gerou | MP | MRO | 1, 3, 5, 6 | | | | | | | | | | |
| | 2. Neal Balu | WPS | MRO | 3, 4, 5, 6 | | | | | | | | | | |
| | 3. Terry Bilke | MISO | MRO | 2 | | | | | | | | | | |
| | 4. Joe DePoorter | MGE | MRO | 3, 4, 5, 6 | | | | | | | | | | |
| | 5. Ken Goldsmith | ALTW | MRO | 4 | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | |
|---|-------------------|------------------|--------------------------------|------------|---|---|---|---|---|---|---|----|--|--|--|--|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 6. | Jim Haigh | WAPA | MRO | 1, 6 | | | | | | | | | | | | | | | | |
| 7. | Terry Harbour | MEC | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 8. | Joseph Knight | GRE | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 9. | Scott Nickels | RPU | MRO | 3, 4, 5, 6 | | | | | | | | | | | | | | | | |
| 10. | Dave Rudolph | BEPC | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 11. | Eric Ruskamp | LES | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 12. | Pam Sorted | XCEL | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 14. | Group | Tim Hinken | Kansas City Power & Light | | X | | X | | X | X | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Michael Gammon | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 2. | Harold Wyble | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 3. | Dennis Greashaber | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 4. | Nick McCarty | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 15. | Individual | Scott Berry | Indiana Municipal Power Agency | | | | | X | | | | | | | | | | | | |
| 16. | Individual | Greg Mason | Dynergy | | | | | | X | | | | | | | | | | | |
| 17. | Individual | Greg Rowland | Duke Energy | | X | | X | | X | X | | | | | | | | | | |
| 18. | Individual | Russell A. Noble | Cowlitz County PUD | | | | X | | | | | | | | | | | | | |
| 19. | Individual | Alan Gale | City of Tallahassee (TAL) | | X | | X | | X | | | | | | | | | | | |
| 20. | Individual | Mark Kuras | PJM | | | X | | | | | | | | | | | | | | |
| 21. | Individual | Jianmei Chai | Consumers Energy Company | | | | X | X | X | | | | | | | | | | | |
| 22. | Individual | David Kiguel | Hydro One Networks Inc. | | X | | X | | | | | | | | | | | | | |
| 23. | Individual | Kris Manchur | Manitoba Hydro | | X | | X | | X | X | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | |
|--------------------------|---------------|-----------------------|--|--------------------------------|---------------|--------------------------|---|---|---|---|---|---|----|--|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 24. | Individual | Steve Myers | ERCOT ISO | | X | | | | | | | | | | |
| 25. | Individual | James H. Sorrels, Jr. | American Electric Power | X | | X | | X | X | | | | | | |
| 26. | Individual | Kirit Shah | Ameren | X | | X | | X | X | | | | | | |
| 27. | Individual | Catherine Koch | Puget Sound Energy | X | | | | | | | | | | | |
| 28. | Individual | Dale Fredrickson | Wisconsin Electric Power Company dba We Energies | | | X | X | X | | | | | | | |
| 29. | Individual | Alice Murdock | Xcel Energy | X | | X | | X | X | | | | | | |
| 30. | Individual | Rick White | Northeast Utilities | X | | | | | | | | | | | |
| 31. | Individual | Richard Kafka | Pepco Holdings, Inc. | X | | X | | X | X | | | | | | |
| 32. | Individual | Michael Sonnelitter | FPL Energy | | | | | X | | | | | | | |
| 33. | Individual | Edward Davis | Entergy Services, Inc | X | | X | | X | X | | | | | | |
| 34. | Individual | Dan Rochester | Independent Electricity System Operator | | X | | | | | | | | | | |
| 35. | Individual | Vlad Stanisic | OPG | | | | | X | X | | | | | | |
| 36. | Individual | Roger Champagne | Hydro-Québec Transenergie (HQT) | X | | | | | | | | | | | |
| 37. | Individual | Jason Shaver | American Transmission Company | X | | | | | | | | | | | |
| 38. | Group | Ben Li | IRC Standards Review Committee | | | | | | | | | | | | |
| Additional Member | | | | Additional Organization | Region | Segment Selection | | | | | | | | | |
| 1. | Anita Lee | AESO | WECC | 2 | | | | | | | | | | | |
| 2. | Patrick Brown | PJM | RFC | 2 | | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | Commenter | Organization | | Industry Segment | | | | | | | | | | | | | | | | |
|-----------------------------|-----------|--------------|---|------------------|---|---|---|---|---|---|---|---|----|--|--|--|--|--|--|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | |
| 3. Lourdes Estrada-Salineró | CAISO | WECC | 2 | | | | | | | | | | | | | | | | | |
| 4. Steve Myers | ERCOT | ERCOT | 2 | | | | | | | | | | | | | | | | | |
| 5. Jim Castle | NYISO | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 6. Matt Goldberg | ISO NE | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 7. Bill Phillips | MISO | RFC | 2 | | | | | | | | | | | | | | | | | |
| 8. Charles Yeung | SPP | SPP | 2 | | | | | | | | | | | | | | | | | |

1. Do you agree that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1? If not, please explain in the comment area.

Summary Consideration: The vast majority of responding entities agreed that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1. One entity expressed a concern that R1 did not address directive 1 or 2. The FR SDT modified the standard so that both directives are more fully addressed. The FR SDT modified the standard so that the new Requirement R2, which is for Generator Owners, does address the intent of directive 1 – to identify the underlying assumptions used to determine equipment ratings. The FR SDT does not believe that there is a significant reliability-related benefit to having the Generator Owner develop both normal and emergency ratings for its generator facilities and will solicit feedback on this issue when it posts the revised standard for comment.

The revised standard does fully address directive 2 for both Generator Owners and Transmission Owners. The two new requirements for Generator Owners, Requirements R1 and R2 both include language linking the Facility Rating Methodology to “industry standards” or to “industry standards developed through an open process.” The SDT believes these modifications support the intent of the associated directive.

The process for determining both normal and emergency ratings needs to be addressed for transmission facilities (Requirement R3, Part 4.2), but not for generating unit facilities as they do not have emergency ratings.

One entity stated that the SAR should have included VRFs and VSLs. The new draft standard contains both VRFs and VSLs.

| Organization | Yes or No | Question 1 Comment |
|--|-----------|--|
| Hydro One Networks Inc. | No | We believe that VRFs and VSLs are an integral part of a Standard and should be developed, commented and balloted with it. The SAR should have included these. |
| <p>Response: The FR SDT thanks you for your comment. The draft standard that was posted for comment contained the VRFs and VSLs that were developed and posted for comment during the original attempt to combine FAC-008 and FAC-009. Since stakeholders have indicated that they want additional modifications to the requirements assigned to the Generator Owner, the SDT is going to solicit comments on associated changes to these compliance elements during the next comment period.</p> | | |
| OPG | No | <p>REQUIREMENT R1 DOES NOT ADDRESS THE DIRECTIVES. Directive 1: (document underlying assumptions and methods used to determine normal and emergency facility ratings) - There is no requirement to document underlying assumptions- There is no mention of normal and emergency ratings Directive 2: (develop facility ratings consistent with industry standards developed through an open, transparent and validated</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 1 Comment |
|---|-----------|---|
| | | <p>process)- Only one sub-requirement refers to industry standards. Even that one does not specifically call for consistency with "industry standards developed through an open, transparent and validated process". R1 calls for methodology that must identify how all 5 sub-requirements were "considered". This is ambiguous to start with since the sub-requirements are essentially mutually exclusive. There seems to be no correlation between R1 and directive (2)</p> |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT modified the standard so that the new Requirement R2, which is for Generator Owners, does address the intent of directive 1 – to identify the underlying assumptions used to determine equipment ratings. The FR SDT does not believe that there is a significant reliability-related benefit to having the Generator Owner develop both normal and emergency ratings for its generator facilities and will solicit feedback on this issue when it posts the revised standard for comment.</p> <p>The revised standard does fully address directive 2 for both Generator Owners and Transmission Owners. The two new requirements for Generator Owners, Requirements R1 and R2 both include language linking the Facility Rating Methodology to "industry standards" or to "industry standards developed through an open process." The SDT believes these modifications support the intent of the associated directive.</p> <p>The process for determining both normal and emergency ratings needs to be addressed for transmission facilities (Requirement R3, Part 4.2), but not for generating unit facilities as they do not have emergency ratings.</p> <p>The Generator Owner requirements for this draft Standard has been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Kansas City Power & Light | Yes | We agree with the Drafting Team regarding the deletion of the previously proposed requirement R7. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| SERC Engineering Committee Planning Standards Subcommittee | Yes | |
| APS - Technical Projects Engineering | Yes | |
| Southern Company | Yes | |
| Dominion Resources Inc. | Yes | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 1 Comment |
|--|-----------|--------------------|
| FirstEnergy | Yes | |
| Electric Power Supply Association | Yes | |
| Allegheny Energy Supply Company, LLC | Yes | |
| Bonneville Power Administration | Yes | |
| NPCC RSC | Yes | |
| MRO NERC Standards Review Subcommittee | Yes | |
| Dynegy | Yes | |
| Duke Energy | Yes | |
| Cowlitz County PUD | Yes | |
| City of Tallahassee (TAL) | Yes | |
| PJM | Yes | |
| Manitoba Hydro | Yes | |
| ERCOT ISO | Yes | |
| American Electric Power | Yes | |
| Ameren | Yes | |
| Puget Sound Energy | Yes | |
| Wisconsin Electric Power Company dba We Energies | Yes | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 1 Comment |
|---|------------------|---------------------------|
| Northeast Utilities | Yes | |
| Pepco Holdings, Inc. | Yes | |
| Entergy Services, Inc | Yes | |
| Independent Electricity System Operator | Yes | |
| Hydro-Québec Transenergie (HQT) | Yes | |
| American Transmission Company | Yes | |
| IRC Standards Review Committee | Yes | |

2. Do you agree with the scope of the SAR? If not, please explain in the comment area.

Summary Consideration: The vast majority of responding entities agreed with the scope of the SAR. Several entities did agree with the removal of R7, but expressed concern with the limited scope of the SAR. The FR SDT explained that proposed changes to FAC-008 and FAC-009 (FAC-008-02) have been through stakeholder review and consensus was reached on all requirements except R7, which this SAR proposes to remove. Additionally, several entities expressed concerns that R1 was overly broad or that FAC-008-2 is applicable to generating facilities at all. The FRS DT modified R1 (now R1 and R2) to provide greater clarity to the Generator Owner responsibility. In response to these comments, the SDT modified the scope of the SAR to include modifications to the requirements assigned to the Generator Owner and will post a set of revised Generator Owner requirements for additional stakeholder comment.

| Organization | Yes or No | Question 2 Comment |
|--------------------------------------|-----------|---|
| APS - Technical Projects Engineering | No | <p>1.) The scope of Requirement R1 is overly broad and vague. A statement similar to R2.4.1 that narrows the scope down to specific pieces of equipment is needed for the generator data. Requirement R1 Specifies that the generator owner shall document the methodology determining the Facility Ratings of its generating unit facilities. However, it does not cite what specific generating unit facilities it is talking about (the generator? The exciter? The governor? The various fans, pumps, motors and auxiliaries that are all part of generating unit facilities?) Also, it is unclear exactly what ratings are being addressed (voltage, current, MW, MVAR, temperature, vibration)? There are so many breakers, transformers, motors, switches, etc in a generating facility that it would be impossible to document every single rating and how that rating was developed unless the scope of the ratings referred to in R1 is very focused.</p> <p>2.) R1.1 indicates that the facility rating methodology should specify how it uses commissioning data in its methodology. Again, this is too vague unless specific identification of what equipment and what commissioning data is being addressed is included. There are so many systems that get commissioned in the generating plant that a vague requirement is impossible to comply with.</p> <p>3.)It is not clear in the wording of FAC-008-2 exactly what type of rating is to be documented. Different entities use different ratings and those ratings don't necessarily agree because they are used for different purposes. Comments from our generation management discuss a generator rating reported on FERC Form 1 which is not necessarily the generator owner's nameplate rating on the generator. Unless the exact type of rating for the generator is defined by the Standard (FAC-008-2), the generator owners are left to choose what ever type of rating to use and the results are not consistent. One rating might be used to ensure that you never exceed equipment capability, while</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 2 Comment |
|--|-----------|---|
| | | <p>another rating might be used by someone else to define what the generator is normally capable of producing and those two ratings may be very different.</p> <p>4.) Rule R1.2 includes performance history in the rating methodology but it can be shown that full load tests in the winter and/or summer corrected to standard conditions will give different results and will be different from the FERC Form 1 reported rating for the generator. This goes back to point #3 above that the generator portion is too vague.</p> <p>5.) Inclusion of rules R1.3, R1.4, and R1.5 can also lead to different ratings depending on what the specific rating that is being desired. Is the intended rating actual demonstrated generator capability, theoretical generator capability, a rating that shouldn't be exceeded, exactly what?</p> |
| <p>Response: The FR SDT thanks you for your comment. The NERC Glossary defines Facility Rating as follows: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." The Generator Owner is expected to establish the generator facility ratings consistent with this definition. The primary goal is to establish a methodology that identifies any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). Obvious examples are generator bus conductors, breakers, and step-up transformers that limit a generating unit's thermal output (MVA or MW+jMVAR) to a value less than the prime mover's MW rating and/or the electrical generator's MVA rating which can be identified by either historical performance tracking or documentation review. It is expected that during the process of developing their Facility Ratings methodologies, Generator Owners will work with their respective Transmission Owners and others as necessary to define and establish the specific types of ratings that need to be addressed. However, The Generation Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generation Owner responsibilities.</p> | | |
| Public Service Enterprise Group | No | The SAR should specify deleting generators from this standard. Please see comments to Question 3, below. |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 3.</p> | | |
| Electric Power Supply Association | No | We have questions regarding the applicability of the standard for generators. Please see response to question 3. |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 3.</p> | | |
| NPCC RSC | No | NPCC understands that this comment period is aimed specifically at the removal of requirement R7 from the failed ballot and we agree with this modification; however we have additional comments regarding the scope of this standard which are included as comments in response to Question 4. |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 4. There were several commenters, however, who indicated that the Generator Owner requirements need further clarity – in response to these comments, the SDT modified the scope of the SAR to include these modifications and will post a set of revised Generator Owner requirements for additional stakeholder comment.</p> | | |
| Dynergy | No | <p>The SDT received several negative comments from Generator Owners related to the provisions of R1.2 and R1.3. Regardless of whether the "radial facilities" that connect the generator to the grid are considered part of the generating facility or "transmission facilities", unit testing verifies that the rating of these "radial facilities" is greater than or equal to the tested capability of the unit and verifies that the tested rating of the generator is the most limiting element of these "radial facilities". The SAR should consider this issue.</p> |
| <p>Response: The FR SDT thanks you for your comment. The standard does not attempt to define a common point of interconnection between "generation facilities" and "transmission facilities". Generator owned transmission facilities are included in R2. Regarding your comments on unit testing, R1.2 and R1.3 (of the previous draft) addressed the need to establish generator Facility Ratings prior to a generator being placed in service ("Facility Ratings" for a generator are required for BES planning). For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. Also, unit testing alone may not verify the actual Generating Facility's overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) unless it is "supplemented by engineering analysis" as specified in R1. This engineering analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters and may identify the real limit (ex: generator voltage limit) that may not occur during a test, due to other system conditions or constraints. However, The Generator Owner requirements for this draft Standard have been revised (now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| PJM | No | <p>A full reconsideration of all aspects of the standard should be encouraged. We agree with the reproposal of the Standard with R7 removed because R7 has no reliability benefit.</p> |
| <p>Response: The FR SDT thanks you for your comments. 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. There were several commenters, however, who indicated that the Generator Owner requirements need further clarity – in response to these comments, the SDT modified the scope of the SAR to include these modifications and will post a set of revised Generator Owner requirements for additional stakeholder comment.</p> | | |
| Hydro One Networks | No | <p>Please see response to question 1.</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 2 Comment |
|---|-----------|---|
| Inc. | | |
| <p>Response: The FR SDT thanks you for your comment. Please see response to question 1.</p> | | |
| American Electric Power | No | <p>The limited scope of the SAR does not take advantage of the opportunity for continuous improvement. There are areas in the standard where additional clarity is necessary and the standard could also be more explicit as to applicability of requirements.</p> |
| <p>Response: The FR SDT thanks you for your comment. 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. There were several commenters, however, who indicated that the Generator Owner requirements need further clarity – in response to these comments, the SDT modified the scope of the SAR to include these modifications and will post a set of revised Generator Owner requirements for additional stakeholder comment.</p> | | |
| Xcel Energy | No | <p>Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners). See details in our response to question 3.</p> |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 3.</p> | | |
| OPG | No | <p>The proposed SAR and the standard eliminate only one of the contentious requirements identified during previous stakeholders? Reviews and do not take into account a number of other issues. One of the most contested, second only to R7, has been applicability of FAC008-02 to GOs. Further comments on this are provided in the question on applicability. Other issues include: - The requirements R1, R2 are burdened with a comprehensive set of sub-requirements that tend to be confusing, mutually exclusive or superfluous. The distinction between facility and equipment ratings is blurred. It is not clear whether it is necessary to document methodologies for each major element of a generating facility (boiler, turbine, generator, auxiliaries). There is also ambiguity about the scope; R1 talks about generating unit Facilities, R2 about other solely and jointly owned Facilities? Main output transformers and other HV connection equipment of a generating station may be subject to R1 or R2, depending on the equipment location, etc. - The requirements R3, R4 relate to peer review of Facility Ratings Methodologies (not the actual facility ratings?). The need for these requirements has been questioned by the RCs, PCs, TOPs, and TPs (represented through ISO/RTO Council). These entities, although given the right to review GOs and TOs facility ratings methodology, recognize futility of such an exercise. During previous comment periods, the Council acknowledged</p> |

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| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| | | that facility ratings methodology and the ratings were up to GOs and TOs discretion and cannot be challenged by other entities. They pointed out that any disagreements with respect to the ratings should be addressed outside the NERCs reliability standards process. |
| <p>Response: The FR SDT thanks you for your comment. Please see the FR SDT responses to Question 3 comments on applicability to Generator Owners.</p> <p>The subrequirements in R1 (previous draft) were applicable to generating unit facilities and were intended to address equipment up to and including the generator step-up (GSU) transformer. The subrequirements in R2 (previous draft) were applicable to transmission facilities and were intended to address equipment from the generator step-up (GSU) transformer to the transmission system and beyond. The GSU transformer could be addressed within R1 or R2 based upon who owns the equipment. Radial transmission facilities from the GSU transformer to the transmission system can be owned by the GO, the TO or both. The R2 subrequirements (previous draft) were applicable in this case, because this is transmission equipment.</p> <p>Please refer to the NERC Glossary for the definitions and distinctions between Facility Ratings and Equipment Ratings. The use of these terms in this standard is consistent with these definitions.</p> <p>R3 and R4 (R4 and R5 in the current draft) provide a means for other entities to question or challenge one's Facility Ratings Methodology. However, the Facility owner has the responsibility and obligation to determine the actual ratings and margins to ensure its facilities and equipment are not damaged. Since this can involve legal and liability issues, disagreements about the ratings themselves may have to be resolved outside the NERCs reliability standards process as you stated.</p> <p>However, The Generator Owner requirements for this draft Standard have been revised (now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| FirstEnergy | Yes | |
| SERC Engineering Committee Planning Standards Subcommittee | Yes | |
| PacifiCorp | Yes | |
| Southern Company | Yes | |
| Dominion Resources Inc. | Yes | |

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| Organization | Yes or No | Question 2 Comment |
|--|-----------|--------------------|
| Allegheny Energy Supply Company, LLC | Yes | |
| Bonneville Power Administration | Yes | |
| MRO NERC Standards Review Subcommittee | Yes | |
| Kansas City Power & Light | Yes | |
| Duke Energy | Yes | |
| Cowlitz County PUD | Yes | |
| City of Tallahassee (TAL) | Yes | |
| Manitoba Hydro | Yes | |
| ERCOT ISO | Yes | |
| Ameren | Yes | |
| Puget Sound Energy | Yes | |
| Wisconsin Electric Power Company dba We Energies | Yes | |
| Northeast Utilities | Yes | |
| Pepeco Holdings, Inc. | Yes | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 2 Comment |
|---|-----------|--------------------|
| Entergy Services, Inc | Yes | |
| Independent Electricity System Operator | Yes | |
| Hydro-Québec Transenergie (HQT) | Yes | |
| American Transmission Company | Yes | |
| IRC Standards Review Committee | Yes | |

3. Do you agree with the applicability of the SAR? If not, please explain in the comment area.

Summary Consideration: The majority of the comments support the application of the SAR. Out of the 37 responses received (from 94 individual commenters), 27 responses (from 79 commenters) support the SAR, and 10 responses (from 15 commenters) oppose with the SAR.

All the responses that oppose the SAR suggested removing the applicability of FAC-008 to Generator Owners. The reasons cited are:

- The SAR is redundant with FAC-001, FAC-001, FAC-002, IRO-004, MOD-010, MOD-011, MOD-024, MOD-025 and/or TOP-002.
- FAC-008-2 should not apply to Generator owners
- The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value.
- Actual operating performance today has no correlation with the commissioning data for a unit that has been in service for a long time.
- Ratings provided by equipment manufacturers are not appropriate for use in the operation of the bulk electric system.
- It is inappropriate to Transfer a rating methodology used for predominately static networked components of a transmission system and apply the same basic methodology to generating facilities.
- In most cases, the rating from FAC-008-2 may be different from the ones from MOD-024 and MOD-025. Having two rating numbers can lead to confusion and would be detrimental to grid reliability.

The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning.

For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows "performance history or rating verification supplemented by engineering analysis". MOD-024 and MOD 025 validation processes (note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters. FAC 008 "only"

requires this Methodology be documented and followed. Therefore the FR SDT does not feel that FAC 008 is redundant with MOD-024 and/or MOD-025.

Several commenters also expressed concerns that FAC-008 is duplicative with FAC-001, FAC-002, IRO-004, MOD-010, MOD-011 or TOP-002 as the commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. IRO-004-1 requires conducting next-day reliability and requires Generator Owners, among others, to provide information (such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for the analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.

Likewise, FAC-008 is not redundant with FAC-001, FAC-002, IRO-004, MOD-010, MOD-011 or TOP-002 as one commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. IRO-004-1 requires conducting next-day reliability analyses and requires Generator Owners, among others, to provide information (such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.

The SDT agrees that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating facility. However, the SDT believes that a Facility Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Facility Ratings Methodology).

The proposed FAC-008-2 offers a variety of ways to comply. For example, R1 allows the use of:

Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice having a successful implementation record.

Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.

The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, the SDT disagrees with the commenters that this situation creates “having two numbers can lead to confusion....” An appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of Transmission Facilities typically include: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, and the SDT is NOT aware of any occurrences where having two ratings numbers for Transmission Facilities resulted in confusion or became detrimental to reliability.

| Organization | Yes or No | Question 3 Comment |
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| PacifiCorp | No | <p>NERC Standards MOD-024 and MOD-025 require verification of the real and reactive output capabilities of generating units. This verification is a determination of the Facility Rating. FAC-008-2 R1 requires the Generator Owner to have a methodology to determine the Facility Rating of its generating units and R5 require the Generator Owner to perform the determination. Xcel Energy considers this a duplication of the requirements contained in MOD-024 and MOD-025.</p> <p>Another concern is the acceptability of the use of manufacturers’ Ratings and calculations in determining a Facility Rating. This would lead to a Rating that would, in most cases, be different than the Rating determined by MOD-024 and MOD-025 verification testing. Having two rating numbers can lead to confusion and would be detrimental to grid reliability. To point, one of the root causes of the widespread 1996 blackout in the WECC region was the use of manufacturers - ratings for generator reactive power to determine stability limits. This led to the development of NERC standards that have evolved into the current MOD-025. The FAC Standards Drafting Team previously justified the inclusion of Generator Owners as follows: Capability verification testing under a specific set of conditions is not the same as a Facility Rating - realizing that a generator’s capability is a family of data.</p> <p>The approved definition for Facility Rating is: ?The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility.? At best, a single verification by itself following what is required in MOD-024-1 and MOD-025-1 would be a subset of what is required in complying with FAC-008-2. FAC-008-2 covers associated transmission facilities owned by (or considered part of) the generator, as well as the peer review concepts and the requirement to provide the ratings to interested parties. Xcel Energy disagrees with this viewpoint.</p> |

| Organization | Yes or No | Question 3 Comment |
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| | | <p>The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value. Even the rating of planned facilities is normally based on the expected limits from the equipment behind the generator. In summary, Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners).</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, the SDT disagrees with the commenter that this situation creates “having two numbers can lead to confusion....” An appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of transmission Facilities typically include: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, and the SDT is NOT aware of any occurrences where having two ratings for Transmission Facilities resulted in confusion or became detrimental to reliability.</p> <p>The SDT does not disagree with the commenter’s assertion that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating facility. However, the SDT believes that a Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Ratings Methodology).</p> | | |

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| Organization | Yes or No | Question 3 Comment |
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| <p>Also, the SDT recognizes that the limitation on a Generating Facility's overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) can be due to factors other than the electrical generator thermal ratings. Examples are auxiliary bus voltages, exciter limiter settings, and GSU transformer MVA ratings. While these types of limitations would be addressed in the MOD-025 validation processes, equipment design ratings (ex: voltage, ampere, and MVA) can be useful in identifying obvious limitations prior to performance of the validations under MOD-025. For example, replacement of a GSU transformer with a spare GSU transformer of a smaller MVA rating can and should be reviewed to prior to installation to determine if the thermal capability of the Generating Facility could be limited by the smaller GSU. If so, the Generator should coordinate with the Transmission Planner and Reliability Coordinator to assess the impacts of limitations on real and reactive power capabilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| <p>APS - Technical Projects Engineering</p> | <p>No</p> | <p>1) With regard to R1.1? The value of using commissioning data for older units is not understood. Actual operating performance today has no correlation with the commissioning data for a unit that is 20? 50 years old. Commissioning data is primarily used to prove OEM guarantee of rated output at certain contract conditions and test results do not necessarily correspond to the generator owner's rating.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent was to provide use of commissioning data for situations where, for a new facility, the commissioning data may be the best source of data for use in developing a rating. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generation Owner responsibilities.</p> | | |
| <p>Reliant Energy Inc and Gila River Power</p> | <p>No</p> | <p>We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, ?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.? The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from "ratings provided by equipment manufacturers" is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility.</p> |

| Organization | Yes or No | Question 3 Comment |
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| | | <p>However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004.</p> <p>A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is re-mediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards.</p> <p>FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient temperature and humidity. This data is certainly available but it is a sheet or two from a vendor manual and not a facility rating methodology. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment but the requirements are misapplied and a threat to reliability when imposed and used to calculate a generator rating. That the Standard was intended for transmission equipment rather than generators is in part illustrated by Requirement 2.4.2 The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings. Generating stations may have the ability to increase their output for a limited period of time but the Generators themselves do not have emergency ratings that should be used for modeling purposes by system planners. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. As radial components, no one is seriously questioning the ability of the elements of the generating stations to deliver power to the BES. However, generating owners are expending significant time, effort, and resources to acquire and develop documentation to meet the requirements of Facility Ratings for stations that have multiple decades of successful operation. Try to think of one disturbance or blackout that was traced to the facility rating documentation of a generating facility as the culprit. Yet the standard applies the same violation risk factors and penalties to the radial components of a small generating facility as it does to the networked components of the transmission grid. To date, the FAC-008-1 Standard is one in which</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 3 Comment |
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| | | <p>generator owners are most vulnerable for non-compliance, in spite of the considerable efforts of the generator-owning industry to make sense of a set of requirements which make little sense, and which no operating entity is actually requesting of them. The individuals showing the most interest in Facility Rating documentation are the auditors or the RROs. The reason the standard it is so often violated is not because the industry is inattentive, but it is for documentation errors of successfully operating generating facilities that in reality are imposing no threat to the reliability of the Bulk Electric System.</p> <p>Not only are the standard requirements flawed in their application to generator owners, but the documentation burden of proof, as it is being imposed, is unwarranted. Generator Owner applicability should be stripped from FAC-008-2 and any further reliability needs pursuant to generator performance and capability should be referred to the Generator Verification Project 2007-09. (Note on another point: Does anyone comprehend where the dividing line between R1 and R2 start and stop for generator owners and do the requirements of R.2 cover all of the same elements covered by R.1. This is very confusing and ambiguous.)</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with IRO-004, MOD-010, or TOP-002, Requirement 3 as the commenter asserts. IRO-004-1 requires conducting next-day reliability analyses and requires Generator Owners, among others, to provide information (such as critical Facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for the analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. TOP-002, Requirement 3 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider. None of these Standards cited requires that the Methodology for determining Facility Ratings be documented and followed.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’</p> | | |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, an appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of transmission Facilities typically includes: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, therefore the SDT disagree with the commenter’s assertion that Transmission Facility Ratings are static. In addition, proposed FAC-008-2 does not require “transferring” the rating methodology between Transmission Facilities and generation Facilities as claimed by the commenter.</p> <p>The SDT does not disagree with the commenter’s assertion that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating Facility. However, the SDT believes that a Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Ratings Methodology).</p> <p>Also, the SDT recognizes that the limitation on a Generating Facility’s overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) can be due to factors other than the electrical generator thermal ratings. Examples are auxiliary bus voltages, exciter limiter settings, and GSU transformer MVA ratings. While these types of limitations would be addressed in the MOD-025 validation processes, equipment design ratings (ex: voltage, ampere, and MVA) can be useful in identifying obvious limitations prior to performance of the validations under MOD-025. For example, replacement of a GSU transformer with a spare GSU transformer of a smaller MVA rating can and should be reviewed prior to installation to determine if the thermal capability of the Generating Facility could be limited by the smaller GSU. If so, the Generator should coordinate with the Transmission Planner and Reliability Coordinator to assess the impacts of limitations on real and reactive power capabilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| Public Service Enterprise Group | No | <p>The SAR (and Standard) should not apply to Generator Owners. Facility rating methodologies and listings of limiting components do not make sense for generators from an ensuring reliability standpoint. The capability of a generator determined through testing and/or generation data derived from actual operation is what accurately determines a generator’s rating, and what both markets and system operators depend upon. The Public Service Enterprise Group companies wish to call NERC’s attention to the many cogent and compelling points contained in the comments filed by the Electric Power Supply Association (EPSA) in this matter. EPSA correctly points out that generators should not be subject to FAC-008-2 as it is presently drafted and proposed for change in the SAR. For example, EPSA states that a generator rating derived from manufacturer’s equipment rating is not appropriate for use in the operation of the bulk electric system, and indeed presents a risk to the reliability of the BES as the correct rating of a generator can only be obtained by testing and/or actual operating experience. Even for planning purposes, FAC-008-2 is technically sound only for networked connection of static components of transmission equipment, and not for generators. Finally EPSA’s conclusion that use of a calculated facility rating for a generator, where real facility</p> |

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| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| | | <p>capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes is absolutely spot on.</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator and transmission equipment. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, an appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of transmission Facilities typically includes: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature).</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Electric Power Supply Association | No | <p>EPSA feels that the reliability objectives of Draft Standard FAC-008-2 are achieved even if Generators Owners or operators are not required to comply with the standard. The purpose of the standard is: 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. System operators through the Energy Management System (EMS) have the needed information for operational purposes to operate the system in a reliable manner. Moreover, for operational purposes numerous other standards require that Generators provide updated capabilities for their units which would reflect ambient temperatures, upgrades or temporary degradations of any elements of the generator circuit, etc. Consequently, system operators and owners have an abundance of information at the ready to maintain reliability. The questions that need to be answered to determine if the applicability and</p> |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>purpose of the standard is being met are: 1. Are the values contemplated by the Standard's Facilities Rating Methodology needed above and beyond the current EMS system information to materially preserve reliability in the operating time frame; and, 2. Does the documentation of a Facilities Rating Methodology ensure reliability through the planning process and is the process under FAC-008 superior to that contained within existing standards MOD-024-1 and MOD-025-1? If it can be shown that reliability is bolstered in a material way making the answers of the two questions above an unequivocal, yes, and FAC-008-2 is necessary for Generator Owners to comply with, then EPSA suggests an alternative approach for moving forward with this standard. Previously EPSA members have experienced problems when standards have been developed for Transmission Owners or Operators but end up including Generator Owners or Operators. This was recognized at the recent NERC Board of Trustees meeting when the formation of a Task Force was approved to resolve generator and transmission facility interface issues. The formation of the Task Force demonstrates a need to better understand the physical, informational and ownership distinctions that exist at the generation and transmission interface. A standard FAC-008-1 is already identified as a standard that the task force will need to look at. In this Facilities Rating Standard R1.2 is particularly illustrative by calling for, among other things, an identification of the methodology by which an emergency rating for a generator is developed. Particularly for planning purposes (which is part of the purpose of this standard) such a rating would not exist. EPSA asserts that the most appropriate means to go forward with the Facility Ratings is to create separate standards for Generator Owner/Operators and Transmission Owner/Operators. In that way, the language of each standard can be appropriately targeted to deal with the facilities in question. We expect that the Generation and Transmission Interface Task Force can consider this issue and that the Facilities Ratings project should await the recommendations of the task force. If it is not possible for this project team to await the outcome of the Task Force, we would propose that the following should be considered as an alternative. In developing FAC-008-2, the Standard Drafting Team has gone some way to addressing the concerns raised above. In Requirement 1 (R1) which is applicable to generators only, the draft standard calls for Generator Owners to have a Facilities Rating Methodology for its generating unit that meets certain criteria. For R2, both Generator Owners and Transmission Owners are required to have a Facilities Rating Methodology. Under that requirement, R2.4 includes the previously mentioned emergency rating, but then excludes the generator. What is still lacking in the case of a Generator Owner however is an appropriate clarification of the boundary between facilities included in R1 and those remaining to be covered by R2? In our opinion it is not just the generator itself that needs to develop its Facilities Rating Methodology differently, but all of the equipment on the generator side of the switchyard. We would agree that the equipment contained within the switchyard is analogous to equipment that might elsewhere be owned by Transmission Owners and can be treated, for the purposes of this standard, in a manner analogous to the treatment afforded Transmission Owners. Finally, if NERC does continue to include an obligation on generators in FAC-008-2, MOD-024-1 and MOD-025-1 should be reviewed to ensure that overlaps are eliminated.</p> |

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| Organization | Yes or No | Question 3 Comment |
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| <p>Response: The FR SDT thanks you for your comment. The existing Standard FAC-008-1, R1 applies to both Generator Owners and Transmission Owners. This SAR proposes to clarify the existing standard by separating the “generation facilities” and “transmission facilities”. The standard does not attempt to define a common point of interconnection between “generation facilities” and “transmission facilities”. Generator owned transmission facilities not included in the “generation facilities” in R1 will be captured under R2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. R1.2 (previous draft) allows for the use of “Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating”.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>There is a current NERC Standards development project (Project 2007-09) that includes revisions to MOD-024 and MOD-025. That team will work to eliminate any redundancies between standards.</p> | | |
| <p>Indiana Municipal Power Agency</p> | <p>No</p> | <p>This standard is an exercise in paperwork for Generator Owners and does not increase the reliability of the bulk power system. The standard seems to be intended more for transmission equipment rather than generators, which is evident when asking for Normal and Emergency Ratings of equipment (R2.4.2). Generators do not have emergency ratings that should be used for modeling purposes. The generator capability and verification of capability is covered by other standards (MOD-010, IRO-004, MOD-024, and MOD-025). Any generator temporary limitations will be taken into account for operational purposes by using TOP-002-2; requirement 3. There is no advantage to using a calculated facility rating for planning purposes when a real facility rating is available and certainly mandated by other standards. The main focus of a standard should be to increase the reliability of the bulk power system. The application of this standard to Generator Owners does not increase the reliability of the bulk power system. Therefore, we believe this standard should not apply to Generator Owners.</p> |
| <p>Response: The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft)</p> | | |

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| Organization | Yes or No | Question 3 Comment |
|--|-----------|---|
| <p>allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC 008 “only” requires this Methodology be documented and followed. Therefore, the SDT does not believe that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with IRO-004, MOD-010 or TOP-002, Requirement 3 as the commenter asserts. IRO-004-1 requires conducting next-day reliability and requires Generator Owners, among others, to provide information (such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for the analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. TOP-002, Requirement 3 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Wisconsin Electric Power Company dba We Energies | No | There are no explicit requirements given to allow the Generator Owner to determine which generating facilities are subject to the proposed standard. Does it apply to generators above 20 MVA single and 75 MVA aggregate connected to the BES? |
| <p>Response: The FR SDT thanks you for your comment. The standard applies to registered Generator Owners. Regional Reliability Organization BES definitions may include additional details regarding generator size.</p> | | |
| Xcel Energy | No | <p>NERC Standards MOD-024 and MOD-025 require verification of the real and reactive output capabilities of generating units.* This verification is a determination of the Facility Rating.FAC-008-2 R1 requires the Generator Owner to have a methodology to determine the Facility Rating of its generating units and R5 requires the Generator Owner to perform the determination. Xcel Energy considers this a duplication of the requirements contained in MOD-024 and MOD-025.</p> <p>Another concern is the acceptability of the use of manufacturers? Ratings and calculations in determining a Facility Rating. This would lead to a Rating that would, in most cases, be different than the Rating determined by MOD-024 and MOD-025 verification testing. Having two rating numbers can lead to confusion and would be detrimental to grid reliability. To point, one of the root causes of the widespread 1996 blackout in the WECC region was the use of manufacturers? ratings for generator reactive power to determine stability limits. This led to the development of NERC standards that have evolved into the current MOD-025.The FAC Standards Drafting Team previously justified the inclusion of Generator Owners as follows: Capability verification testing under a specific set of conditions is not the same as a Facility Rating - realizing that a generator’s capability is a family of data. The approved definition for Facility Rating is: ?The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the</p> |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>applicable equipment rating of any equipment comprising the facility.? At best, a single verification by itself following what is required in MOD-024-1 and MOD-025-1 would be a subset of what is required in complying with FAC-008-2.</p> <p>FAC-008-2 covers associated transmission facilities owned by (or considered part of) the generator, as well as the peer review concepts and the requirement to provide the ratings to interested parties. Xcel Energy disagrees with this viewpoint. The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value. Even the rating of planned facilities is normally based on the expected limits from the equipment behind the generator.</p> <p>In summary, Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners). *Additionally, we recognize that FERC has not approved MOD-024-1 or MOD-025-1. However, we feel strongly that developing duplicative requirements is not the correct solution. Therefore, we would recommend that either MOD-024-1 & MOD-025-1 be repealed, or FAC-008-2 needs to make accommodations for their existence.</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC 008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, an appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of</p> | | |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>transmission Facilities typically includes: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, therefore the SDT disagree with the commenter’s assertion that transmission facility ratings are static. In addition, proposed FAC-008-2 does not require “transferring” the rating methodology between transmission facilities and generation facilities as claimed by the commenter.</p> <p>The SDT does not disagree with the commenter’s assertion that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating facility. However, the SDT believes that a Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Ratings Methodology).</p> <p>Also, the SDT recognizes that the limitation on a Generating Facility’s overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) can be due to factors other than the electrical generator thermal ratings. Examples are auxiliary bus voltages, exciter limiter settings, and GSU transformer MVA ratings. While these types of limitations would be addressed in the MOD-025 validation processes, equipment design ratings (ex: voltage, ampere, and MVA) can be useful in identifying obvious limitations prior to performance of the validations under MOD-025. For example, replacement of a GSU transformer with a spare GSU transformer of a smaller MVA rating can and should be reviewed to prior to installation to determine if the thermal capability of the Generating Facility could be limited by the smaller GSU. If so, the Generator should coordinate with the Transmission Planner and Reliability Coordinator to assess the impacts of limitations on real and reactive power capabilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| FPL Energy | No | <p>It is the opinion of FPL Energy (a.k.a. NextEra Energy Resources) that the proposed standard should not be applicable to the Generator Owner (GO). We base this opinion on the fact that there are other standards currently in place (i.e. MOD-010/011, MOD-024/025, etc?) that require the same, and in some cases more detailed information, regarding Facility Ratings and Capabilities as is being proposed in FAC-008-2. This duplication of information seems to be an unnecessary burden placed on the Generator Owners. In addition, FERC Order 693 in the discussion on FAC-008-02 identifies that the standard creates ambiguity in terms of acceptable forms of compliance for Generators. Therefore, we respectfully request that the SAR team remove the Generator Owner applicability requirements from FAC-008-2 at this time.</p> |
| <p>Response: The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented</p> | | |

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| Organization | Yes or No | Question 3 Comment |
|--------------|-----------|---|
| | | <p>by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with MOD-010 or MOD-011 as the commenter asserts. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. Neither one of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>FERC Order 693, Paragraph 765, states that “an actual test could be used as a substitute for a mathematical calculation of capability, and we ask the ERO to consider these comments in its Reliability Standards development process”. As stated above, MOD-024 and MOD-025 validation processes could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. In addition, in Paragraph 739, FERC “directs the ERO to submit a modification to FAC-008-1 that requires transmission and generation facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings”. This also supports the applicability of FAC-008-2 to both Generation and Transmission Facilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| OPG | No | <p>THERE IS NO RELIABILITY NEED FOR FAC 008-02 TO BE APPLICABLE TO GENERATOR OWNERS: * VARIOUS STANDARDS ALREADY ADDRESS CRITICAL ASPECTS OF GENERATION FACILITY RATINGS AND ARE SUFFICIENT FOR RELIABLE PLANNING AND OPERATION OF THE BESFAC 001? Facility Connection Requirements FAC 002? Coordination of Plans for New Facilities MOD 011? Steady-state Data Requirements and Reporting Procedures MOD 024? Verification of Generator Gross and Net Real Power Capability MOD 025 - Verification of Generator Gross and Net Reactive Power Capability TOP 002? Normal Operations Planning These standards address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short-term deratings, verification of generator capabilities. FAC 008-02 should not duplicate the above mentioned or any other applicable standards. Multiple standards should not exist in parallel to accomplish what would ultimately be the same end result. * ENSURING THE QUALITY OF FACILITY RATINGS INFORMATION THROUGH VERIFICATION IS SUPERIOR TO DOCUMENTING THE FACILITY RATING METHODOLOGY AS REQUIRED BY FAC 008-02The verification of the key generator ratings (MW, MX) as required by Standards MOD-024 & MOD-025 is by far more efficient and relevant to BES reliability than documenting the generating facility ratings methodology. As several entities noted during previous comment periods, documenting the methodology as per FAC-008-02, would be just an administrative nuisance with little substance. Worth noting is that FERC order 693 (March 2007) acknowledges the relevance of MOD-024, 025 and directs the ERO (i.e. FR SDT) to consider them during the standard’s development process.* FAC 008-02 WOULD NOT ADD VALUE TO THE CURRENT PRACTICES FOR DETERMINING GENERATOR FACILITY RATINGS Requiring generator owners to comply with the</p> |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>proposed FAC-008-02 will just expose the generators and auditors to additional compliance burden without any reliability benefit. The design of generating facilities and determination of Facility Ratings is a complex, yet mature, process involving coordinated effort of GOs, Equipment suppliers (vendors), Engineering and Consulting firms. It is in GOs ultimate interest to design their facilities such that applicable equipment warranties and life expectancy are not jeopardized. At the same time, the GOs have intrinsic goal to optimize utilization of their facilities within the given regulatory framework. All this influences the determination of Generating Facility Ratings. In practical terms, there is no point requesting the GOs to document these established processes and engineering practices, including the details, as required by FAC-008-02.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD 025 validation processes (please note that neither MOD 024 nor MOD 025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC 008 “only” requires this Methodology be documented and followed. Therefore the FR SDT does not feel that FAC 008 is redundant with MOD 024 and/or MOD 025.</p> <p>Likewise, FAC-008 is not redundant with MOD-010 or MOD-011 as the commenter asserts. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. Neither one of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>FERC Order 693, Paragraph 765, states that “an actual test could be used as a substitute for a mathematical calculation of capability, and we ask the ERO to consider these comments in its Reliability Standards development process”. As stated above, MOD-024 and MOD 025 validation processes could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. In addition, in Paragraph 739, FERC “directs the ERO to submit a modification to FAC-008-1 that requires transmission and generation facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings”. This also supports the applicability of FAC-008-2 to both Generation and Transmission Facilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| SERC Engineering Committee Planning Standards | Yes | |

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| Organization | Yes or No | Question 3 Comment |
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| Subcommittee | | |
| Southern Company | Yes | |
| Dominion Resources Inc. | Yes | |
| FirstEnergy | Yes | |
| Allegheny Energy Supply Company, LLC | Yes | |
| Bonneville Power Administration | Yes | |
| NPCC RSC | Yes | |
| MRO NERC Standards Review Subcommittee | Yes | |
| Kansas City Power & Light | Yes | |
| Dynergy | Yes | |
| Duke Energy | Yes | |
| Cowlitz County PUD | Yes | |
| City of Tallahassee (TAL) | Yes | |
| PJM | Yes | |

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| Organization | Yes or No | Question 3 Comment |
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| Hydro One Networks Inc. | Yes | |
| Manitoba Hydro | Yes | |
| ERCOT ISO | Yes | |
| American Electric Power | Yes | |
| Ameren | Yes | |
| Puget Sound Energy | Yes | |
| Northeast Utilities | Yes | |
| Pepco Holdings, Inc. | Yes | |
| Entergy Services, Inc | Yes | |
| Independent Electricity System Operator | Yes | |
| Hydro-Québec Transenergie (HQT) | Yes | |
| American Transmission Company | Yes | |
| IRC Standards Review Committee | Yes | |

4. If you have any other comments on this standard or its implementation plan that you have not already submitted above, please provide them here.

Summary Consideration: Several commenters stated their belief that the standard FAC-008 should not apply to Generator Owners and that they are duplicative with MOD-024 and MOD-025. The SDT feels strongly that the standard applies to Generator Owners and has revised the Generator Owner requirements for this draft Standard (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities and options for developing facility rating documentation. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

Three commenters disagreed that a technical review of the rating calculation methodologies and obligation to respond to comments should be required as stated in R3 and R4 (previous draft). The SDT notes that standard FAC-008-2 does not, nor was it the intent, to require the asset owner to change its ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions. R4 (previous draft) recognizes that the Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision.

Two commenters suggested revising the VRF from “Medium” to “Lower”. The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. Other commenters questioned the Violation Severity Levels, indicating that they should not be severe. Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such, VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement.

| Organization | No Comments | Question 4 Comment |
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| PacifiCorp | | ISSUE #1: Clarification on the proposed FAC-008-2 standard for transmission and substation equipment should be provided. The definition of an Equipment Rating in NERC's glossary of terms is: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as |

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| Organization | No Comments | Question 4 Comment |
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| | | <p>permitted or assigned by the equipment owner." FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'. We'd like clarification that the standard applies only to the ampacity portion of the Equipment Rating and not the full definition as noted above. The standard seems to be setup that way, but there are some questions related to the full definition of Equipment Rating and how it applies to the standard. Our facilities have always been constructed to conform to applicable IEEE and ANSI standards at the time of installation. If this doesn't cover the intent of the standard, would you please provide an example of ratings to be included for voltage, frequency, and transient conditions for a facility? An example would assist us in determining what is required to be reported, especially about the requirement of transient condition and duration. An example of what we've done to comply with FAC-009 is also attached for your review/comments. (It doesn't include the spreadsheets that combine T-Lines and Sub ratings.) In addition, the short circuit information is kept by all utilities in a separate databases and run periodically to address breakers short circuit ratings. Is it the intent of this standard to add these reports to this Facility Ratings data? ISSUE #2: The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction - and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The original drafting team for FAC-008 considered this issue when drafting the current standard. In response to a request to add the requirement that the methodology be . . . "consistent with and based on credible and recognized standards/criteria . . . ", the drafting team responded: "The Drafting Team did not adopt the change because there are many Facilities in place with ratings that were established many years ago and it would be very costly to go back and re-establish ratings based on a set of industry standards." The current proposal requires that the methodology indentify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs (which could run into the 100's of millions, and potentially billions, of dollars industry-wide) would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost</p> |

| Organization | No Comments | Question 4 Comment |
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| | | <p>data.</p> <p>Example-Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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. R2.1.4. In the case of Equipment placed in service prior to the effective date of this requirement, readily available records or data or operational experience. 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, if readily available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). If the intent of this requirement is to force entities to collect this information, then an extended implementation plan should be developed that will allow industry participants sufficient time to gather the required data before the revisions take effect.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>Issue #1: “Facility”, “Facility Rating”, “Element”, “Rating” and “Equipment Rating” are all NERC defined terms. A Facility is a set of electrical equipment that operates as a single BES Element. To determine a “Facility Rating” the Ratings of the individual equipment comprising that Facility must be considered and the most limiting applicable Equipment Rating governs the rating of the Facility (R2.3 of previous draft). R 3.4.2 requires that “as a minimum, both Normal and Emergency Ratings” shall be addressed. “Normal Rating” and “Emergency Rating” are NERC defined terms. Both of these definitions include the words “usually expressed in megawatts, or other appropriate units”.</p> <p>Issue #2: This Standard does not require the recreation of data that is no longer available or no longer accessible for any reason. R3.1 allows for multiple methods for determining facility ratings which include the items that you propose above. However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| <p>APS - Technical Projects Engineering</p> | | <p>With regard to R1.2 - Performance history will most likely give different values from engineering analysis or rating verification. Unless the specific desired rating is defined, many different interpretations of the rating can be made (FERC Form 1, net demonstrated seasonal</p> |

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| Organization | No Comments | Question 4 Comment |
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| | | capability, maximum unit capability, etc). |
| <p>Response: The FR SDT thanks you for your comment. We agree with your comment regarding performance history and engineering analysis or rating verification. Ratings specified need to be based upon assumed ambient conditions.</p> | | |
| FirstEnergy | | <p>FirstEnergy appreciates the efforts of the drafting team in developing this SAR as a result of industry objections to Requirement R7. We recognize that this requirement was included at the direction of FERC Order 693, but believe that this requirement did not add a reliability benefit. Without this requirement in the standard, the reliability goal as stated in the purpose statement, "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.", is still maintained. When explaining the technical substantiation to FERC that this requirement does not add a reliability benefit and is outside the scope of the reliability standards arena, the SDT may offer that determination of the next most limiting equipment rating would be more efficiently and appropriately addressed in the transmission tariff and RTO market processes. The opinion of the drafting team and stakeholders is vitally important in the standards development process, and we applaud NERC staff and the Standards Committee for respecting these opinions and moving forward with this SAR.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| Allegheny Energy Supply Company, LLC | | <p>We believe that "Generator Owner" should be removed from the applicability of this reliability standard. Including generation facilities in this standard does not increase the reliability of the bulk electric system. Requiring generator owners to comply with FAC-008-02 will only expose the generators to additional compliance burden without any reliability benefit. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment. However, a calculated facility rating for generators should never be used for operational or planning purposes, as the real capability and not the calculated capability should be considered. The following standards mandate the reporting of generator capability: FAC 001? Facility Connection Requirements FAC 002? Coordination of Plans for New Facilities MOD 011? Steady-state Data Requirements and Reporting Procedures MOD 024? Verification of Generator Gross and Net Real Power Capability MOD 025 - Verification of Generator Gross and Net Reactive Power Capability TOP 002? Normal Operations Planning The verification of the key generator ratings (real and reactive) as required by Standards MOD-024 & MOD-025 is by far more relevant to BES reliability than documenting the generating facility ratings methodology. FAC 008-02 should not duplicate the above mentioned or any other applicable standards. Multiple standards should not exist in parallel to</p> |

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| | | accomplish what would ultimately be the same end result. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with FAC-001, FAC-002, MOD-011 or TOP-002 as the commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Bonneville Power Administration | | BPA is in support of the SAR/standard as written. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| NPCC RSC | | <p>Various existing standards already address critical aspects of Generation Facility ratings and are sufficient for the reliable planning and operation requirements of the BES. Included among these are: FAC001-Facility Connection RequirementsFAC002-Coordination of Plans for New FacilitiesMOD011-Steady-state Data Requirements and Reporting ProceduresMOD024-Verification of Generator Gross and Net Real Power CapabilityMOD025-Verification of Generator Gross and Net Reactive Power CapabilityTOP002-Normal Operations Planning These existing standards currently address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short term de-ratings, and verification of generator facility capabilities. Standards should not exist in parallel and FAC-008-02 should not duplicate</p> |

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| | | requirements as they pertain to generation facilities. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with FAC-001, FAC-002, MOD-011 or TOP-002 as the commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| MRO NERC Standards Review Subcommittee | | FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'; the NSRS would like to have clarification of this term. Is it a type-o, should it state "Equipment Rating" |
| <p>Response: The FR SDT thanks you for your comment. The phrase ‘Ratings of Equipment’ in R3.1 is correct and is meant to imply the multiple ratings associated with the various pieces of equipment that comprises a Transmission Facility.</p> | | |
| Kansas City Power & Light | | R1 is fundamentally a duplication of the requirements contained in standards MOD-024-1 and MOD-025-1 for determination and verification of generator real and reactive capabilities. Any additional requirements language that may be deemed necessary to establish the methodology for generator power capabilities should be directed there. This would also require the removal of M1 and the VSL’s for R1 in this proposed standard. In addition, for either generating stations or transmission stations, there can be equipment that is of such an age as there is no nameplate information, no historical record of establishment of an equipment rating with the owner or the manufacturer, and/or the manufacturer of the equipment no longer exists to |

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| | | <p>obtain rating data. It is recommended the Drafting Team consider this in the requirements for FAC-008-2. Especially consider revising R6 in the proposed standard. R2.2 requires an explanation for how each of the possible methods utilized to establish equipment ratings could be used. This does not contribute to maintaining the reliability of the BES. There are hundreds of different pieces of equipment in the field. It is recommended to remove the sub-requirements of R2.2 and to delete, including identification of how each of the following were considered: ?, from requirement R2.2.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC 008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| PJM | | <p>Requirement R1 should be removed because similar requirements to determine a generator's real and reactive capability by verification exist in MOD-024 and MOD-025. Additionally MOD-010 requires submittal of generating unit capability to the Regional Council for modeling purposes.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025. FAC-008 relates to documentation for</p> | | |

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| <p>determining Facility Ratings, not the submittal of information to a Regional Entity as required in MOD-010.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Consumers Energy Company | | <p>Many generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available as required by R1. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. R1.4 - Further discussion/clarification of "Ambient conditions" needs to be contained in the Standard.</p> |
| <p>Response: The FR SDT thanks you for your comment. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities. The requirements include provisions to use performance tracking (actual test data) as a determination for Facility Ratings. The drafting team believes that most entities understand the term, "ambient conditions."</p> | | |
| Hydro One Networks Inc. | | <p>In the current version of the standard and in the proposed draft, Requirements R3 and R4 obligate TOs to subject their rating calculation methodologies to inspection and review by their RC, TOP, TP or PC. While we agree that TOs could share this material, we do not consider that a technical review and obligation to respond to comments should take place. Ratings are the sole prerogative of the asset owners and the decision on how to manage the life cycle of their assets and how they are going to be operated cannot be taken away from them. The overriding principle is that asset owners must have the final say on the ratings of the equipment they own. In response to this very comment submitted in the past, the SDT has stated that the intent of the requirement is to subject the methodology to a "peer review." Our view is that if it is a peer review, such requirement does not belong in the standard.</p> |
| <p>Response: The FR SDT thanks you for your comment. The standard does not, nor was it the intent, to require the asset owner to change their ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions.</p> | | |
| Manitoba Hydro | | <p>Manitoba Hydro does not agree with the Violation Risk Factors assigned to requirements R1 and R2. The requirement that the Transmission and Generator Owner each have a documented methodology for determining Facility Ratings should not be assigned a Medium VRF. Manitoba Hydro currently has a methodology that is used to determine Facility Ratings. If Manitoba Hydro does not clearly document this methodology, system reliability will not be negatively affected, as long as the appropriate ratings have been provided to the operators. Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not</p> |

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| | | <p>provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3 or R4. A Severe Violation Severity Level should be limited to situations where rating data is not provided (i.e. a violation of R6). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R3) jeopardize the reliability of the system. The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturer's ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data.</p> <p>Manitoba Hydro recommends that Requirements 2.1 and 2.2 be revised as follows to clearly address this issue:</p> <p>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:</p> <p>R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers (IEEE) or IEC.</p> <p>R2.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3.</p> <p>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</p> |

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| | | <p>considered:</p> <p>R2.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> |
| <p>Response: The FR SDT thanks you for your comment. We have reviewed the VRF guidelines and agree with your suggested revision. We have changed the VRF to Lower. Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post- violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement.</p> <p>For generating units covered under R.1 the word “consider” with respect to R1 does not equate with “included”. The intent of the requirement is to indicate whether a sub-requirement was considered and if so, how it was incorporated into the methodology. For a generating facility that has been in service for a number of years, “performance history” is one of the options that can be utilized for the facility ratings methodology.</p> <p>Regarding the recommendation to modify R2.1.4 to read: “Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3. R2.2”.</p> <p>Existence of records, data or operational experience for an equipment rating would normally not be an acceptable substitute for a documented rating methodology. The existence of the records, data or operational experience does not confirm that the equipment can actually withstand the loading as prescribed by the documented rating for the specified time period. The fact that time and work are required to establish a methodology is not a reason for not having a documented methodology. If this argument was valid, then entities that never experienced a stability event could argue that they do not need to run stability studies because they require time and work.</p> | | |
| American Electric Power | | <p>AEP has identified a few areas for the SDT to consider as the team reviews the scope and content of the current draft standard. Other stakeholders will likely have issues as well that warrant expanding the scope of the SAR. For example, we believe that it should be the responsibility of the owner to provide ratings. In the case where generators own facilities that could be considered transmission facilities, the generator should be able to defer to the “host” transmission owner to determine ratings for transmission equipment owned by the associated generator (provided the “host” transmission owner agrees). This arrangement could be addressed administratively by letter of understanding. Also, there seems to have been an omission by not including performance history in part of R2, as performance history is included in R1. The ratings documentation for some older facilities may not be available and there may also not be an effective manner in which to obtain such documentation. However,</p> |

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| | | performance history may well provide the necessary support for the existing ratings. |
| <p>Response: The FR SDT thanks you for your comment. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities. The requirements do not preclude the type of arrangement that you mention above to determine for Facility Ratings.</p> <p>Performance history R2: This could be covered under 3.1.3 which states: "A practice that has been verified by testing or engineering analysis."</p> | | |
| Ameren | | <p>As responded to questions above, we agree with the scope and applicability of the SAR and do not see any issues in meeting the requirements. However, we believe that SDT's response up front to the following two questions would provide further clarification, consistency and possibly would avoid future interpretation requests:</p> <p>1) R1 requires to "consider" five sub-requirements, R1.1 through R1.5. What does "consider" mean? For example, assuming that data/information is available for R1.2 through R1.5, but the commissioning data is not available for a 50+ years old generator. Would a statement to that effect be adequate to meet "consideration" criteria for R1.1? If not, could you provide any guidance for such cases</p> <p>2) Since R1 and R2 both apply to generating facilities, (a) How far "out" from the generator should the R1 requirements apply? Specifically, do the iso-phase bus duct, GSU transformer, GSU disconnect switches, synchronizing breaker, any other facility up to the interconnection point belong in (i) R1, (ii) R2, (iii) some of them belong in R1 and some of them in R2, or (iv) does not matter as long as they are covered either in R1 and R2? (b) Do the R2 requirements "start" where the R1 requirements "end"? Can you please provide guidance and/or examples to ensure that GO continues to meet R1 and R2 requirements on a consistent basis</p> |
| <p>Response: The FR SDT thanks you for your comment. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). <i>[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]</i></p> <p>1.1. The documentation shall contain at least one of the following:</p> <p style="padding-left: 40px;">Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an</p> | | |

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| | | <p>established engineering practice having a successful implementation record.</p> <p>Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.</p> <p>1.2. The documentation shall be capable of demonstrating consistency with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned equipment connected between the generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer (consistent with location specified in R1 by the Generator Owner) and the point of interconnection with the Transmission Owner that contains all of the following. <i>[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]</i></p> <p>2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p>Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <p>A practice that has been verified by testing or engineering analysis.</p> <p>2.2. 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:</p> <p>Equipment Rating standard(s) used in development of this methodology.</p> <p>Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.</p> <p>Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>Operating limitations.²</p> <p>2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> |

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

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| <p>2.4.</p> | | <p>The scope of equipment addressed shall include, but not limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.</p> <p>R2 requires the owner to “consider” five sub-requirements in the development of the methodology in R2.1, The term “consider” means, just that “consider” and a statement, for example, that “the commissioning data is not available for a 50+ years old generator” and therefore not used in developing Generator ratings.</p> |
| Puget Sound Energy | | <p>PSE requests clarity of R6 as it relates to the words “as scheduled by such requesting entities” and the added time horizon of Same-day Operations and Real time Operations. Same-day Operations would imply that an entity needs to provide facility ratings within a required timeframe of a day and Real Time Operations would imply that an entity needs to provide facility rating within one hour or less to preserve the reliability of the bulk electric system. We recognize that the words were in the previous version, but find the addition of the time horizon to create confusion and question.</p> |
| <p>Response: The FR SDT thanks you for your comment. We agree with your comment and feel that the appropriate Time Horizon in Operations Planning. We have removed the Same-Day Operations and Real-Time Operations time horizons from new R6 and R7.</p> | | |
| Wisconsin Electric Power Company dba We Energies | | <p>1. Section B, R1: Generating Unit Facilities: the Violation Risk Factor is listed as MEDIUM. We maintain the VSL should be revised to LOWER to reflect the fact that generators are radial elements which do not have the potential to limit area power flows like transmission lines do.</p> <p>2. Section D, Compliance, 2. Violation Severity Levels: Similar to the comments for R1 above, the Violation Severity Levels for R1.1 through R1.5 should be lower than shown in the draft. The maximum level for generating facilities should be changed from SEVERE to MODERATE to adequately distinguish between a radial generator and a network transmission line.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have reviewed the VRF guidelines and agree with your suggested revision. We have changed the VRF to Lower.</p> <p>Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post- violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement.</p> | | |
| Xcel Energy | | <p>ISSUE #1: Xcel Energy is requesting clarification on the proposed FAC-008-2 standard for transmission and substation equipment. The definition of an Equipment Rating in NERC’s glossary of terms is: “The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient</p> |

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| | | <p>conditions, as permitted or assigned by the equipment owner." FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'. We'd like clarification that the standard applies only to the ampacity portion of the Equipment Rating and not the full definition as noted above. The standard seems to be setup that way, but internally we've had some questions related to the full definition of Equipment Rating and how it applies to the standard. Our facilities have always been constructed to conform to applicable IEEE and ANSI standards at the time of installation. If this doesn't cover the intent of the standard, would you please provide an example of ratings to be included for voltage, frequency, and transient conditions for a facility? An example would assist us in determining what is required to be reported, especially about the requirement of transient condition and duration. An example of what we've done to comply with FAC-009 is also attached for your review/comments. (It doesn't include the spreadsheets that combine T-Lines and Sub ratings.) In addition, the short circuit information is kept by all utilities in a separate database (CAPE, ASPEN, etc.) and ran periodically to address breakers short circuit ratings. Is it the intent of this standard to add these reports to this Facility Ratings data?</p> <p>ISSUE #2: The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction? and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The original drafting team for FAC-008 considered this issue when drafting the current standard. In response to a request to add the requirement that the methodology be ?consistent with and based on credible and recognized standards/criteria ?, the drafting team responded: " The Drafting Team did not adopt the change because there are many Facilities in place with ratings that were established many years ago and it would be very costly to go back and re-establish ratings based on a set of industry standards." The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs (which Xcel Energy anticipates could run into the 100's of millions, and potentially billions, of dollars industry-wide) would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to</p> |

| Organization | No Comments | Question 4 Comment |
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| | | <p>justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Xcel Energy recommends that Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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 R2.1.4. In the case of Equipment placed in service prior to the effective date of this requirement, readily available records or data or operational experience. 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, if readily available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). If the intent of this requirement is to force entities to collect this information, then an extended implementation plan should be developed that will allow industry participants sufficient time to gather the required data before the revisions take effect.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>Issue #1: “Facility”, “Facility Rating”, “Element”, “Rating” and “Equipment Rating” are all NERC defined terms. A Facility is a set of electrical equipment that operates as a single BES Element. To determine a “Facility Rating” the Ratings of the individual equipment comprising that Facility must be considered and the most limiting applicable Equipment Rating governs the rating of the Facility (R2.3 of previous draft). R 3.4.2 requires that “as a minimum, both Normal and Emergency Ratings” shall be addressed. “Normal Rating” and “Emergency Rating” are NERC defined terms. Both of these definitions include the words “usually expressed in megawatts, or other appropriate units”.</p> <p>Issue #2: This Standard does not require the recreation of data that is no longer available or no longer accessible for any reason. R3.1 allows for multiple methods for determining facility ratings which include the items that you propose above. However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| <p>Independent Electricity System Operator</p> | | <p>The IESO would like to reiterate two of its previous comments (on R4 and R5) which we feel have not been satisfactorily addressed by the SDT. Our previous comments on R4: We do not think this rises to the level of a reliability standard. This is an administrative process. Further, the TO and the GO own their facilities and they provide these facilities for the GOP and TOP and other applicable entities to operate. The ratings they determine provide the upper bound that their facilities may be operated to, and hence should be decided totally at their own</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | No Comments | Question 4 Comment |
|--|-------------|---|
| | | <p>discretion. We do not believe other entities have the right to challenge the methods used or the level of the rating determined by the facility owners. Any such challenges, even applicable, should be addressed in the agreements among the owners and the users and outside of the reliability standard process. We suggest that this requirement be removed. The SDT's Response: The intent of R4 is to provide peer review. This is an important concept in ensuring the technical accuracy of the rating methodology. Peers are more likely to have detailed knowledge of methodologies than auditors - and finding errors or questionable practices before the use of an unsound methodology results in inappropriate ratings is better than the alternative which is to discover incorrect ratings during a system disturbance IESO's view is that this response does not recognize that the decision authority rests solely with the facility owners (as so indicated by the SDT in its response to our comments on R5, as detailed below). Providing a response to comments on the rating is an administrative procedure that does not contribute to reliability whatsoever. We request the SDT to re-consider our comment and proposal to drop this requirement. Our previous comments on R5: R5 holds the facility owners responsible for determining the ratings for their solely and jointly owned facilities. The standard is silent on which methodology to use and how ratings of jointly owned facilities are determined. For example, there is no requirement on which method to choose among joint owners if their methods are different, and on using the more conservative of the two ratings where different. This needs to be provided. SDT's Response R5 the Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision. This response does not address which facility owner, among the joint owners, has the final say. Further, while the rating itself may be a commercially-based decision, the decision on which method to choose from among those provided by the joint owners to develop the final rating is not specified in the requirement, which can lead to confusing ratings to the users and operators of jointly own facilities and result in adverse impact on reliability. We urge the SDT to consider strengthening R5 to fill this void.</p> |
| <p>Response: The FR SDT thanks you for your comment. The standard does not, nor was it the intent, to require the asset owner to change their ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions.</p> <p>Which ratings methodology should be utilized to determine the ratings of jointly owned facilities should be addressed in the agreements among the owners. The intent of this standard is to have a documented rating methodology, not to dictate what methodology is used to determine ratings on a jointly owned facility.</p> | | |
| OPG | | <p>References related to major system disturbances, including the NERC's 2003 Blackout Report; do not indicate GENERATING Facility Rating Methodologies as a source of problems. On the other hand, NERC's 2003 Blackout report, recommendation 13c, talks about the need to evaluate TRANSMISSION facility rating methodologies and sharing of consistent ratings information. This was driven by cases where planners and operators from different areas used</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | No Comments | Question 4 Comment |
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| | | different ratings for the same facility (i.e. HV transmission lines). This implies that the main focus of FAC 008-02 should be on major TRANSMISSION facilities. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of the standard is: “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.”</p> <p>This applies to Generation as well as Transmission Facilities. In addition, FERC Order 693, Paragraph 739, FERC “directs the ERO to submit a modification to FAC-008-1 that requires transmission and generation facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings”. This also supports the applicability of FAC-008-2 to both Generation and Transmission Facilities.</p> | | |
| Hydro-Québec Transenergie (HQT) | | Various existing standards address critical aspects of Generation Facility ratings and could be sufficient for the reliable planning and operation requirements of the BES. Included among these are: FAC001-Facility Connection RequirementsFAC002-Coordination of Plans for New FacilitiesMOD011-Steady-state Data Requirements and Reporting ProceduresMOD024-Verification of Generator Gross and Net Real Power CapabilityMOD025-Verification of Generator Gross and Net Reactive Power CapabilityTOP002-Normal Operations Planning These existing standards currently address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short term de-ratings, and verification of generator facility capabilities. These standards and FAC-008-02 should be reviewed eventually to eliminate duplication of requirements. |
| <p>Response: The FR SDT thanks you for you comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” The other standards that you mention require reporting of data and ratings. The FR SDT agrees that redundancy between standards should be eliminated.</p> | | |
| American Transmission Company | | FERC has the ability, through its market oversight authority, to require the reporting of the limiting component and the theoretical increase in rating of the limiting component is disregarded. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| IRC Standards Review Committee | | <p>The SRC would like to reiterate two of its previous comments (on R4 and R5) which we feel have not been satisfactorily addressed by the SDT.</p> <p>R4: If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner’s</p> |

| Organization | No Comments | Question 4 Comment |
|--------------|-------------|--|
| | | <p>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.</p> <p><u>Our previous comments on R4:</u></p> <p>We do not think this rises to the level of a reliability standard. This is an administrative process. Further, the TO and the GO own their facilities and they provide these facilities for the GOP and TOP and other applicable entities to operate. The ratings they determine provide the upper bound that their facilities may be operated to, and hence should be decided totally at their own discretion. We do not believe other entities have the right to challenge the methods used or the level of the rating determined by the facility owners. Any such challenges, even applicable, should be addressed in the agreements among the owners and the users and outside of the reliability standard process. We suggest that this requirement be removed.</p> <p>SRC’s view is that this response does not recognize that the decision authority rests solely with the facility owners (as so indicated by the SDT in its response to our comments on R5, as detailed below). Providing a response to comments on the rating is an administrative procedure that does not contribute to reliability whatsoever. We request the SDT to re-consider our comment and proposal to drop this requirement.</p> <p>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.</p> <p><u>Our previous comments on R5:</u></p> <p>R5 holds the facility owners responsible for determining the ratings for their solely and jointly owned facilities. The standard is silent on which methodology to use and how ratings of jointly owned facilities are determined. For example, there is no requirement on which method to choose among joint owners if their methods are different, and on using the more conservative of the two ratings where different. This needs to be provided.</p> <p>This response does not address which facility owner, among the joint owners, has the final say. Further, while the rating itself may be a commercially-based decision, the decision on which method to choose from among those provided by the joint owners to develop the final rating is not specified in the requirement, which can lead to confusing ratings to the users and operators of jointly own facilities and result in adverse impact on reliability.</p> <p>We urge the SDT to consider strengthening R5 to fill this void.</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | No Comments | Question 4 Comment |
|---|------------------------|--------------------|
| <p>Response: The FR SDT thanks you for your comment. The standard does not, nor was it the intent, to require the asset owner to change their ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions.</p> <p>R4: The intent of R4 is to provide peer review. This is an important concept in ensuring the technical accuracy of the rating methodology. Peers are more likely to have detailed knowledge of methodologies than auditors – and finding errors or questionable practices before the use of an unsound methodology results in inappropriate ratings is better than the alternative – which is to discover incorrect ratings during a system disturbance</p> <p>R5: The Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision.</p> | | |
| Electric Power Supply Association | No Additional Comments | |
| Dynegy | No Additional Comments | |
| Duke Energy | No Additional Comments | |
| Cowlitz County PUD | No Additional Comments | |
| City of Tallahassee (TAL) | No Additional Comments | |
| SERC Engineering Committee Planning Standards Subcommittee | No Additional Comments | |
| Reliant Energy Inc and Gila River Power | No Additional Comments | |
| Southern Company | No Additional Comments | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | No Comments | Question 4 Comment |
|---------------------------------|------------------------|---------------------------|
| Dominion Resources Inc. | No Additional Comments | |
| Public Service Enterprise Group | No Additional Comments | |
| Northeast Utilities | No Additional Comments | |
| Pepco Holdings, Inc. | No Additional Comments | |
| Entergy Services, Inc | No Additional Comments | |
| ERCOT ISO | No Additional Comments | |

Consideration of Comments on Draft 2 of the Proposed SAR and Modifications to Facility Ratings Standards — Project 2009-06

The Facility Ratings Standard Drafting Team (FR SDT) thanks all commenters who submitted comments on the second draft of standard FAC-008-2 — Facility Ratings and its associated Standards Authorization Request (SAR). This standard and SAR was posted for a 30-day public comment period from August 10, 2009 through September 9, 2009. Stakeholders were asked to provide feedback on the SAR and standard through a special electronic comment form. There were 39 sets of comments, including comments from more than 90 different people from over 45 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments are publicly posted at the following site:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Several commenters suggested revising the parenthetical in R1 and R2 for clarity. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase and revised the requirement to better reflect the intent of R1 and R2. The Intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Most stakeholders agree that R1 allows more latitude for the Generator Owner in how it supports the technical basis for its generator Facility Ratings. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. Two stakeholders suggested that the standard should not apply to Generator Owners and that MOD standards more appropriately address the need for generator ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

Several commenters suggested that the black box approach led to more confusion for the requirements rather than clarifying them as the FR SDT intended. Several stakeholders suggested better clarity to the requirements was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of

interconnection. We have revised R1 and R2 (see above). Several stakeholders suggested that Requirement R2 should address both Normal and Emergency Ratings, consistent with Requirement R3. We have revised Requirement R2, Part 2.4.2 to "The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings." Still other stakeholders suggested that more clarity for R2 was needed (see revised R2 above).

Several stakeholders pointed out that there are 2 sets of VSLs for R3. The first set is for R3 and the second set is for R4. The FR SDT corrected this error. Other stakeholders suggested revising Requirement R2, Part 2.3 to change the word "respect" to "reflect" or "corresponds to". The FR SDT disagrees because the intent of Requirement R1, Part 1.2 is to make sure that the most limiting Facility is not exceeded. The rating may be lower for other reasons. Similar comments were received regarding Requirement R3, Part 3.3. Several commenters suggested revisions to the VSLs. The FR SDT agreed and made the suggested revisions unless they were no longer applicable due to revisions to the requirement. It was also suggested that Requirement R7 should include Transmission Owner(s). The FR SDT agrees and has made the revision.

One commenter noted the following: {We note that the consideration of comments to the August comments stated that "The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to "Lower". " However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.}

The FR SDT revised the VRF's to lower for R1 and R2.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

| | |
|--|----|
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Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | |
|----|-------|--------------------------|--|------------------|--------------------------|---|---|---|---|---|---|---|----|--|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1. | Group | Philip R. Kleckley | SERC Planning Standards Subcommittee | | | X | | | | | | | | | |
| | | Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | |
| | | 1. Bob Jones | Southern Company Services | SERC | 1 | | | | | | | | | | |
| | | 2. David Marler | Tennessee Valley Authority | SERC | 1 | | | | | | | | | | |
| | | 3. John Sullivan | Ameren Services Company | SERC | 1 | | | | | | | | | | |
| | | 4. Charles Long | Entergy | SERC | 1 | | | | | | | | | | |
| | | 5. James Manning | North Carolina Electric Membership Corporation | SERC | 3 | | | | | | | | | | |
| | | 6. Pat Huntley | SERC Reliability Corporation | SERC | 10 | | | | | | | | | | |
| 2. | Group | Guy Zito | Northeast Power Coordinating Council | | | | | | | | | | | | X |
| | | Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | |
| | | 1. Ralph Rufrano | New York Power Authority | NPCC | 5 | | | | | | | | | | |
| | | 2. Alan Adamson | New York State Reliability Council, LLC | NPCC | 10 | | | | | | | | | | |
| | | 3. Gregory Campoli | New York Independent System Operator | NPCC | 2 | | | | | | | | | | |
| | | 4. Roger Champagne | Hydro-Quebec TransEnergie | NPCC | 2 | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 5. | Kurtis Chong | Independent Electricity System Operator | NPCC | 2 | | | | | | | | | | | | | | | | |
| 6. | Sylvain Clermont | Hydro-Quebec TransEnergie | NPCC | 1 | | | | | | | | | | | | | | | | |
| 7. | Manuel Couto | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | |
| 8. | Chris de Graffenried | Consolidated Edison Co. of New York | NPCC | 1 | | | | | | | | | | | | | | | | |
| 9. | Brian D. Evans-Mongeon | Utility Services | NPCC | 8 | | | | | | | | | | | | | | | | |
| 10. | Mike Garton | Dominion Resources Services, Inc. | NPCC | 5 | | | | | | | | | | | | | | | | |
| 11. | Brian L. Gooder | Ontario Power Generation Incorporated | NPCC | 5 | | | | | | | | | | | | | | | | |
| 12. | Kathleen Goodman | ISO - New England | NPCC | 2 | | | | | | | | | | | | | | | | |
| 13. | David Kiguel | Hydro One Networks Inc. | NPCC | 1 | | | | | | | | | | | | | | | | |
| 14. | Michael R. Lombardi | Northeast Utilities | NPCC | 1 | | | | | | | | | | | | | | | | |
| 15. | Randy MacDonald | New Brunswick System Operator | NPCC | 2 | | | | | | | | | | | | | | | | |
| 16. | Greg Mason | Dynegy Generation | NPCC | 5 | | | | | | | | | | | | | | | | |
| 17. | Bruce Metruck | New York Power Authority | NPCC | 6 | | | | | | | | | | | | | | | | |
| 18. | Chris Orzel | FPL Energy/NextEra Energy | NPCC | 5 | | | | | | | | | | | | | | | | |
| 19. | Robert Pellegrini | The United Illuminating Company | NPCC | 1 | | | | | | | | | | | | | | | | |
| 20. | Michael Schiavone | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | |
| 21. | Peter Yost | Consolidated Edison Co. of New York, Inc. | NPCC | 3 | | | | | | | | | | | | | | | | |
| 22. | Gerry Dunbar | Northeast Power Coordinating Council | NPCC | 10 | | | | | | | | | | | | | | | | |
| 23. | Lee Pedowicz | Northeast Power Coordinating Council | NPCC | 10 | | | | | | | | | | | | | | | | |
| 3. | Group | Jalal Babik | Electric Market Policy | | X | | X | | X | X | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Louis Slade | SERC | 6 | | | | | | | | | | | | | | | | | |
| 2. | Mike Garton | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 4. | Group | Denise Koehn | Bonneville Power Administration | | X | | X | | X | X | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Thong Trinh | Communications & Grid Modeling | WECC | 1 | | | | | | | | | | | | | | | | |
| 2. | Jack Allison | Federal Hydro Projects | WECC | 3, 5, 6 | | | | | | | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Group | Richard Kafka | Pepco Holdings, Inc. - Affiliates | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Jane Verner | Potomac Electric Power Co | RFC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Anne Morgan | Potomac Electric Power Co | RFC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Chih Chow | Potomac Electric Power Co | RFC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Group | Tom Bradish | RRI Energy Inc | | | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment Selection</th> </tr> </thead> <tbody> <tr> <td>1. Tom Bradish</td> <td>RRI Energy Inc</td> <td>RFC</td> <td>5, 6</td> </tr> <tr> <td>2. John Simpson</td> <td>RRI Energy Inc</td> <td>WECC</td> <td>5, 6</td> </tr> </tbody> </table> | | | | | | | | | | | | | | | Additional Member | Additional Organization | Region | Segment Selection | 1. Tom Bradish | RRI Energy Inc | RFC | 5, 6 | 2. John Simpson | RRI Energy Inc | WECC | 5, 6 | | | | | | | | | | | | | | | | |
| Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Tom Bradish | RRI Energy Inc | RFC | 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. John Simpson | RRI Energy Inc | WECC | 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Group | Sam Ciccone | FirstEnergy | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 6. Diane Spidle | FE | RFC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Group | Carol Gerou | NERC Standards Review Subcommittee | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Joe DePoorter | Madison Gas & Electric | MRO | 3, 4, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Neal Balu | WPS Corporation | MRO | 3, 4, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 5. Jodi Jenson | Western Area Power Administration | MRO | 1, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Terry Harbour | MidAmerican Energy Company | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Joseph Knight | Great River Energy | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Alice Murdock | Xcel Energy | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Scott Nickels | Rochester Public Utilities | MRO | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Dave Rudolph | Basin Electric Power Cooperative | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Eric Ruskamp | Lincoln Electric System | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Group | Ben Li | IRC Standards Review Committee | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1. Matt Goldberg | ISO-NE | NPCC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Bill Phillips | MISO | MRO | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Anita Lee | AESO | WECC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Charles Yeung | SPP | SPP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Patrick Brown | PJM | RFC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Steve Myers | ERCOT | ERCOT | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. James Castle | NYISO | NPCC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Individual | Benjamin Church | NextEra Energy Resources | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Individual | Hugh Francis | Southern Company | X | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Individual | Sandra Shaffer | PacifiCorp | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. | Individual | Duncan Brown | Calpine Corporation | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14. | Individual | Frank Gaffney | Florida Municipal Power Agency, and its Member Cities, Fort Pierce Utilities Authority and Kissimmee Utility Authority | X | | X | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. | Individual | Ed Stein | Self-retired | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | |
|-----|------------|--|--|------------------|---|---|---|---|---|---|---|---|----|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 16. | Individual | James Starling | SCE&G | X | | X | | X | X | | | | | |
| 17. | Individual | Baj Agrawal | Arizona Public Service Co. | X | | | | X | | | | | | |
| 18. | Individual | Alice Murdock | Xcel Energy | X | | X | | X | X | | | | | |
| 19. | Individual | Kasia Mihalchuk | Manitoba Hydro | X | | X | | X | X | | | | | |
| 20. | Individual | Chifong Thomas | Pacific Gas and Electric Co. | X | | X | | X | | | | | | |
| 21. | Individual | James Stanton | SPS Energy | | | | | | | | | X | | |
| 22. | Individual | Edward Davis | Energy Services, Inc | X | | X | | X | X | | | | | |
| 23. | Individual | Vladimir Stanisic | Ontario Power Generation | | | | | X | X | | | | | |
| 24. | Individual | Greg Mason | Dynegy Inc. | | | | | X | | | | | | |
| 25. | Individual | John Sullivan | Ameren | X | | X | | X | X | | | | | |
| 26. | Individual | Mark Kuras | PJM | | X | | | | | | | | | |
| 27. | Individual | Brent Ingebrigtsen | E.ON U.S. | X | | X | | X | X | | | | | |
| 28. | Individual | Martin Bauer | US Bureau of Reclamation | | | | | X | | | | | X | |
| 29. | Individual | Greg Rowland | Duke Energy | X | | X | | X | X | | | | | |
| 30. | Individual | Daniel J. Hansen | RRI Energy | | | X | | | | | | | | |
| 31. | Individual | Scott Etnoyer, Director NERC Compliance | Constellation Power Source Generation, Inc. | | | X | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

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|-----|------------|-------------------------|---|------------------|---|---|---|---|---|---|---|---|----|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 32. | Individual | Scott Barfield-McGinnis | Georgia System Operations Corporation | | | X | X | | | | | | | |
| 33. | Individual | James H. Sorrels, Jr. | AEP | X | | X | | X | X | | | | | |
| 34. | Individual | Angela Battle | Georgia Transmission Corporation | X | | | | | | | | | | |
| 35. | Individual | Catherine Koch | Puget Sound Energy | X | | | | | | | | | | |
| 36. | Individual | Armin Klusman | CenterPoint Energy | X | | | | | | | | | | |
| 37. | Individual | John P. Mayhan | Omaha Public Power District | X | | X | | X | X | | | | | |
| 38. | Individual | Dan Rochester | Independent Electricity System Operator | | X | | | | | | | | | |
| 39. | Individual | Joe Knight | Great River Energy | X | | X | | X | X | | | | | |

1. Do you agree that Requirement R1 removes the ambiguity of and simplifies the Generator Owner obligations for generator Facility Ratings?

Summary Consideration: Several commenters suggested revising the parenthetical which said, “location as specified by the Generator Owner” in R1 and R2 for clarity. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements, indicating that the inclusion of the word, “turbine” was confusing. The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase and revised the requirement to better reflect the intent of R1 and R2. The Intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 1 Comment |
|------------------------|-----------|---|
| Electric Market Policy | No | <p>1 Requirement R1 - The wording in the parentheses should be revised to read: “consistent with the change in ownership between the Generator and Transmission Owners.” This will ensure there are no gaps between GO and TO owned equipment and reinforces the SDT’s stated view in paragraph 3 on page 2 of 5.</p> <p>2 Requirement R1.1.1 The phrase “an established engineering practice having a successful implementation record” should be replaced, for clarity, with the language used in Requirements R2.1.3 and R3.1.3: A practice that has been verified by testing or engineering analysis.</p> <p>3 Requirement R1.1.2 It is not clear how testing could be used as a means of documentation for determining a Facility Rating. We don’t agree that testing is an appropriate means to rate a facility. It may validate the rating, but then again may prove it wrong (failure). We don’t see similar language in R3 and we assume it’s because the SDT didn’t believe it appropriate to develop transmission ratings through a “test to fail” methodology. Secondly, we disagree because testing will produce a unit capability that will vary season-to-season. Such tests should not be allowed to exceed the facility rating. Also, if a GO modifies the generator to increase its output, we suggest that the Facility Rating</p> |

| Organization | Yes or No | Question 1 Comment |
|---|-----------|---|
| | | methodology should be reviewed in advance of scheduling a performance test. |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1 The FR SDT removed the parenthetical phrase and revised the requirement to: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>2 We have revised the phrase to: “An established engineering practice that has been verified by testing or engineering analysis.”</p> <p>3 We agree that it is inappropriate to “test to fail”, however the requirement does not indicate this. Testing is but one way to satisfy the requirement.</p> | | |
| Calpine Corporation | No | <p>1. The proposed limiting of the R1 to turbine-generator units raises the question as to why R1 should apply only to generators operated by a specific type of prime mover. Any generation source (such as diesel-generators), regardless of technology should be subject to the Facility Rating Standard.</p> <p>2. More importantly, it's not clear what “Facility Ratings” are required by the proposed Standard. There appears to be significant confusion within the industry as to whether the Standard is proposed to require “capacity ratings” of a generating unit as a whole, or whether its scope is limited to the electrical ratings of the electrical equipment from the generator to the point of interconnection with the grid, as indicated by the current definitions of “Facility Ratings” and “Facility” in the NERC Glossary of Terms. Clarification is needed as to whether the drafting committee’s intent is to require that Facility Ratings be provided that reflect the generating facility’s overall electrical output capacity based on evaluation of the numerous non-electrical systems that comprise a generating facility and that may, depending on numerous variables, be the actual limiting factor of the output of the generation facility at any given time. The Drafting team’s statement could be read to indicate either interpretation: “The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). If the intent of the proposed Standard is to encompass anything other than the electrical ratings of the equipment from the generator to the point of interconnection. Then a large amount of specific information to delineate the scope of the Requirements in a way that would allow consistent ratings and appropriate enforcement of the Standard would be needed before such a Standard should be submitted.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1 We have removed the word “turbine” from R1.</p> <p>2 The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current,</p> | | |

| Organization | Yes or No | Question 1 Comment |
|--|-----------|---|
| <p>frequency, real, or reactive power flow). This only includes the electrical facilities.</p> | | |
| <p>NERC Standards Review Subcommittee</p> | <p>No</p> | <p>A. R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. The MRO NSRS feels the draft standard is more ambiguous in this area than in the current version. The standard should specify that the scope includes only the electrical equipment from the generator out to the point of interconnection. The MRO NSRS strongly feels that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, rating responsibility should be based on ownership and not the selection of any particular boundary.</p> <p>B. There are many pieces of equipment that are “behind” the generator that ensure MWs and MVARs are available to the interconnection. R1 states all “turbine generator Facilities” shall have documentation to determine its Facility Ratings. This could be construed as all generators are “turbine” driven, except solar. Does this take into consideration the 20 MVA (individual unit) and 75 MVA (plant/ facility) as stated in the NERC Statement of Compliance Criteria?</p> <p>C. MRO NSRS agrees with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, the MRO NSRS believes that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine’ to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 1 Comment |
|--|-----------|---|
| E.ON U.S. | No | E.ON U.S. believes that in providing more choice R1 actually adds to the ambiguity. Additionally, E.ON U.S. questions whether this requirement will prompt NERC to reconsider past penalties for entities that had utilized actual performance tests to comply with FAC-008/009. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>The FR SDT can not address any past penalty or compliance issues.</p> | | |
| Great River Energy | No | GRE appreciates that the standard will allow commissioning data, operational testing and historical performance data to serve as evidence to support its facility rating. Some of the items under 2.2 (ambient, operating limitations) should also apply to the equipment referenced in R1. GRE would like clarification on when Facility Ratings are referring to the turbine generator facilities the standard states that the GO must have documentation for determining these ratings; and when the standard is referring to the ratings of essentially the same facility but from either the generator terminals, low side terminals or high side terminals to the point of interconnection, the documentation for determining these ratings is now called a methodology. Why would it not be a methodology for determining the ratings of the turbine generator facility? It also appears that the GO will now need to have two sets of facility ratings. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT contends that ambient and operating limitations are already covered implicitly in engineering analysis. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up</p> | | |

| Organization | Yes or No | Question 1 Comment |
|--|-----------|--|
| <p>transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| <p>Florida Municipal Power Agency, and its Member Cities</p> | <p>No</p> | <p>It is still confusing to FMPA whether, for generators, the SDT intends the standard to apply to determining the electrical rating of the electrical equipment, or whether the SDT intends the standard to apply to determining the capability of the mechanical plant. The NERC Glossary of Terms defines a Rating as: "The operational limits of a transmission system element under a set of specified conditions," and Equipment Rating as: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner." The mechanical plant has no "equipment" that is limited by "voltage, current, "real and reactive power flows", but rather the equipment is limited by temperatures, pressures and emissions. The MW capability of the mechanical plant / prime mover is a result of operating to temperature, pressure and emission limits, and is not itself an operational limit; hence, there is no MW "rating" of a prime mover because MW is not the operational limit. So, it seems to FMPA that Facility Ratings are not applicable to the mechanical plant of a generator, but rather, only applicable to the electrical equipment. The only exception to this ought to be the frequency limits (RPM) of the turbine. Another question to ask oneself is: how would such a rating be used? For instance, in the summer, utilities typically use a summer rating to allow operators to operate within those ratings. Is the SDT suggesting that a MW rating of the prime mover would be created and operators would limit the output of the plant to that rating? That seems inappropriate since generator operators limit the output of the plant not by MWs, but by temperatures, pressures and emissions, and MW output can change from hour to hour depending on operating conditions. If it is for modeling in a summer peak load flow case, then it is really capability at a specific ambient temperature, specific fuel source, etc. that is desired, and is better handled in MOD-024 because that is not the rating of the facility. FMPA proposes that the Facility Rating of the generator ought to just consider electrical equipment (and the frequency limit of the turbine). Such a rating is a true "operational limit" to the capability of prime mover at any moment in time, such as are temperature, pressure and emission limits.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word "turbine" to clarify that the requirement only applies to electrical facilities.</p> | | |
| <p>Ontario Power</p> | <p>No</p> | <p>Our response to this question would be YES/NO but check boxes do not allow that. The SDT is</p> |

| Organization | Yes or No | Question 1 Comment |
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| Generation | | <p>commended for making a significant step in the right direction and changing the focus of the standard from “Documented Methodologies” towards actual documentation that supports the development of Facility Ratings. Nevertheless, R1 is still burdened with an ambiguous notion of what constitutes a “Generation Facility”. For example, term “turbine-generator” may be interpreted to exclude hydro-generators. In addition, wording of R1 attempts to provide more flexibility and specificity regarding “Generation Facility” boundaries but in our view actually creates unnecessary confusion and complexity. Instead, we suggest that the SDT should consider using the term “up to the Point of Interconnection”. Here is the definition for Point of Interconnection. FERC Order 661 refers to Order 2003 for this definition so it is presumably the most current. From FERC Order 2003, APPENDIX C “STANDARD LARGE GENERATOR INTERCONNECTION PROCEDURES (LGIP)” including “STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT (LGIA)”: Point of Interconnection shall mean the point, as set forth in Appendix A to the Standard Large Generator Interconnection Agreement, where the Interconnection Facilities connect to the Transmission Provider’s Transmission System. By adopting the term “Point of Interconnection”, FAC-008-02 would have the boundaries of “Generating Facilities” clearly set and uniformly applied. This would also eliminate the need for R2. The language of the standard would also become consistent with the language of FAC-001-0 and FAC-002-0 that deal with the subject of Facility Connection requirements and plans.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Xcel Energy | No | <p>R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. We feel the draft standard is more ambiguous in this area than in the current version. The standard should specify if</p> |

| Organization | Yes or No | Question 1 Comment |
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| | | <p>its scope includes only the electrical equipment from the generator out to the point of interconnection, or if it also includes the prime mover and all mechanical equipment behind it. We strongly feel that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, having the GO chose the boundary for the plant facility creates more ambiguity and inconsistency. Rating responsibility should be based on ownership and not the selection of any particular boundary.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1 to clarify that the requirement only applies to electrical facilities and removed the parenthetical that included the language referencing the Generator Owner’s authority to choose the boundary for the plant facility. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| PJM | No | <p>Requirement 1 needs to be removed. Other standards that require verification of real and reactive capability should suffice and this requirement is duplicative of those requirements. Even if you don't believe that MOD-024 and MOD-025 sufficiently cover this requirement, a GO should be able to rate it's generator any way it wants as long as it's consistent with its true capability. No methodology should be required.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the</p> | | |

| Organization | Yes or No | Question 1 Comment |
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| <p>Transmission Owner that contains all of the following. R1 does not require a methodology and a GO is free to rate its generator any way it wants. That rating has to be documented.</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q6 below.</p> | | |
| Ameren | No | The demarcation point should be the point of interconnection with the transmission system. For example, windfarms may have a 10 mile lead line that should also be included in their facilities. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>R2 applies to the 10 mile lead line that you mention.</p> | | |
| RRI Energy | No | The requirement is improved, but on the whole, the standard requirements (and accompanying obligations) place equal or more burden upon generator owners for the predicable operation of radial connected facilities, than those imposed upon networked components of the transmission system, where the need for facility ratings is crucial for the ever changing operating conditions of the transmission system. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. R2 and R3 are equivalent requirements that apply to different entities.</p> | | |
| SPS Energy | No | The standard is flawed in its very purpose in that calculated, or "backed into" generator ratings as described in R1.1.1 should never be used in the operation horizon for the reliable operation of the |

| Organization | Yes or No | Question 1 Comment |
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| | | <p>BES. Using the backed into ratings for planning is less dangerous but equally useless since real ratings are readily available. The OPERATION of the BES should make use of the current capability information provided by IRO-004-1 R4, TOP-00202 R13&15, and TOP-003-0</p> <p>R1. 1.2 "capable of demonstrating consistency..." is ambiguous. Performance testing and periodic capability tests will embody any applicable equipment rating, including the most limiting. 1.2 is a non-sensical statement and should be removed.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to provide documentation on generator facility ratings for planning (hence the “long-term planning: time horizon.) The day-to-day capability information in the other standards that you mention are real-time standards.</p> <p>We have revised Requirement R1, Part 1.2 to: “The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.”</p> | | |
| Arizona Public Service Co. | No | <p>The term “Facility Rating” in R1 is still vague. It is still not clear whether it includes auxiliaries or not. If the turbine generator rating is of interest, it should simply say so. There are also additional issues that are not touched on with this rating requirement where the rating is not limited by the turbine generator or a component but by regulatory environmental issues.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>Requirement R2, Part 2.2.4 and Requirement R3, Part R3.2.4 call for the ratings methodology to include “operating limitations” which could include, but is not limited to, regulatory or environmental issues.</p> | | |
| SCE&G | No | <p>The wording in the standard still does not define the boundaries of the equipment to be evaluated in establishing the facility rating. Are we to assume that "the Facility Ratings of its solely and jointly</p> |

| Organization | Yes or No | Question 1 Comment |
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| | | <p>owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer" means all equipment in the primary and secondary systems (for nuclear) and everything from the fuel source (or energy source for hydros) to the generator terminals, etc?</p> <p>Also, it is difficult to interpret in R1.1 whether "contain at least one of the following:" means one of the following elements in each subrequirement or one of the subrequirements as a whole. If the latter was the intent then R1.1 should be clarified to read: "The documentation shall contain design/construction information and/or Operational Information as follows:"</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>We have also removed the word "turbine" from the requirement.</p> <p>Requirement R1, Part 1.1 means to apply either Part 1.1.1 or Part 1.1.2. or both Part 1.1.1 and Part 1.1.2. It is up to the Generator Owner to decide.</p> | | |
| AEP | No | There is additional clarification necessary in regard to whether the requirement references Real (MW) and Reactive (MVAR) Power. |
| <p>Response: The FR SDT thanks you for your comment. Facility Rating is a defined term: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." The FR SDT does not feel that any further clarification is necessary.</p> | | |
| FirstEnergy | No | We agree that the new requirements R1 and R2 establish separation from traditional generation facilities and non-generator facilities for equipment owned (solely or jointly) by a generator owner. Furthermore, it appears consistent with the approach being recommended in the draft Generator Requirements at the Transmission Interface report which is presently out for industry comment. However, as written requirement R1 (and to a lesser extent R2) could lead to confusion and we |

| Organization | Yes or No | Question 1 Comment |
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| | | believe that improvement is needed. See our comments in Questions 2 through 6 for further details. |
| Response: The FR SDT thanks you for your comment. Please see our responses to questions 2-6. | | |
| IRC Standards Review Committee | No | We agree with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, we believe that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners. NERC has already assigned this issue to a task team and this drafting team should avoid complicating the issue further. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Northeast Power Coordinating Council | No | We disagree with the proposal in Requirement R1 that the selection of the point of demarcation between the Generator Owner and Transmission Owner be left up to the Generator Owner. Requirement R1 reads: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). (Highlighting added). NERC should leave this up to the Generator Owners and Transmission Owners to establish jointly, more specifically to decide the “boundary”, because each situation is different in the way assets are divided up, and the ownership line drawn. |
| Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have removed the parenthetical phrase in R1 that included the language referencing the Generator Owner’s | | |

| Organization | Yes or No | Question 1 Comment |
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| <p>authority to choose the boundary for the plant facility. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> | | |
| RRI Energy Inc | No | <p>We do not feel that this standard should be applied to a generator. This standard clearly should be applied to transmission elements that transmit power and whose rating can be influence by other transmission elements both upstream and down stream of the element being rated. This is a key difference between the generator ratings and transmission system equipment ratings is that the generator only sees operating values that are under the operator’s direct control. The generator cannot operate above where the operator tells it to. The transmission system, however, sees operating conditions that are influenced and impacted by so many outside forces that the transmission operator is in a reactionary mode to try to control loadings on elements in the system. Another difference is that if the generator overloads some element in its facility, the maximum impact to the system is that the generator trips. This is no different an outcome to the transmission system than if the generator tripped for any other reason. A loss of transmission system elements, however, can lead to other issues and in the worst case result in cascading and system separations or blackouts.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> | | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| Georgia Transmission Corporation | Yes | |

| Organization | Yes or No | Question 1 Comment |
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| Independent Electricity System Operator | Yes | |
| Manitoba Hydro | Yes | |
| NextEra Energy Resources | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. - Affiliates | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| Georgia System Operations Corporation | Yes | Gives the Generator Owner choice of methodology. |
| Response: The FR SDT thanks you for your comment. | | |
| Dynergy Inc. | Yes | R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify. |
| Response: The FR SDT thanks you for your comment. Based on other comments, the FR SDT has made some clarifying modifications to R1 and the additional comma proposed is no longer needed. The modifications made to R2 clarify that the intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical | | |

| Organization | Yes or No | Question 1 Comment |
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| <p>equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| US Bureau of Reclamation | Yes | <p>The text removed the ambiguity in what was to be included; however, the term “turbine” created a problem in the reference to “Turbine-Generators”. To start with, this would only apply to generators that have a turbine as prime mover. Photovoltaic or other non rotary sources would be excluded. This term could be construed as eliminating the power output rating of the turbine and only requiring the generator itself. To remove the potential problem with the use of this term, it is suggested that the section be rewritten as: “Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned power train equipment up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner):”</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1.</p> | | |
| Puget Sound Energy | Yes | <p>We understand R1 to be pertinent to the generating turbines up to the GSU transformer. R1 is utilized when the GO is the same entity as the TO. Please confirm we’ve interpreted this correctly.</p> |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT does not believe that you have interpreted this correctly. We have revised R1 and R2 to clarify the intent. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 1 Comment |
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| | | |

2. Do you agree that Requirement R1 allows more latitude for the Generator Owner in how he supports the technical basis for his generator Facility Ratings?

Summary Consideration: Most stakeholders agree that R1 allows more latitude for the Generator Owner in how it supports the technical basis for its generator Facility Ratings. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. Two stakeholders suggested that the standard should not apply to Generator Owners and that MOD standards more appropriately address the need for generator ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for establishing generator facility ratings because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase which said, “location as specified by the Generator Owner” and revised the requirement to better reflect the intent of R1 and R2. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 2 Comment |
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| Calpine Corporation | No | A clear statement of which equipment is to be rated (the electrical equipment from the generator to the point of interconnection) is needed. If the intent is to require that ratings be required based on anything other than the nameplate or calculated limits of the electrical equipment comprising the generating facility, such intent needs to be clearly stated in the Standard. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical</p> | | |

| Organization | Yes or No | Question 2 Comment |
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| <p>equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| SPS Energy | No | Latitude cannot be confused with wider ambiguity. It remains unclear how a backed-into calculation can possibly be superior to actual operational data. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT does not contend that it is. If a Generator Owner wished to use operational data to document its Facility Rating, that is perfectly acceptable under the requirements (see specifically Requirement R1, Part 1.1, second bullet Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.)</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to question 6 comments.</p> | | |
| NERC Standards Review Subcommittee | No | Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO. |
| Xcel Energy | No | Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> | | |

| Organization | Yes or No | Question 2 Comment |
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| <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| PJM | No | The requirements of MOD-024 and MOD-025 for validation should be the only basis for rating generators. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for establishing generator facility ratings because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> | | |
| RRI Energy Inc | No | <p>We do not believe that this standard should be applicable to generators. Every unit is designed with the over sight of a responsible AE that has to hold proper credentials such as ASME boiler certification and must follow a host of regulations. They also must employ PE's that must sign off on the design. The unit must apply for an IA with it's TO so that the TO can do an impact study. The generator must comply with all the requirements mandated by the TO in order to get an IA. The generator will conduct unit commercial tests to insure that unit is capable of the output specified in the unit design contract. Once commercial the output of the generator is continuously monitored by the TOP/RC. This is also true if the generator decides to up grade the unit. It must follow the same path that it did when it built the unit. There can not be any surprises. In addition there are standards and market protocols that require a generator to communicate unit capabilities to the RC/BA or TOP. Most notably in TOP-002-2a requirement R3: Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Also in IRO-005 measure 9: The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1) In order for the RC to comply it will have to get unit capabilities from the generator. Note that this requires the generator to report actual capabilities not a calculated number based on a rating methodology. In areas where there are organized markets a generator must offer the unit to the market operator indicating what the unit is capable of producing for the next day market. Market rules require the</p> |

| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| | | generator to immediately report any unit de-rates. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. The process / documentation that you mention above is an acceptable method to meet R1 and R2.</p> | | |
| AEP | Yes | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| E.ON U.S. | Yes | |
| Electric Market Policy | Yes | |
| Florida Municipal Power Agency, and its Member Cities | Yes | |
| Georgia Transmission Corporation | Yes | |
| Independent Electricity System Operator | Yes | |
| IRC Standards Review Committee | Yes | |
| Manitoba Hydro | Yes | |
| NextEra Energy Resources | Yes | |

| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| Northeast Power Coordinating Council | Yes | |
| Ontario Power Generation | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. - Affiliates | Yes | |
| Puget Sound Energy | Yes | |
| RRI Energy | Yes | |
| SCE&G | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of Reclamation | Yes | |
| Arizona Public Service Co. | Yes | But should also explicitly allow for the regulatory environmental constraints which may be long term vs. the identified short term derate as indicated by operational limitations. |
| Response: The FR SDT thanks you for your comment. The items that you mention are covered in Requirement R2, Part 2.2.4 and | | |

| Organization | Yes or No | Question 2 Comment |
|---|-----------|---|
| Requirement R3, Part 3.2.4 – “Operational Limitations” | | |
| Dynergy Inc. | Yes | However, the wording "do not exceed" in R1.2 needs to be replaced by "corresponds to". This is a critical wording change. The new suggested wording is required or the "black box" concept discussed in the Background Section is no longer valid. |
| Response: The FR SDT thanks you for your comment. The point of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. | | |
| Ameren | Yes | It does provide options. |
| Response: The FR SDT thanks you for your comment. | | |
| Georgia System Operations Corporation | Yes | None. |
| Great River Energy | Yes | R1 appears to be giving more latitude for meeting compliance. |
| Response: The FR SDT thanks you for your comment. | | |
| FirstEnergy | Yes | While R1 provides more latitude, it could lead to unintentional problems. As written, it appears that the generator owner can unilaterally choose the boundary of the generator facilities that may not align with agreements. We suggest that the requirement be re-written to require the generator owner simply rate all BES facilities that they own up to the point of their transmission interconnection with the host transmission owner. This boundary should be well understood via contracts or agreements between the two parties. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the parenthetical phrase which said, “location as specified by the Generator Owner.” The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology)</p> | | |

| Organization | Yes or No | Question 2 Comment |
|--|-----------|--------------------|
| of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following: | | |

3. Do you agree that the ‘black-box’ approach (please refer to the background material above) for providing generating unit Facility Ratings provides the Facility ratings that can be “...used in the reliable planning and operation of the Bulk Electric System...?”

Summary Consideration: Several commenters suggested that the black box approach led to more confusion for the requirements rather than clarifying them as the FR SDT intended. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 3 Comment |
|------------------------------------|-----------|---|
| NERC Standards Review Subcommittee | No | <p>A. The location of the boundary of the Facility (“black-box”) has no bearing on the reliability of the rating.</p> <p>B. MRO NSRS believes some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach may not be appropriate if there are multiple circuits within the black box.</p> <p>C. Is the black-box approach intended to address instances with distributed generation (e.g. diesels and wind farms) where generators are aggregated through one breaker?</p> |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| <p>Response: The FR SDT thanks you for your comment.</p> <p>A/B. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>C. yes</p> | | |
| Florida Municipal Power Agency, and its Member Cities | No | Not needed if the Facility Rating only applies to electrical equipment |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| PJM | No | R1 still requires ...documentation for determining the facility ratings... That's not a black box approach. R1.1 requires further details that also diverge from a black box approach. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 3 Comment |
|---|-----------|--|
| SPS Energy | No | See answer to Question 2. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Question 2.</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Question 6.</p> | | |
| RRI Energy Inc | No | See the comments to Question 2 and 3. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Question 2 and Question 3.</p> | | |
| Xcel Energy | No | The location of the boundary of the Facility (“black-box”) has no bearing on the reliability of the rating. |
| <p>Response: The FR SDT thanks you for your comment. The boundary is defined by the ownership of the Facility. The black box approach is designed to provide latitude in determining the Facility Ratings for generation facilities. R4 and R5 provide for “peer review” of the ratings to ensure the reliability of the rating.</p> | | |
| Calpine Corporation | No | There is no benefit to evaluating the generation facility as a “Black Box”. Ratings of the electrical equipment from the generator to the point of interconnect should be evaluated and the most limiting element based on their electrical characteristics should provide the basis for the electrical rating of the facility. FAC-00802 should not be interpreted to require any non-electrical equipment ratings. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT agrees with your comments. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have deleted the word, “turbine” from R1 and revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings</p> | | |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| <p>methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> | | |
| Ameren | No | <p>Typically the Generator facilities are not part of the BES so it is not clear how these ratings would impact reliability planning.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator rating (as defined by the Generator Owner) and R2 includes the documentation of electrical equipment rating from the generator to the point of interconnection. The ratings are used in planning studies.</p> | | |
| IRC Standards Review Committee | No | <p>We believe some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach is not appropriate.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| FirstEnergy | No | <p>We do not agree with this approach because the intent of this standard is not clear with regard to the traditional generator facilities. Is the intent of this standard to ensure that electrical infrastructure owned by the generator owner is sufficiently sized to handle the maximum generation output, or is it to provide a generator rating for use in planning and operations? If it is the latter, the rating that is established may be overstated and not proper for use in planning and operations models, if the rating is based solely on electrical parameters.</p> |

| Organization | Yes or No | Question 3 Comment |
|---|-----------|---|
| | | <p>In R1, there is no consideration for operating limits that may occur due to mechanical limitations (i.e tube leak). The SDT should consider adding to R1 a similar requirement as stated in sub-part 2.2.4 of requirement R2 with regard to operating limitations. This issue could be a problem for an entity that would choose sub-part 1.1.1 over sub-part 1.1.2 in their facility rating determination. For an entity that chooses sub-part 1.1.2 of R1, it is not clear how sub-part 1.2 would be satisfied.</p> <p>The inclusion of 1.2 seems to force an entity to use 1.1.1. To resolve this, we suggest that a minimum timeframe for consecutive operating hours during testing or operational tracking be established that when used in 1.1.2 would also be understood to meet sub-part 1.2. Lastly, sub-part 1.1.2 is lacking in that the item says that operational information "may" be supplemented by engineering analysis. FE suggests that R1 should also mirror sub-parts 2.2.1 through 2.2.3 of requirement R2 to account for engineering analysis that should be required or expected.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine’ to clarify that the requirement only applies to electrical facilities and not items such as tube leaks. The time horizon for R1 is long term planning, not real-time operations. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>We have also revised Requirement R1, Part 1.2 to address your concern:</p> <p style="padding-left: 40px;">The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> | | |
| AEP | Yes | |
| Arizona Public Service Co. | Yes | |

| Organization | Yes or No | Question 3 Comment |
|---|-----------|--------------------|
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| Dynergy Inc. | Yes | |
| E.ON U.S. | Yes | |
| Georgia Transmission Corporation | Yes | |
| Independent Electricity System Operator | Yes | |
| Manitoba Hydro | Yes | |
| NextEra Energy Resources | Yes | |
| Northeast Power Coordinating Council | Yes | |
| Ontario Power Generation | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. | Yes | |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| - Affiliates | | |
| Puget Sound Energy | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of Reclamation | Yes | |
| Georgia System Operations Corporation | Yes | Allows definition of the “Boundaries” of the plant (“Black-box”). |
| Response: The FR SDT thanks you for your comment. | | |
| Electric Market Policy | Yes | As noted in the background material in paragraph 3 on page 2 of 5, this approach allows latitude for the Generator Owner to define the “boundary” of the generating unit Facility (“black-box”) as either the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer “presumably chosen by the Generator Owner to be consistent with the change in ownership point between the Generator and Transmission Owners.” |
| Response: The FR SDT thanks you for your comment. | | |
| SCE&G | Yes | The boundaries of the blackbox must be clearly defined |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned</p> | | |

| Organization | Yes or No | Question 3 Comment |
|--------------|-----------|---|
| | | <p>generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> |

4. Do you agree that the selection of “generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer” in Requirement R1 provides sufficient latitude to the Generator Owner? If not, provide please suggest other or additional locations.

Summary Consideration: Several stakeholders suggested better clarity to the requirements was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 4 Comment |
|--|-----------|---|
| Electric Market Policy | No | As noted in Question 1, Requirement 1 should be expanded to include: “consistent with the change in ownership between the Generator and Transmission Owners.” |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 4 Comment |
|--|-----------|---|
| E.ON U.S. | No | E.ON U.S. believes that this requirement is adequately addressed by R1 and therefore redundant |
| <p>Response: The FR SDT thanks you for your comment. We have revised R1 and R2 to provide clarity.</p> | | |
| Florida Municipal Power Agency, and its Member Cities | No | If Facility Ratings only apply to electrical equipment of a power plant, then the “black box” is not needed, and the various boundaries to the “black box” are not needed. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator rating (as defined by the Generator Owner) and R2 includes the documentation of electrical equipment rating from the generator to the point of interconnection.</p> | | |
| Ameren | No | It seems there should be a common point of demarcation. It is not clear what the justification would be for selecting one point over another. It seems that common point should be the Point of Interconnection with the transmission system. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Ontario Power Generation | No | Please see the response to Q1. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q1.</p> | | |
| FirstEnergy | No | See our comments in Question 2. |

| Organization | Yes or No | Question 4 Comment |
|--|-----------|---|
| Response: The FR SDT thanks you for your comment. Please see response to Q2. | | |
| RRI Energy Inc | No | See the comments to Question 2 and 3. |
| Response: The FR SDT thanks you for your comment. Please see response to Q2 and Q3. | | |
| SPS Energy | No | See answer to Question 2. |
| Response: The FR SDT thanks you for your comment. Please see response to Q2. | | |
| Northeast Power Coordinating Council | No | The rating of the generator should be at the generator terminals, with the requirement that the unit service load (if drawn between the generator terminals and the low side of the generator step-up transformer) and the generator step-up transformer impedances are explicitly shown. If measured at the high side of the generator step-up transformer, the rating is a net output rating that may not reflect the physical limits and characteristics of the generator, unit service load, and transformer losses. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Independent Electricity System Operator | No | We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure: a. It has documentation on the rating of that part of equipment associated with the generating unit, and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner. We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including “or the high side terminal of the step up transformer” in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the |

| Organization | Yes or No | Question 4 Comment |
|---|-----------|---|
| | | methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant. |
| IRC Standards Review Committee | No | We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure that: a. It has documentation on the rating of that part of equipment associated with the generating unit (R1), and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner (R2). We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including “or the high side terminal of the step up transformer” in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant. |
| <p>Response: The FR SDT thanks you for your comment. It can be covered in either requirement, depending on ownership. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| AEP | Yes | |
| Arizona Public Service Co. | Yes | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| Georgia | Yes | |

| Organization | Yes or No | Question 4 Comment |
|--------------------------------------|-----------|--------------------|
| Transmission Corporation | | |
| Great River Energy | Yes | |
| Manitoba Hydro | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. - Affiliates | Yes | |
| PJM | Yes | |
| Puget Sound Energy | Yes | |
| SCE&G | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of | Yes | |

| Organization | Yes or No | Question 4 Comment |
|---|-----------|---|
| Reclamation | | |
| Georgia System Operations Corporation | Yes | Allows for different ownership points. |
| Response: The FR SDT thanks you for your comment. | | |
| NextEra Energy Resources | Yes | For clarification, NextEra Energy Resources (NextEra) would like to see the designation of “step up transformer” changed to “main step up transformer”. Wind turbine generator facilities have multiple step up transformers in the electrical system from a single generator to the point of interconnection. There is a small low voltage step up transformer at each wind turbine and there is a large high voltage main step up transformer which steps the voltage from all the wind turbines at the site voltage up to the transmission voltage level. At an individual wind turbine site, there may be >200 of the smaller step up transformers at the individual wind turbines which all connect to the larger main step up transformer. Wind turbine sites are an intermittent generating asset and the site load is not normally dispatchable. The individual generators are usually not dispatched, but the entire site is operated as a single generating asset. Our method is to rate the entire site as a single generator Facility with the black box boundary at the main step up transformer. By including this additional terminology, it would allow sites with multiple step up transformers in there electrical energy delivery system the latitude to identify the appropriate black box boundary for the generator Facility. |
| Response: The FR SDT thanks you for your comment. We concur with your suggested revision and have changed R1 to: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. | | |
| Dynergy Inc. | Yes | See Comment on response to Question #1. R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify. |
| Response: The FR SDT thanks you for your comment. Please see response to Q1. R1 was revised and obviated the need for the comma. | | |
| Constellation Power Source | Yes | See response to Question 6 below. |

| Organization | Yes or No | Question 4 Comment |
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| Generation, Inc. | | |
| Response: The FR SDT thanks you for your comment. Please see response to Q6. | | |
| Calpine Corporation | Yes | These points of interconnection are reasonable “cut points” for a generating unit’s rating of electrical equipment. |
| Response: The FR SDT thanks you for your comment. | | |
| Xcel Energy | Yes | Xcel Energy did not see this as an issue (we have always used the high side of the GSU Transformer as the boundary in the past). |
| Response: The FR SDT thanks you for your comment. | | |

5. Do you agree that Requirement R2 properly addresses the rating responsibilities of generator owned Facilities outside the ‘black box’ that are not addressed (or not able to be addressed) in Requirement R1?

Summary Consideration: Several stakeholders suggested that Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3. We have revised Requirement R2, Part 2.4.2 to “The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.”

Still other stakeholders suggested that more clarity for R2 was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection.

We have revised R2 to:

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 5 Comment |
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| Ameren | | : It is difficult to provide a comment when you cannot interpret the question. R1 is about documentation and R2 is about the methodology. The Documentation should support the methodology. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 5 Comment |
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| Dynergy Inc. | No | <p>1. Section 2.2.3 needs to be eliminated. Conductor temperature rather than ambient conditions are typically considered when establishing equipment ratings.</p> <p>2. The footnote to Section 2.2.4 should be eliminated. It is not practical to develop ratings that take into account the myriad of conditions that could result in "temporary de-ratings" of equipment. In addition, such "temporary de-rating" values would not be used in planning or operational studies.</p> <p>3. The word "respect" in section R2.3 should be changed to "corresponds to".</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <ol style="list-style-type: none"> Ambient Conditions are part of the underlying assumptions, however this was included in the standard at stakeholder request as a result of a Blackout Recommendation in a prior version of the SAR. Temporary deratings can be used in operational studies. The standard only requires documenting how the methodology considers temporary equipment impairment. An example could be the loss of coolers on a transformer. The point of Requirement R2, Part 2.3 is to make sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not "correspond to". | | |
| SPS Energy | No | <p>Assume 2.1.3 is a performance test</p> <p>2.2.3 This is unclear and should be revised. Ambient conditions for gas turbine powered generators are represented by an infinite number of points on a curve that plots temperature and humidity. How many of these would comprise an "average"</p> <p>2.3 Should be deleted. It does not contribute to reliability.</p> <p>2.4 Should be split into transmission equipment and generator equipment. There is no need to perpetuate the confusion of the industry in attempting to sort out the NA from the applicable pieces of equipment that apply to Transmission Owners or Generator Owners. 2.4 Is the implication that only electrical equipment is to be considered limiting elements true? What about turbines, gearboxes, cooling systems, scrubber systems, fuel systems, etc? Also, R1 states that the Generator Owner has the option of choosing a scope for its facility that excludes the GSU. This is inconsistent with 2.4 that says transformers shall be included in the scope. Need to pick a direction.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word "turbine" to clarify that Requirement R1 only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have</p> | | |

| Organization | Yes or No | Question 5 Comment |
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| <p>revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> <p>Requirement 2, Part 2.3 specifies that a “Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility”. The FR SDT believes that analyzing all components of a facility is important to developing a rating for that facility and respecting the most limiting component is necessary for reliable ratings.</p> <p>Requirement R2, Part 2.4 deals with items NOT covered in R1. Having “transformers” shown in Requirement R2, Part 2.4 does not include the GSU.</p> | | |
| AEP | No | Facility Ratings Methodology (FRM) is not a defined NERC term and should, therefore, be defined. |
| <p>Response: The FR SDT thanks you for your comment. We have changed “Methodology” to “methodology”.</p> | | |
| Ontario Power Generation | No | R2 is largely redundant as it may apply only to some rare ownership arrangements, few and far between. In our view there is little value in burdening the standard with such a complex set of requirements only to address few odd cases. |
| <p>Response: The FR SDT thanks you for your comment. As you suggest R2 may only apply in some cases. It is therefore necessary to have R2 to prevent “gaps”.</p> | | |
| Calpine Corporation | No | R2 properly addresses appropriate ways all electrical components from the generator to the point of interconnection should be rated, which should be the entire scope of the Standard. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up</p> | | |

| Organization | Yes or No | Question 5 Comment |
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| <p>transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| RRI Energy | No | R2.2 documentation requirements are excessive and unjustifiable for the application of existing facilities that may have successfully and reliably operated for decades without the specific details formally documented on this level. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT and the majority of industry commenters do not share your assertion that Requirement R2, Part 2.2 documentation is excessive.</p> | | |
| Electric Market Policy | No | Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3. |
| <p>Response: The FR SDT thanks you for your comment. We have revised Requirement R2, Part 2.4.2 to “The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.”</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q6.</p> | | |
| Puget Sound Energy | No | We believe that Point of Interconnection is not the correct point of demarcation for R2. Point of Ownership seems more appropriate as R2 seems as if it would be utilized by a GO that is not the same as the TO. Point of interconnection is not the same as point of ownership and therefore could imply a GO must determine ratings for transmission facilities between point of ownership and point of interconnection that it doesn't own. |
| <p>Response: The FR SDT thanks you for your comment. We revised R2 to:</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Arizona Public | Yes | |

| Organization | Yes or No | Question 5 Comment |
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| Service Co. | | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| FirstEnergy | Yes | |
| Florida Municipal Power Agency, and its Member Cities | Yes | |
| Georgia Transmission Corporation | Yes | |
| Independent Electricity System Operator | Yes | |
| Manitoba Hydro | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| Northeast Power Coordinating Council | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |

| Organization | Yes or No | Question 5 Comment |
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| Pepco Holdings, Inc. - Affiliates | Yes | |
| PJM | Yes | |
| SCE&G | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of Reclamation | Yes | |
| Xcel Energy | Yes | |
| NextEra Energy Resources | Yes | For clarification, NextEra would like to see the words “the point of interconnection” changed to “the point of interconnection or change in ownership”. We have some sites where the point of interconnection is defined separately from the point on change in ownership. Although it may be implied that the point of interconnection is actually a point of change in ownership, we think the clarification is warranted. |
| <p>Response: The FR SDT thanks you for your comment. We revised R2 to:</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Great River Energy | Yes | GRE agrees that the GO must now have two sets of facility ratings. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |

| Organization | Yes or No | Question 5 Comment |
|--|-----------|--|
| IRC Standards Review Committee | Yes | However, it is not clear that it is necessary. Shouldn't a Generation Owner that owns transmission equipment on the high side of the generation step up transformer be registered as a Transmission Owner? |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT can not address registration issues and we refer you to the NERC documents on registration.</p> | | |
| Georgia System Operations Corporation | Yes | Seems general enough with responsibility on the Generator Owner to fully include all such facilities. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |

6. If you have any other comments on this standard that you have not already submitted above, please provide them here.

Summary Consideration: Several stakeholders pointed out that there are 2 sets of VSLs for R3. The first set is for R3 and the second set is for R4. The FR SDT corrected this error.

Other stakeholders suggested revising Requirement R2, Part 2.3 to change the word “respect” to “reflect” or “corresponds to”. The FR SDT disagrees because the intent of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons. Similar comments were received regarding Requirement R3, Part 3.3.

Several commenters suggested revisions to the VSLs. The FR SDT agreed and made the suggested revisions unless they were no longer applicable due to revisions to the requirement. It was also suggested that Requirement R7 should include Transmission Owner(s). The FR SDT agrees and has made the revision.

One commenter noted the following: *We note that the consideration of comments to the August comments stated that “The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. “ However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.*

The FR SDT revised the VRF’s to lower for R1 and R2.

| Organization | Question 6 Comment |
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| Independent Electricity System Operator | (1) R1.1.2: The phrase “any of which may be supplemented by engineering analyses” does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. (2) There are 2 sets of VSLs for R3. We believe the second R3 should read R4. |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1) We disagree. Removal of the phrase will not allow the flexibility of using engineering analysis for compliance with the requirement.</p> <p>2) We concur and have made the suggested revision.</p> | |
| Electric Market Policy | 1. Applicability - The bullets should be removed and the format should be consistent with the rest of the Standard. |
| <p>Response: The FR SDT thanks you for your comment. Agreed. This change has been made in the revised standard.</p> | |

| Organization | Question 6 Comment |
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| Duke Energy | <ol style="list-style-type: none"> 1. The Background Information statement on the Comment Form describing the “black box” approach generally makes sense. But the references to other equipment limiting generator voltage rating or thermal output are confusing. Also the Implementation Plan should clearly reflect use of the “black box” approach. 2. Requirement R2.3 - change the word “respect” to “reflect”. 3. Requirement R2.4 Delete this requirement because the scope is already established in R2. Importantly, R2.4 could be interpreted to require an entity to provide a master checklist of every kind of device imaginable in order to prove that the scope of equipment addresses everything postulated by the phrase “shall include, but not limited to”. 4. The bulleting format under R3 is mangled. R3.1.3 should be “A practice that has been verified by testing or engineering analysis.” 5. R3.3 - change the word “respect” to “reflect”. Also strike the phrase “The process by which the Rating of equipment that comprises a Facility is determined.” because this IS your Rating Methodology. 6. R3.4 “ Strike the phrase “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.” because the scope is already established in R3. 7. R3.4.2 should become the new R3.4 8. Measures “ Change 2.4 to 2.3 under M2. Delete “3” under M4. Delete “4” under M5. 9. R1 VSLs Delete the Moderate VSL, because if your documentation doesn’t contain either 1.1.1 or 1.1.2 this is the same as not having documentation, which is the Severe VSL. 10. R2 VSLs In all four VSLs, 2.1.1 through 2.1.3 should be replaced with just 2.1, because 2.1 says your methodology must be consistent with at least ONE of the following (i.e. 2.1.1, 2.1.2 or 2.1.3). Under the High VSL, reword the phrase “The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4” with this phrase “The Generator Owner’s Facility Rating methodology did not address all of its solely and jointly owned equipment as required by R2.” 11. R3 VSLs In all four VSLs, 3.1.1 through 3.1.3 should be replaced with just 3.1, because 3.1 says your methodology must be consistent with at least ONE of the following (i.e. 3.1.1, 3.1.2, or 3.1.3). Under the High VSL, 3.4.1 and 3.4.2 should be replaced with just 3.4, for consistency with our comment about R3.4 above. 12. R4 VSLs Change R# to R4 from R3 (three places). The wording of all four VSLs should be revised to be consistent with the Requirement (Generator Owners may only have documentation and not a methodology). Moderate VSL insert the phrase “more than” after the word “within” to eliminate the time overlap with the Lower VSL. 13. R7 VSLs The Lower VSL should be eliminated because the requesting entities may request an unreasonable |

| Organization | Question 6 Comment |
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| | <p>schedule (i.e. instantaneous request). Suggest moving the Moderate VSL to Lower, the High VSL to Moderate, the Severe VSL to High and cap it at 45 days, and create a new Severe VSL for more than 45 days late.</p> |
| | <p>Response: The FR SDT thanks you for your comment.</p> <ol style="list-style-type: none"> 1. Thank you for your comment. We have revised R1 and R2 for clarity on this issue. 2. The point of Requirement R2, Part 2.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “correspond to”. 3. This corresponds to Requirement R3, Part 3.4 for transmission equipment. Stakeholder consensus indicates that Requirement R2, Part 2.4 should be retained. 4. We have corrected the format. 5. The point of Requirement R3, Part 3.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “reflect”. The phrase that you suggest deleting is actually Requirement 3, Part 3.4 and not a part of Requirement 3, Part 3.3. It is the lead in for Parts 3.4.1 and 3.4.2 and should remain in the standard. 6. Stakeholder consensus indicates that Requirement R3, Part 3.4 should be retained. 7. Requirement R3, Part 3.4 was retained and thus Requirement R3 Part 3.4.2 shall remain. 8. Measures were revised to be consistent with revisions to the requirements. 9. The documentation could include an analysis of the most limiting facilities but not address either Part 1.1.1 or 1.1.2. We will retain the moderate VSL. 10. We revised the VSLs as suggested except for the High VSL. There are now 2 parts for Requirement R2, Part 2.4, so the High VSL is appropriate as written. 11. We revised the VSLs as suggested and to be consistent with the requirement revisions. 12. We revised the VSLs as suggested and to be consistent with the requirement revisions. 13: The FR SDT disagrees with removing the lower VSL. |
| <p>Dynegy Inc.</p> | <ol style="list-style-type: none"> 1. The word "respect" in Section R3.3 should be changed to "corresponds to". 2. R4 and R5 should require the GO to have both its "documentation" (related to R1) and its Facility Ratings Methodology (relate to R2). 3. All of the wording in the "Background Information" section that refers to the facilities between the high side of the GSU and the Point of Interconnection with the utility that are owned by the GO as "Transmission Facilities" should be |

| Organization | Question 6 Comment |
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| | <p>removed. NERC has not officially classified these "Generator Interconnection Facilities" as "Transmission Facilities". In addition, the recent recommendations of the GOTO NERC Ad Hoc Task Force state that these types of facilities should not be considered "transmission facilities".</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1) The point of Requirement R3, Part 3.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “correspond to”.</p> <p>2) We concur and have made the suggested revisions.</p> <p>3) We have revised R1 and R2 to address your concern. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> | |
| <p>FirstEnergy</p> | <p>1. While R7 is similar to language in existing Requirement R2 of FAC-009-0, this requirement is somewhat duplicative of with requirements of MOD-010. Additionally, rather than potentially sending information to four different parties and four different schedules the team should consider a progression of information needed for operations being provided to the TOP and then the TOP updating the RC and for planning the information being provided to the TP and then the TP updating the PC.</p> <p>2. Under section 4 (Applicability), replace bullets with 4.1 and 4.2 for consistency with other standards.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1) The FR SDT believes it is the responsibility of the TO and GO to ensure that those parties that have a need for their ratings actually gets that rating information. Having a chain places the onus on other entities.</p> <p>2) The applicability section of the standard has been changed as suggested.</p> | |
| <p>NERC Standards Review</p> | <p>A. The MRO NSRS believes the ratings developed in accordance with MOD-024 and MOD-025 are more accurate and appropriate for purposes of modeling, planning and operation. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008.</p> |

| Organization | Question 6 Comment |
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| Subcommittee | <p>Additionally, FAC-008 R1 appears redundant with what is already required per MOD-024 and MOD-025, and should therefore be deleted.</p> <p>B. R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says “The documentation shall contain at least one of the following”. It doesn't say “the documentation shall contain BOTH of the following”. Since compliance is evaluated at the requirement level, and both of these are NOT required, the MRO NSRS feels these subrequirements should be bulleted.</p> <p>C. The MRO NSRS feels the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1, above. The corresponding measures should also be modified to correctly reflect that not “all of the items” in Parts 2.1 and 3.1 have to be included.</p> <p>D. Concerns were previously expressed about documentation of the basis for ratings of older facilities. The MRO NSRS appreciates the drafting team's response which indicated that this “Standard does not require the recreation of data that is no longer available or no longer accessible for any reason.” However, no modifications were made to the requirements to clarify this. The MRO NSRS feels the standard should be clear about expectations. Since it is not understood how, or if, the drafting team's responses could be used to clarify the intent of the requirement during an audit, the MRO NSRS feels it is critical that specific language be included. Thus, the MRO NSRS recommends either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2.</p> <p>E. The phrase “Ratings of the Equipment” used in R2.1 and R3.1 should be modified, as there is no such term in the NERC Glossary of Terms. “Rating” and “Equipment Rating” are both defined terms. Yet, “Equipment” and “Ratings of Equipment” are not.</p> <p>F. The reference to R2.1 in R3.2 should be changed to R3.1.</p> <p>G. In R7, recommend changing “as scheduled” to “as requested”.</p> |
| Xcel Energy | <p>A. FERC approval aside, Xcel Energy believes that facility verification, as required under NERC-approved standards MOD-024 and MOD-025, provides a more accurate value for the purposes of planning and operation. Xcel Energy has been following the guidelines of the Regional Entities in its three operating regions (MRO, SPP, and WECC) for performing these verifications for multiple decades. It is the information obtained from the verification tests that is used for reporting to the NERC GADS system, to Transmission Planning for use in load flow studies, and to Transmission Operations for real-time operation. The nameplate design value that results from a FAC-008 analysis is of value only for long-range planning prior to construction or operation of a new facility. We fail to see how reliability is enhanced when there are two different numbers being reported that describe the same facility rating. Therefore, we feel R1 should be deleted from the standard. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008.</p> |

| Organization | Question 6 Comment |
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| | <p>B. If R1 is retained, R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says “The documentation shall contain at least one of the following”. It doesn’t say “the documentation shall contain BOTH of the following”. Since compliance is evaluated at the requirement level, and both of these are NOT required, we feel they should be bulleted.</p> <p>C. If R2 is retained, we feel the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1 above. The corresponding measures should also be modified to correctly reflect that not “all of the items” in Parts 2.1 and 3.1 have to be included.</p> <p>D. Xcel previously expressed concerns about documentation of the basis for ratings of older facilities. We appreciate the drafting team’s response which indicated that this “Standard does not require the recreation of data that is no longer available or no longer accessible for any reason.” However, no modifications were made to the requirements to clarify this. We feel the standard should be clear about expectations. Since it is not understood how, or if, the drafting team’s responses could be used to clarify the intent of the requirement during an audit, we feel it is critical that specific language be included. If R2 is retained, we recommend either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2.</p> <p>E. The phrase “Ratings of the Equipment” used in R2.1 and 3.1 should be modified, as there is no such term in the NERC glossary. “Rating” and “Equipment Rating” are both defined terms. Yet, “Equipment” and “Ratings of Equipment” are not.</p> <p>F. The reference to R2.1 in R3.2 should be changed to R3.1.</p> <p>G. In R7, recommend changing “as scheduled” to “as requested”.</p> |
| <p>Response: The FR SDT thanks you for your comment. A) Using a rating acquired via testing is an acceptable method for complying with R1.</p> <p>B. The FR SDT agrees, and has changed what had been numbered as 1.1.1 and 1.1.2 to bullets.</p> <p>C. The FR SDT agrees, and has changed what had been numbered as 2.1.1 and 2.1.2 and 2.1.3 to bullets – and made a similar change to convert the numbered items under 3.1 to bullets.</p> <p>D. Requirement R1, Part 1.1.2 (now a bulleted item in the revised standard) applies to generation equipment. R2 and R3 apply to non-generator equipment. It is not appropriate to apply Requirement R1, Part 1.1.2 (now a bulleted item in the revised standard) to R2 and R3.</p> <p>E. Revised to “Ratings of equipment”</p> <p>F. We concur and have made the revision.</p> <p>G. “as scheduled” better reflects the intent of the requirement. Use of “as requested” might imply that an entity must respond</p> | |

| Organization | Question 6 Comment |
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| <p>immediately. This is not the intent of the requirement.</p> | |
| <p>IRC Standards Review Committee</p> | <p>a. R1.1.2: The phrase “any of which may be supplemented by engineering analyses” does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. b. There are 2 sets of VSLs for R3. We believe the second R3 should read R4.</p> |
| <p>Response: The FR SDT thanks you for your comment. a) The FR SDT feels that this statement provides needed clarification and will retain the language. b) We agree and have revised the numbering.</p> | |
| <p>CenterPoint Energy</p> | <p>CenterPoint Energy believes Requirement 7 should include Transmission Owner(s) in the listing of associated entities that should be provided with Facility Ratings; that is, a Generator Owner should provide ratings to the associated Transmission Owner. This is needed as a Transmission Owner cannot accurately develop ratings, which must be based on the most limiting series equipment, for its Transmission Line elements without knowing the ratings of series line equipment in an interconnecting switchyard owned by a Generator Owner.</p> |
| <p>Response: The FR SDT thanks you for your comment. We concur and have added Transmission Owner to the requirement.</p> | |
| <p>Constellation Power Source Generation, Inc.</p> | <p>Constellation Power Source Generation, Inc. (CPSGI) agrees in principle with the comments filed by RRI Energy in response to questions 1 - 5 above.</p> |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to questions 1-5 above.</p> | |
| <p>Great River Energy</p> | <p>GRE does not believe that the SDT has achieved their goal of adequately conveying to the GO that they are not required to have two sets of Facility Ratings. It appears that it is a requirement to have two sets of Facility Ratings. One set for the "black box" portion of the plant up to either the generator terminals, the low side of the GSU or the high side of the GSU and one set for from wherever the first set of Facility Ratings ended up to the point of interconnection with the with the TO.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator</p> | |

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| <p>Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | |
| <p>RRI Energy Inc</p> | <p>In the background information the SDT states: The SDT also notes that FAC-008-1 is FERC approved and enforceable, while neither MOD-024 nor MOD-025 has been approved by FERC. Therefore, the SDT is of the opinion that Generator Owners cannot be “exempted” from the Requirements, or the intent, of FAC-008 regardless of the views of being possibly duplicative to other standards (either MOD-024 or MOD-025). We do not agree with this opinion. Once submitted and approved by FERC won't this standard replace any existing FAC-008? Based on the SDT's logic the industry could never propose a change to a FERC approved standard. Standards that are cast in concrete will hinder improvements in reliability because they will not be able to change with technology and operating experience.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> | |
| <p>SERC Planning Standards Subcommittee</p> | <p>In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 states that the methodology shall be consistent with at least one of 2.1.2, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3.</p> |
| <p>Response: The FR SDT thanks you for your comment. We agree and have made the suggested edit.</p> | |
| <p>SPS Energy</p> | <p>Is the facility rating exercise considered an actual "event" that occurs at a certain time on a certain date, much like the RBA in CIP-002-2? Should it be performed periodically? Or is performing the exercise one time sufficient? There is no periodicity in the standard, which contributes to the ambiguity. How many instances of tests or backed-into calculations would satisfy the need to consider ambient conditions? In other words, over a twelve month period a facility can likely have 365 facility ratings depending on conditions. How many of these, if any, would be useful for planning or operations? Also, if it is an event, and the rating exercise took place on a day a cooling tower cell was out of service limiting the facility output by say 15%, then that would be the most limiting piece of equipment, on that day. But the cooling tower cell will be repaired. Would that repair then precipitate another facility rating exercise? In light of other standards requirements that mandate daily reporting of capability and periodic performance tests, the revised FAC-008-2 continues to be irrelevant to Generator Owners and dangerous to the BES if used for operational</p> |

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| | purposes. Generator Owners should be removed from the applicability for FAC-008-2. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” The requirements call for documentation of your ratings. Other requirements dictate the frequency of determining the ratings.</p> | |
| Manitoba Hydro | <p>Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3, R4 or R5. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R7). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R4) jeopardize the reliability of the system?</p> <p>The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems.</p> <p>A narrow interpretation of Requirement 2.2 and Requirement 3.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data.</p> <p>Manitoba Hydro recommends that Requirements 2.1, 2.2, 3.1 and 3.2 be revised as follows:</p> <p>R2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p style="padding-left: 40px;">R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p style="padding-left: 40px;">R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and</p> |

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| | <p>Electronics Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <p>R2.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3.</p> <p>R2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R2, Part 2.1 including identification of how each of the following were considered:</p> <p>R2.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>R3.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p>R3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>R3.1.2. 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).</p> <p>R3.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R3.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R3.1.1, R3.2 or R3.1.3.</p> <p>R3.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R3, Part 3.1 including identification of how each of the following were considered:</p> <p>R3.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> |
| <p>Response: The FR SDT thanks you for your comment. The VSL is only applied after a violation of the standard has been determined. We believe that you are confusing the violation risk factor with the violation severity level.</p> <p>Except for the verification component, adding this suggestion is redundant with 2.1.3 and 3.1.3. The words “a practice” include</p> | |

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| | <p>“operational experience” that show equipment loadings that equal the rating for the rating duration specified. The SDT believes such practice must be supportable via testing or engineering analysis. Your change would circumvent the verification. Operating Limitations (Part Requirement R2, Part 2.2.4, which you omitted) are part of the underlying assumptions for the rating methodology which should be considered.</p> |
| <p>Georgia System Operations Corporation</p> | <p>None.</p> |
| <p>Northeast Power Coordinating Council</p> | <ul style="list-style-type: none"> i. On page 1, regarding paragraph 1.2 under R1., the words “do not exceed” should be replaced with “correspond to”. ii. On page 2, regarding paragraph 2.3 under R2., the word “respect” should be replaced with “correspond to”. iii. On page 2, regarding R3., the second “each” in the first line should be deleted. iv. Also, in sub-paragraph 3.2 on p. 3, the reference to R2.1 should be a reference to R3.1. v. The sub-paragraphs under 2.2 and 3.2 repeat each other word for word with only one word of difference between Requirements R2 and R3: the use of “Generator” instead of “Transmission”. Suggest that those two Requirements be reviewed to see if they can be combined to eliminate duplication. vi. Sub-paragraph 3.4.1 on page 3 has no wording associated with it. |
| <p>Response: The FR SDT thanks you for your comment.</p> <ul style="list-style-type: none"> i. Point of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. ii. Point of Requirement R2, Part 2.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. lii and iv. We concur and have made the edits v. These requirements have been kept separate to ensure clarity of the intent of the requirements. vi. We have corrected the formatting error. | |
| <p>SCE&G</p> | <p>Phil Kleckly: In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 state that the methodology shall be consistent with at least one of 2.1.1, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3.</p> |

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| <p>Response: The FR SDT thanks you for your comment. We concur and have made the suggested edits.</p> | |
| PacifiCorp | <p>Please explain 2.2.4 and the footnote below. This is unclear. 2.2.4. Operating limitations.1 1 Such as temporary de-ratings of impaired equipment in accordance with good utility practice.</p> |
| <p>Response: The FR SDT thanks you for your comment. The footnote provides one example of Operating Limitations to consider in the Facility Ratings methodology. Other factors may include environmental or legal constraints on output or duration of generation.</p> | |
| Omaha Public Power District | <p>R2.4: Change “but not limited to” to “but not be limited to” to be consistent with R3.4.1.</p> <p>R3, first paragraph: Strike the second occurrence of the word “each”.</p> <p>R3.2, first paragraph: It appears that “R2.1” was intended to be “R3.1”.</p> <p>M3: Strike the second occurrence of the word “each”.</p> <p>M4: It appears that “Requirement 34” was intended to be “Requirement 4”.</p> <p>M4, M5, R4, and R5: M4 and M5 are inconsistent with R4 and R5 with regard to Generator Owners. R4 and R5 refer to a Generator Owner’s documentation for determining Facility Ratings but not its Facility Ratings Methodology, while M4 and M5 refer to a Generator Owner’s Facility Ratings Methodology but not its documentation for determining Facility Ratings.</p> <p>R5: If the first sentence of R5 is to retain the reference to a Generator Owner’s documentation for determining Facility Ratings, then it seems like the second sentence of R5 needs to be revised to also include a reference to the Generator Owner’s documentation for determining Facility Ratings.</p> <p>M6: Change “documentation used to develop its Facility Ratings” to “documentation for determining its Facility Ratings” to be consistent with the wording used in other parts of the standard.</p> |
| <p>Response: The FR SDT thanks you for your comment. We concur with your comments and have made the suggested revisions.</p> | |
| AEP | <ul style="list-style-type: none"> i. Suggest adding additional alternative, i.e. “performance history,” to R2.1.3. ii. Footnote 1 and 2 should be included in the requirement if it is to be applicable. We believe “temporary de-rates” should not be included in the equipment rating for R2.2.4. iii. R3.2 typo “R2.1” should be “R3.1.” iv. R3.4.1 should read “thermal capability of relay protective devices” instead of just “relay protective devices”, thus |

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| | <p>deferring to PRC-023 to address relay trip settings, since relay trip settings are not Facility Ratings.</p> <p>v. We do not believe that the change shown in R4 was necessary.</p> <p>vi. " R7 " Delete the phrase "modifications to existing Facilities and re-ratings of existing Facilities" since the term "existing Facilities" already covers the ratings that are there today or anything that may alter those ratings on those "existing Facilities" in the future.?</p> <p>vii. How do M1 and M2 differ from one another?</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>i. We concur and have added this to Requirement R2, Part 2.1.3 (Now the third bullet under Requirement R2, Part 2.1 in the revised standard.)</p> <p>ii. The footnote provides one example of Operating Limitations to consider in the Facility Ratings methodology. Other factors may include environmental or legal constraints on output or duration of generation.</p> <p>iii. We have made the suggested edit.</p> <p>iv. Requirement R3, Part 3.4.1 requires that the methodology include the "scope of equipment addressed" which includes the thermal capabilities of the relay as well as the relay settings.</p> <p>v. Revisions to R4 were required to reflect revisions in verbiage of R1 and R2.</p> <p>vi. We do not agree. The requirement provides needed clarity as written.</p> <p>vii. M1 applies to R1 (generator equipment); M2 applies to R2 (from generator to change in ownership of facilities)</p> | |
| <p>US Bureau of Reclamation</p> | <p>The measure M6 needs to be revised to be consistent with the proposed changes in R1. The term "evidence to show its Facility Ratings are consistent" might imply that an independent assessment of consistency is needed. Revising the language as follows would clarify the issue: "Each Transmission Owner and Generator Owner shall have as evidence its Facility Ratings which were developed with the documentation used to determine its Facility Ratings as specified in Requirement R1 or Facility Ratings which were developed utilizing its Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 6).</p> <p>"The Violation Severity Table also needs to be adjusted to remain consistent with R1. The following changes should be incorporated into the R6 for all levels. "The responsible entity failed to establish Facility Ratings utilizing the documentation used to determine its Facility Ratings as specified in R1 or Facility Ratings utilizing Facility Ratings Methodology as specified in R2 for X% or less of its solely owned and jointly owned Facilities. (R6)"</p> |
| <p>Response: The FR SDT thanks you for your comment. We concur and have made the suggested edits.</p> | |

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| Calpine Corporation | <p>The NERC Glossary of Terms Used in Reliability Standards defines the following: Facility “ A set of ELECTRICAL equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator, a shunt compensator, transformer, etc.) Facility Rating “ The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility. It would seem clear from the above definitions that a Facility Rating would apply ONLY to electrical equipment. For a generation facility, this would exclude the prime mover or other energy source or ancillary equipment that could limit the actual real power output of the Facility. Requirement R 1.1.2 allows a Generator Owner the option of establishing the Facility Rating up to the generator terminals or low or high side terminals of the step up transformer by providing the following documentation: Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analysis. Testing or historical performance isn’t sufficient to establish a Facility Rating without knowing the underlying Equipment Rating for each piece of Equipment which comprises the subject portion of the Facility. Since electrical equipment can be operated above its rating for an extended period of time without obvious damage, the fact that a Facility has demonstrated a particular real power flow does not establish that no individual piece of equipment is violating its rating, as required by the definition of Facility Rating. It’s possible to upgrade or replace a prime mover such that its capability is above the nameplate rating of the generator. In this instance, running the prime mover at its full capability is above the rating of the generator, unless the generator rating has also been increased, which should then have accompanying documentation. Other than the generator itself, all Equipment that makes up a Generation Facility is included in Transmission Facilities. Since the generator is just another piece of electrical equipment, with ratings for voltage, frequency, current, etc., there’s no reason to have separate requirements for Generation Facilities and Transmission Facilities. Based on comments received on the previous draft of the standard, there is a large body who believes that the Facility Rating for generation facilities is its capability to produce real or reactive power. There is also a contingent that believes the Facility Rating for generation facilities is the rating of the most limiting piece of electrical equipment. By inclusion of Requirements R 1.1.1 and R 1.1.2, the drafting team has allowed both definitions to be used at the Generator Owner’s discretion. As has also been pointed out in previous comments, the rating of the most limiting piece of electrical equipment and the capability of the prime mover are likely to be significantly different and are used for entirely different purposes. By allowing either to be provided to various entities as the Facility Rating, the end user does not know what they’re being provided. This could lead to erroneous results in planning and subsequent impacts on reliability. It’s recommended that the drafting team follow the NERC definition for Facility and Facility Rating and explicitly limit the scope to electrical equipment only. It’s recommended that this be clearly described in an appendix attached to the standard to eliminate the confusion that exists today. In addition, the appendix should refer to MOD-024 and MOD-025 as the standards which demonstrate the real and reactive power capability of the Facility, but do not represent a generation facility’s Facility Rating.</p> |

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| | <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. We believe that this will address your concern about “electrical” equipment only. This standard (FAC-008) allows performance testing or historical performance records as a means to determine facility ratings as provided in MOD-024 and MOD-025, therefore the FR SDT does not believe that there is a need to explicitly name those standards here.</p> |
| <p>RRI Energy</p> | <p>The primary basis given for maintaining the applicability of generator owners is that FAC-008-1 is a FERC approved standard, even though the standard was written at a time when few were paying attention to the requirements from a legally binding perspective. By this logic, the Standard requirements will last to infinity. There is no disagreement that Generator Owner facility ratings should be rated on a technically sound basis. The standard requirements are centered more on the excessive management of documentation rather than reliability of the BES. It is not justifiable to place the same level of documentation requirements to the radial components of a generator owner as those applied to the network components of a transmission system. The generator facilities are designed as projects by registered professional engineers and are connected to the transmission facility through an application process. Changes in unit output ratings must go through a similar process. Generator owner facilities are not subject to the dynamic and ever-changing conditions of a networked transmission system. Generating owners are expending unproductive resources to reverse engineer documentation of Facility Ratings at locations that have multiple decades of successful operation. No one is seriously questioning the ability of the generating units to deliver their specified outputs except for regulators in an audit conditions, that are finding non-compliance on documentation technicalities that have no material impact on the reliability of the BES.</p> |
| | <p>Response: The FR SDT thanks you for your comment. The requirement calls for documenting how facility ratings were determined. This may simply state that actual testing of the generator was used to determine the rating.</p> |
| <p>Southern Company</p> | <p>The wording in R3 (except for those generating unit Facilities addressed in R1) should say (except for those generating unit Facilities addressed in R1 and R2).</p> <p>The wording in R3.2 needs to be changed from “Equipment Ratings identified in R2.1” to “Equipment Ratings identified in R3.1.”</p> <p>To make the wording in the requirements consistent, the wording in R3.2 should be changed from “Equipment Ratings identified in R2.1” to read “Equipment Ratings identified in Requirement R3, Part 3.1.”</p> <p>Remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1 in the VSLs for R2. Requirement 2.1 states that the methodology shall with at least one of 2.1.1, 2.1.2, and 2.1.3.</p> <p>Remove 3.1.1, 3.1.2, and 3.1.3 and replace them with 3.1 in the VSLs for R3. Requirement 3.1 states that the methodology shall with at least one of 3.1.1, 3.1.2, and 3.1.3.</p> |

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| | The VSL table needs to be corrected to show R4 in the R# column rather than having two R3s. |
| Response: The FR SDT thanks you for your comment. We concur and have made the suggested revisions. | |
| Pepco Holdings, Inc. - Affiliates | There are some typographical errors in the draft - Requirement R3.2 includes a reference to Equipment Ratings identified in R2.1. That should be R3.1. Measure M4 refers to a request made in accordance with Requirement 34. That should be Requirement 4. |
| Response: The FR SDT thanks you for your comment. We concur and have made the suggested revisions. | |
| PJM | This standard attempts to combine rating generators with rating transmission lines. They are two very different types of equipment that have distinctive characteristics which are not comparable and should not be grouped together in this way. The MOD standards handle generators sufficiently and generators should not be forced into the FAC transmission standards. |
| Response: The FR SDT thanks you for your comment. The requirements call for documenting how facility ratings were determined and providing that documentation to others. The MOD standards address verification of the ratings. | |
| Entergy Services, Inc | We note that the consideration of comments to the August comments stated that “The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. “ However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs. |
| Response: The FR SDT thanks you for your comment. We have revised the VRF for R1 and R2 to Lower. | |

Consideration of Comments on Initial Ballot — Facility Ratings — FAC-008-2 (Project 2009-06)

Summary Consideration: The FR SDT thanks all commenters for their thoughtful consideration of the proposed FAC-008-2 standard. Some of the comments were aimed at providing clarity to requirements without changing the intent of those requirements. The FR SDT agrees with these comments and will have these entered into the NERC Issues Data Base for consideration during the next revision of the standard. These suggested edits include:

1. Revise the phrase “performance history” in R2 and R3 to “historical performance records” to be consistent with R1.
2. Split R1 into two sentences as follows: *R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer when the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Ratings will continue up to the high side terminals of the main step up transformer.*
3. Add references in R4 and R5 to provide a link to requirements R1, R2 and R3. An example of this would be to revise R4 as follows: *R4. Each Transmission Owner shall make its Facility Ratings methodology (R3) and each Generator Owner shall each make its documentation for determining its Facility Ratings (R1) and its Facility Ratings methodology (R2) 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.*

A suggestion was made to remove the word “temporary” from the footnotes relative to de-ratings. The SDT believes that the footnote, ‘Such as temporary de-ratings of impaired equipment in accordance with good utility practice’ is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, ‘Operating limitations’. Therefore, no change is necessary.

Some commenters reiterated their prior comments that this standard is duplicative with other NERC Standards (MOD-024, MOD-025, MOD-010, and MOD-011). The FR SDT notes that with industry restructuring has changed the traditional form of planning, procurement, and construction of both generation and transmission facilities. Today, not all generators are planned, built, and owned by the host utilities to which they interconnect. In addition, MOD-024 and MOD-025 are not mandatory and enforceable in the United States and most of Canada. The currently posted draft of MOD-024 does not apply to all generation facilities as it specifically excludes certain classes of generators. The FR SDT does not believe that MOD-024 and MOD-025 should provide the sole basis for determining a Facility Rating – MOD-024 and MOD-025 only require a single verification and this would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history. MOD-010 only applies to provision of data for those Transmission Owners, Transmission Planners, Generator Owners and Resource Planners specified in the data requirements and reporting procedures of MOD-011. It does not require that Facility Ratings be “determined based on technically sound principles”, the establishment of the Ratings based on the methodology or documentation, nor does it require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States and most of Canada.

Some commenters reiterated their prior comments that this standard should not apply to Generator Owners. The FR SDT believes that it has been remiss in providing an adequate overview of the intent of the various requirements of FAC-008-2 as they apply to Generator Owners. R1 and R2 apply to Generator Owners and should be considered together. R1 relates to the electrical rating of the generator. The FR SDT posted a previous version of the standard with the term “turbine generator” in R1 (see last posting for comment) and stakeholders requested clarity on what

was intended. The FR SDT removed the word “turbine” to indicate that R1 was only the electrical rating. The requirement (R1) does not ask for any ratings of specific equipment within the plant but only the rating at the specific points in the requirement. Where R1 ends, R2 begins. R2 relates to transmission type equipment (if owned by the Generator Owner) from the end point in R1 to the point of interconnection. If a Generator Owner owns any transmission type equipment (as noted in Requirement R2, Part 2.4.1), then that equipment is treated as a transmission facility and R2 applies. Otherwise, there is no Generator Owner applicability for R2. Please note that these are Facility Ratings to be used in long-term planning studies. We agree that a calculated rating should not be used for real-time operations and that the requirements of TOP-002 cover operational revisions to ratings. However, data from Energy Management Systems or testing can only be available after the generator becomes operational. A calculated rating, which may include long-term derates or uprates, or for a planned generator, is useful in a long-term planning study.

Some comments appear to be aimed at compliance issues and the burden of documentation to Generator Owners. The FR SDT went through an exhaustive stakeholder process to develop requirements for Generator Owners that are not burdensome and do not require the Generator Owner to recreate unavailable documentation. R1 only requires a Generator Owner to provide “documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Rating will continue up to the high side terminals of the main step up transformer Facility Rating.” This could be as simple as saying that your Facility Rating is based on the annual full load test that most Generator Owners run. The actual Facility Rating would be the result of that test. R2 only applies if a Generator Owner owns transmission facilities beyond the generator in R1 (if the Generator Owner doesn’t own transmission type equipment, then R2 does NOT apply). R3 begins the Facility Rating process for Transmission Owners. The remainder of the requirements, (except R3), apply to Generator Owners and relate to the output of R1 and R2.

The standard allows many ways of meeting the requirements, and the Generator Owner does not have to provide a “calculated facility rating”. It just needs to provide a rating consistent with its documentation, which can be “design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis”, or “Operational information such as commissioning test results, performance testing or performance history, any of which may be supplemented by engineering analyses.” The FR SDT reiterates its assertion that this standard should apply to Generator Owners and that the “burden of proof” is minimal for the applicable requirements.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedure: http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf.
March 4, 2010

| Voter | Entity | Segment | Vote | Comment |
|--|---------------------------------|---------|-------------|--|
| David Murray | PSEG Power LLC | 5 | Affirmative | <p>“PSEG is voting yes for FAC-008-2 for the following reasons, but also has concerns described below and believes that additional improvements to the standard are essential: Version 2 is an improvement over Version 1, but for generators this standard continues to be redundant with other NERC generation verification and testing standards. The standard also appears to require unnecessary generator rating documentation, as many generators have pointed out that they have never been requested to provide such data to Transmission Operators and Planners. The Requirements, as written, are overly complex, confusing and inconsistent. The language in the requirements is not consistent between the requirements for TOs and GOs. Transmission Owners are required to make only their Facility Ratings methodology available, while Generator Owners are required to make both their documentation for determining Facility Ratings and their Facility Ratings methodology available. PSEG does not understand what the difference is between “documentation for determining Facility Ratings” and “Facilitating Ratings methodology.”</p> <p>Also confusing is that R2.4 refers to “the process by which the Rating of equipment that comprises a Facility is determined.” If all of these, and perhaps other, phrases contemplate the same thing, they should use the same language. Also, if this standard is to remain applicable to generators, the requirements applicable to Transmission Owners and Generator Owners should be symmetrical.”</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The standard uses the term “documentation” for generation equipment where a methodology is not required. For Transmission equipment, a “methodology” is required. R1 deals with ratings for the generation equipment. R2 only applies to a GO if it owns any transmission type equipment between the generator and the transmission system while R3 applies to the transmission facilities owned by the TO.</p> <p>Part 2.4, which is applicable to the GO, is analogous to Part 3.4, which is applicable to the TO, and refers to the details specified in the sub parts (2.4.1 and 2.4.2 for Part 2.4 and 3.4.1 and 3.4.2 for Part 3.4). Therefore, the requirements for the same Facility types are the same for the both the GO and the TO.</p> | | | | |
| Charlie Martin | Louisville Gas and Electric Co. | 5 | Affirmative | <p>“The footnotes reference to temporary derates is inconsistent with the standard's Long Term Planning time horizon. E ON US suggests removing the footnote.”</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The SDT believes that the footnote, ‘Such as temporary de-ratings of impaired equipment in accordance with good utility practice’ is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, ‘Operating limitations’. Therefore, no change is necessary.</p> | | | | |
| Henry Ernst-Jr | Duke Energy Carolina | 3 | Affirmative | <p>“While we agree with FAC-008-2 as presented for ballot, we believe that the Background Information which was included on the last Comment Form (posted August 10, 2009), will be important information for compliance auditors to consider, and should be made part of the Reliability Standard Audit Worksheet (RSAW) for this standard. This same information should also be</p> |

| Voter | Entity | Segment | Vote | Comment |
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| | | | | included in the next revision of FAC-008, perhaps as an Attachment." |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We will encourage and advise the RSAW developers to include the Background Information in the new RSAW for FAC-008 as you suggest.</p> | | | | |
| Larry E Watt | Lakeland Electric | 1 | Negative | A more detailed response is required in order to clear up the uncertainty reflected in the ballot pool e-mail debates. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT can not respond to your comment without further information regarding the "uncertainty reflected in the ballot pool e-mail debates".</p> | | | | |
| Paul B. Johnson | American Electric Power | 1 | Affirmative | <p>AEP proposes that an errata correction be made to requirement 7. The errata will simplify the wording and avoid future interpretation requests as to the conditions when Facility Ratings are to be provided to the specified registered entities. As proposed, the text would read: R7. Each Transmission Owner and Generator Owner shall provide Facility Ratings for its solely and jointly owned, existing and future, Facilities to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]</p> |
| Raj Rana | American Electric Power | 3 | Affirmative | |
| Brock Ondayko | AEP Service Corp. | 5 | Affirmative | |
| Edward P. Cox | AEP Marketing | 6 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Michael Gammon | Kansas City Power & Light Co. | 1 | Affirmative | <p>Although there is progress forward in improving the Facility Ratings standard it remains unclear regarding what is meant by "point of interconnection with a Transmission Owner". In addition, it is unclear regarding the expectations from this standard for a non-operating joint owner of a generating unit. Please consider these points in future revisions.</p> |
| Charles Locke | Kansas City Power & Light Co. | 3 | Affirmative | |
| Thomas Saitta | Kansas City Power & Light Co. | 6 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We encourage you to keep abreast of future revisions to this standard and submit your</p> | | | | |

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| comments at that time. Specific suggestions for revisions would be encouraged and appreciated. | | | | |
| Mike Blough | Kissimmee Utility Authority | 5 | Affirmative | Although we recognize that it may be a carry over from the existing Version 1 standards, the phrase "solely or jointly owned" ought to be eliminated from the Version 2 standard because it creates ambiguity and confusion. No other standards relating to the responsibility of the Owner (e.g., PRC standards) uses this language. The only other occurrence of this language is in dynamic scheduling and tagging of jointly owned generation, with a very different purpose, and applicable to other types of registration (e.g., BAs and PSEs). The "jointly" owned can be interpreted that every joint owner of a Facility (even the less than 1% owner of a nuclear plant for instance) needs to have a ratings methodology and a rating for the same Facility, which is impractical, a source of confusion, and not what we believe the SDT intended. The Statement of Compliance Registry Criteria defines a Generation Owner as the: "(e)ntity that owns and maintains generating units;" and the Transmission Owner as: "(t)he entity that owns and maintains transmission facilities." Hence, we believe the intent of the SDT is the same as the intent of the Statement of Compliance Registration Criteria; that the entity responsible for maintenance for a jointly owned Facility is the only owner (usually only one owner) that needs to be registered for that Facility (the majority owner of a nuclear plant for instance). If that is the intent, then the phrase "solely and jointly owned" is not required and is only a source of ambiguity and confusion. In addition, we see no need to separate R1 from R2 as long as the combined requirement is quite clear that Facilities between the GSU and the point of interconnection are part of the Generator Owner's responsibility. There seems to be no harm in requiring a methodology for Facilities from the electric generator through the GSU, the methodology could be as simple as "we use manufacturers' specifications" while addressing ambient temperature assumptions, etc. |
| Joseph S. Stonecipher | Beaches Energy Services | 1 | Negative | |
| Thomas E Washburn | Florida Municipal Power Pool | 2 | Negative | |
| Frank Gaffney | Florida Municipal Power Agency | 4 | Negative | |
| Thomas W. Richards | Fort Pierce Utilities Authority | 4 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The use of the terms "solely or jointly owned" is used specifically in this standard to ensure that there are no gaps. Nothing in this standard precludes joint owners from assigning (through contracts or agreements) the responsibility for compliance to one entity.</p> | | | | |
| John J. Blazekovich | Exelon Energy | 1 | Negative | ComEd opposes this standard because of the removal of R7 from the previously balloted version and because of the inclusion of "performance history" in bullet # 3 of R 2.2.1. "Performance history" is not defined and subject to wide ranging interpretation by applicable entities and Regional auditors. |
| <p>Response: The FR SDT thanks you for your comment. Based on industry consensus, R7 was removed from the previous draft of this proposed standard. "Performance history" is intended to allow historical performance (i.e. – actual performance data) of a facility as the basis for methodology used to establish the Ratings of the equipment that comprises the Facility.</p> | | | | |

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| Russell A Noble | Cowlitz County PUD | 3 | Negative | Cowlitz sees a need to reevaluate applicability to the Generator Owner. If the equipment rating of a generation facility is designed around the prime mover of generation, then the "most limiting" factor is not "equipment." The limiting factor is wind, maximum allowed hydro flow per FERC license, maximum carbon emission allowed, etc. Requiring documented generation rating on equipment per se adds nothing to reliability, but does add unnecessary compliance cost. |

Response: The FR SDT thanks you for your comment. FAC-008 does not address the prime mover. The intent of R1 is to provide documentation as to how a rating of the electrical generation equipment was developed to deliver the power to the BES. Equipment and Facility Ratings are based on the electrical properties only (see definitions below).

Equipment Rating: The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner.

Facility Rating: The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility.

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| Richard J. Padilla | Pacific Gas and Electric Company | 5 | Affirmative | <p>FAC-008 Comments:</p> <p>R1 and R2: Should the generator rating account for the transmission path rating? If not, how is the dispatchable generator output managed?</p> <p>R1.1, R2, & R3: There are differences in the referenced standard organizations. R1.1 refers to ANSI/IEEE and R2 & R3 refer to CIGRE/IEEE. If CIGRE is applicable and ANSI/IEEE too shouldn't it be referenced similarly?</p> <p>R3 lists specific pieces of equipment while R1 and R2 do not. Is there a rationale for including a specific list for TO and not GO; shouldn't the list be eliminated completely?</p> <p>R4: The information required to be made available should be only methodology. There should not be additional requirements for the GO to provide documentation about the methodology. D1.4: Data retention should be since the last audit. "Since last audit period" makes it unclear as to what is required.</p> |
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Response: The FR SDT thanks you for your affirmative vote and comment.

R1 and R2 are separate. The generator output must respect the transmission path rating in real-time. R1 is meant to cover supporting documentation for determining the generator installed capacity, for example, the D curve. R1 is written to accommodate the GO and only requires the GO to have documentation or test reports, etc. but not a methodology to establish a rating. R2 is meant to cover the methodology used to determine the ratings of facilities in the switchyard, i.e., switch, transformers, CT, etc. So, R2 is similar to R3 but applies up to the point of interconnection with the transmission system.

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| <p>R1.1, R2, & R3: ANSI/IEEE/GIGRE, etc, are examples and are meant to provide flexibility because FERC Order 693 requires that the methodology to be developed in an open and transparent forum.</p> <p>R2 (GO) and R3 (TO) are the same because they both deal with transmission type facilities. R1 does not have a list.</p> <p>R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Linda R. Jacobson | City of Farmington | 3 | Negative | FEUS agrees facility rating methodology should be documented and ratings should be developed and provided to appropriate entities. However, FEUS SME's are concerned with the wording of Requirement 7 "as scheduled." FEUS agrees "when there is a change or addition" it should be provided to appropriate entities, however, a GO or TO would have no control over "schedules" imposed by other entities. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Ronald D. Schellberg | Idaho Power Company | 1 | Affirmative | I have concern over R7 not bounding the schedule the requesting entities can place on TOs and GOs. Suggest language that requesting entities must allow at least xx days to respond. |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Ralph Frederick Meyer | Empire District Electric Co. | 1 | Negative | <p>I see an interpretation issue with the phrase "Engineering Analysis" used in 1.1 and 2.1 when an entity may be asked to show compliance. A definition of Engineering Analysis is needed.</p> <p>I do not agree with the statements in 2.3 and 3.3. The limiting elements should be a part of the measurements, a phrase in the documentation does not protect the BES, nor excluding it adds risk to the BES.</p> <p>R2 For the Generator owner has a VRF of Lower, while R3 for the Transmission owner has the same requirements but has a VRF of medium. Both the VRF of R2 and R3 should be the same since they are the same requirements.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>The term "engineering analysis" is not required to be used, but is an option for the GO to use in documenting its Facility Ratings. Proposing a definition for the term would be too prescriptive to include in a standard.</p> | | | | |

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| <p>The phrase listed in an entity's documentation, in and of itself, will not protect the BES. However, a requirement to include it in your methodology will ensure that the most limiting facility is accounted for and adhered to.</p> <p>The FR SDT has used the VRF Guidelines to determine the VRF for these requirements.</p> | | | | |
| Larry W. Rodriguez | Entegra Power Services | 6 | Negative | <p>I will not re-invent the wheel; I agree with the comments of Jim Stanton and Tom Bradish.</p> <p>Also, the differences between R1 and R2 are ambiguous and very confusing. Don't we want these Standards to be extremely clear and precise for the sake of BES reliability?</p> |
| <p>Response: The FR SDT thanks you for your comment. Please see the responses to comment of Messrs. Stanton and Bradish.</p> <p>The FR SDT believes that the differences between R1 and R2 are clear. R1 applies to the GO and relates to generation electrical ratings. R2 applies to the GO and relates to transmission type facilities (if owned by the GO) between the generator and the point of interconnection.</p> | | | | |
| Daniel Herring | Detroit Edison Company | 4 | Affirmative | <p>I'm voting affirmative only in that this revision is better than the current standard. I do not agree with GO being an applicable entity and I also believe the criteria within this revision to be repetitive, unnecessary, and to broad in scope.</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment.</p> | | | | |
| Kenneth Goldsmith | Alliant Energy Corp. Services, Inc. | 4 | Affirmative | <p>In R1 and R2, for jointly owned units the operating partner should develop the ratings.</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The standard does not preclude such an arrangement.</p> | | | | |
| Daniel Duff | Liberty Electric Power LLC | 5 | Negative | <p>It would seem to me the one-time value in the exercise is making sure you are not going to overload a component of your power train. Every registered entity should have preformed this exercise back in 2007. I would suggest making the standard applicable to GOs seeking to enter the BPS for the first time, or GOs upgrading a major component - generator, step-up transformer, or breaker. You could then satisfy the standard by demonstrating the nameplate rating was at least equal to the replaced part.</p> |
| <p>Response: The FR SDT thanks you for your comment. If an entity has performed these requirements in 2007 and its facilities and "documentation for determining the facility rating" or "facility rating methodology" does not change, then it meets the requirements (assuming it has maintained the appropriate evidence).</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| Michelle Rheault | Manitoba Hydro | 1 | Affirmative | <p>Manitoba Hydro is voting affirmative, however we are submitting the following comments: Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3, R4 or R5. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R7). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R4) jeopardize the reliability of the system? The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction-and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology indentify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 and Requirement 3.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Manitoba Hydro recommends that the words "if available" be added to the end of Requirements R2.2.2 and R3.2.2.</p> |
| Greg C Parent | Manitoba Hydro | 3 | Affirmative | |
| Mark Aikens | Manitoba Hydro | 5 | Affirmative | |
| Daniel Prowse | Manitoba Hydro | 6 | Affirmative | |

Response: The FR SDT thanks you for your affirmative vote and comment.

VSL: The VSL is an indicator of how badly an entity failed to comply with the requirement – it does not consider the impact of noncompliance on the BES. The VRF is determined based on risk to the BES (lower and medium for these requirements). Therefore it is appropriate to have a severe VSL for each of the requirements listed.

Older Facilities: The FR SDT does not intend for entities to have to recreate voluminous documentation to meet these requirements. The Requirement R2 states only that the methodology address how parts 2.2.2 and 3.2.2 were *considered*. The standard also allows for the use of "performance history" (see requirements 2.1 and 3.1).

| Voter | Entity | Segment | Vote | Comment |
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| James B Lewis | Consumers Energy | 5 | Negative | My issue here is one of double (maybe triple.) jeopardy. The FAC deals with Facility Ratings. For Generator Owners, these are well covered in MOD- 024 and 025, and MOD-010 and 011. They are also required and covered in the mandated interconnection agreements. As the MODs and this FAC each require something a bit different, a potential compliance trap exists. If an auditor asks about the rating of a unit at a power plant, we would likely need to keep two or three sets of paperwork to respond as the various MODs and this FAC have slightly different requirements. In my view, this does nothing to improve the reliability of the BES. The applicability to Generator Owners was wrong from the beginning and is still wrong. Otherwise, the changes the SDT has come up with on this revision are pretty good. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 only applies to provision of data for those TOs, TPs, GOs and RPs specified in the data requirements and reporting procedures of MOD-011. MOD-010 does not cover methodology or documentation, the establishment of the Ratings based on the methodology or documentation, nor does it require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States or in most of Canada. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility rating because, at best, a single verification by itself, following what is required in MOD-024 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records.</p> | | | | |
| Mark Ringhausen | Old Dominion Electric Coop. | 4 | Negative | ODEC feels that the applicability of this standard should not apply to generators as they are being tested via the MOD standards for the capabilities and these testing results should be used by operations and planning for their models not some rating methodology. Make this change and I can vote Yes for this standard. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 only applies to provision of data for those TOs, TPs, GOs and RPs specified in the data requirements and reporting procedures of MOD-011. MOD-010 does not cover methodology or documentation, the establishment of the Ratings based on the methodology or documentation, nor does it require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States or in most of Canada. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records.</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| Mark Sampson | PacifiCorp | 1 | Affirmative | PacifiCorp is voting "yes" for the current draft of FAC-008-2 because it is generally in support of the standard as currently written and believes that it is a significant improvement on the currently effective FAC-008-1 and FAC-009-1. However, in the event the standards drafting team reviews the standard again before it is submitted to FERC, PacifiCorp recommends that the standard drafting team consider striking requirement R2.4.2 from the standard, or, in the alternative, provide more detail as to what constitutes an Emergency Rating for a generation facility. R2.4.2 requires Generator Owners to include Normal and Emergency Ratings in the scope of Ratings addressed in the process by which the Rating of equipment that comprises a Facility is determined. PacifiCorp believes that this requirement should not be applicable to Generator Owners because generating facilities do not have Emergency Ratings in the same way as transmission facilities. The definition of Emergency Rating states that such rating assumes acceptable loss of equipment life or other physical or safety limitations for the equipment involved. Running a generating facility above the Normal Rating would immediately result in the unacceptable loss of equipment life or other physical or safety limitations. Therefore, there is not a realistic way to develop an Emergency Rating for a generator, even for a finite period of time. |
| John Apperson | PacifiCorp | 3 | Affirmative | |
| Sandra L. Shaffer | PacifiCorp | 5 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. R2 relates to transmission type equipment only (not generator facilities which are covered in R1) that a GO may own up to the point of interconnection. If a GO does not own any transmission type equipment, then R2 is not applicable.</p> | | | | |
| James D. Hebson | PSEG Energy Resources & Trade LLC | 6 | Affirmative | <p>PSEG is voting "yes" for FAC-008-2 for the following reasons, but also has concerns described below and believes that additional improvements to the standard are essential:</p> <ol style="list-style-type: none"> 1. Version 2 is an improvement over Version 1, but for generators this standard continues to be redundant with other NERC generation verification and testing standards. 2. The standard also appears to require unnecessary generator rating documentation, as many generators have pointed out that they have never been requested to provide such data to Transmission Operators and Planners. 3. The Requirement, as written, are overly complex, confusing and inconsistent. Also, the language in the requirements is not consistent between the requirements for TOs and GOs. While Transmission Owners are required to make only their Facility Ratings methodology available, Generator Owners are required to make both their documentation for determining Facility Ratings and their Facility Ratings methodology available. PSEG does not understand what the difference is between "documentation for determining Facility Ratings" and "Facility Ratings methodology." Also confusing is that R2.4 refers to "the process by which the Rating of equipment that comprises a Facility is determined." If all of these, and perhaps other, phrases contemplate the same thing, they |
| Kenneth D. Brown | Public Service Electric and Gas Co. | 1 | Affirmative | |
| Jeffrey Mueller | Public Service Electric and Gas Co. | 3 | Affirmative | |

| Voter | Entity | Segment | Vote | Comment |
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| | | | | should use the same language. Also, if this standard is to remain applicable to generators, the requirements applicable to Transmission Owners and Generator Owners should be symmetrical." |

Response: The FR SDT thanks you for your comment.

*The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not facility ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history.

* The FR SDT does not intend for entities to have to recreate voluminous documentation to meet these requirements. The Requirements R2 and R3 say only that the methodology address how Parts 2.2.2 and 3.2.2 were *considered*. The standard also allows for the use of "performance history" (see Requirements R2 and R3, Parts 2.1 and 3.1).

*R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.

*Part 2.4, which is applicable to the GO, is analogous to Part 3.4, which is applicable to the TO, and refers to the details specified in the sub parts (2.4.1 and 2.4.2 for Part 2.4 and 3.4.1 and 3.4.2 for Part 3.4). Therefore, the requirements for the same Facility types are the same for the both the GO and the TO.

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| Joseph G. DePoorter | Madison Gas and Electric Co. | 4 | Negative | R1 is confusing and recommend that it be re-written to read: "Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer when the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Ratings will continue up to the high side terminals of the main step up transformer." |
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Response: The FR SDT thanks you for your comment. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.

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| John J. Moraski | Baltimore Gas & Electric Company | 1 | Affirmative | <p>Requirement (R1) of the proposed new standard states the following: Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. This statement assumes the point of interconnect dividing asset ownership between the Generator and Transmission Owners is either the low or high side terminals of the main step up transformer.</p> <p>However, there may be cases where the point of interconnect is not the main step up transformer. The wording of this requirement is too prescriptive by stating a specific asset as the point of interconnect. We recommend changing the wording of the requirement to state that the Generator Owner is responsible for determining the Facility Ratings up to the interconnect point and the Transmission Owner is also responsible for determining the Facility Ratings up to the interconnect point. An alternative to the current wording for the requirement could be: Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the point of interconnection. (For example, if the point of interconnection is the main step up transformer; if the Generator Owner does not own the main step up transformer, the Generator Owner is responsible for the Facility Ratings up to the low side terminals of the main step up transformer; however, if the Generator Owner does own the main step up transformer, the Generator Owner is responsible for the Facility Ratings up to the high side terminals of the main step up transformer.)</p> |

Response: The FR SDT thanks you for your affirmative vote and comment. The FR SDT agrees with your point that the main step up transformer may not be the point of interconnection. R1 and R2 apply to Generator Owners and should be considered together to address your concern. R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection.

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| Robert Kondziolka | Salt River Project | 1 | Negative | <p>SRP believes that facility ratings information needs to be shared between the appropriate reliability entities. We agree that the proposed Standard FAC-008-2 generally meets that objective. However, Requirement 7 of the Standard causes us some concern. The requirement states that the TO and GO should provide Facility Ratings to its associated RC, PC, TP, TOP, and TO, "as scheduled by such requesting entities." The schedule to provide the information is at the sole discretion of the requesting entity. An unreasonable schedule could result in the GO or TO being non-compliance to the requirement.</p> |
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Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.

| Voter | Entity | Segment | Vote | Comment |
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| John T. Underhill | Salt River Project | 3 | Negative | SRP believes that facility ratings information needs to be shared between the appropriate reliability entities. We agree that the proposed Standard FAC-008-2 generally meets that objective. However, Requirement 7 of the Standard causes us some concern. The requirement states that the TO and GO should provide Facility Ratings to its associated RC, PC, TP, TOP, and TO, "as scheduled by such requesting entities." The schedule to provide the information is at the sole discretion of the requesting entity. An unreasonable schedule could result in the GO or TO being non-compliance to the requirement. SRP suggests that an additional requirement could be added to establish reasonable parameters for what the schedule to provide the Facilities Rating information might be. Another alternative could be that the language in Requirement 7 be altered to state "based on the schedule agreed to by the entities providing and receiving the information." |
| Glen Reeves | Salt River Project | 5 | Negative | |
| Mike Hummel | Salt River Project | 6 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. Regarding your suggestion for alternative language for the requirement: If one party declines to agree to a schedule, then both parties could be in violation of the requirement. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Edwin Les Barrow | City Public Service of San Antonio | 3 | Negative | The concept of "ratings" in relation to generation has no real correlation to BES reliability. Unit capability as reported through MOD standards is relevant to reliability. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not facility ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history.</p> | | | | |
| Duncan Brown | Calpine Corporation | 5 | Negative | The concern identified is that as worded the GO and TO have no control over the schedule they must adhere to in providing the required rating information and that because of this they may be subject to potential penalties for non-compliance. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Larry Monday | E.ON U.S. LLC | 1 | Affirmative | The footnote reference to temporary derates is inconsistent with the standard's Long Term Planning time horizon. E ON US suggests removing the footnote. |
| Charles A. | Louisville Gas and | 3 | Affirmative | |

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| Freibert | Electric Co. | | | |
| Daryn Barker | Louisville Gas and Electric Co. | 6 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The SDT believes that the footnote, 'Such as temporary de-ratings of impaired equipment in accordance with good utility practice' is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, 'Operating limitations'. Therefore, no change is necessary.</p> | | | | |
| Richard Salgo | Sierra Pacific Power Co. | 1 | Negative | The reason for the "negative" vote has to do solely with Requirement R7, which compels the responsible entity to provide Facility Ratings to requesting entities "as scheduled by such requesting entities". While this would normally not be problematic, we feel that without clear definition of a reasonable schedule for delivery of such data, the provider of the data will have a degree of compliance uncertainty. We suggest that this requirement be amended to specify a time frame for response to such requests for Facility Ratings, rather than leaving it open to interpretation. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. Because it is not known in advance the number of ratings requested, the SDT refrained from specifying a time frame to respond. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| James R. Keller | Wisconsin Electric Power Marketing | 3 | Negative | The revision results in less clarity than before due to the use of imprecise terms. Previously FAC-008 required a Facility Ratings methodology and FAC-009 required Facility Ratings. Now FAC-008-2 requires documentation for determining Facility ratings, a documented methodology for determining facility ratings, and the process by which a Rating is determined. I do agree with the longer timeframes for responding to a request for this data from another entity. |
| Anthony Jankowski | Wisconsin Energy Corp. | 4 | Negative | |
| Linda Horn | Wisconsin Electric Power Co. | 5 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The proposed standard FAC-008-2 is expected to replace both FAC-008-1 and FAC-009-1 in accordance with the recommended changes identified in the Standard Review Guidelines. In addition, the FR SDT assumes that your comment relates to R4 and R5. R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. A similar logic can be extended to R5. We will have your comment added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Jim R Stanton | SPS Consulting | 8 | Negative | The standard requirements in their current state do not define periodicity of facility rating activities |

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| | Group Inc. | | | <p>nor the scope of limiting equipment to be considered.</p> <p>Also, generator output data is abundantly available through other reporting requirements which more accurately reflect the "rating" of the facility, which basically changes every day. This is likely a good standard for transmission elements that do not change much from day to day, but it is nonsense to try and adapt it to a generator. Data for operational and planning needs should be more precise than a "sample day" based on assumed ambient conditions. There is no need for FAC-008-2 to apply to generators.</p> |
| <p>Response: The FR SDT thanks you for your comment. Requirement 7 specifies that the Facility Ratings are to be provided to the "Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities." Each requirement provides sufficient details as to which Facility Ratings are required. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> <p>The FR SDT assumes that your second comment relates to the MOD family of standards. We also note that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not facility ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records for generators.</p> | | | | |
| Robert D Smith | Arizona Public Service Co. | 1 | Negative | <p>The term "Facility Rating" in R1 needs to be definitive and clearly indicate what facilities are included. Specifically, it needs to clearly spell out if auxiliaries are included. It also needs to be clear whether it is the generator electrical rating or turbine mechanical rating. There are also additional issues that are not touched on with this rating requirement where the rating is not limited by the turbine generator or a component but by regulatory environmental issues.</p> |
| Thomas R. Glock | Arizona Public Service Co. | 3 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT posted a version of the standard with the term "turbine generator" in R1. Stakeholders requested clarity and the word "turbine" was removed. R1 and R2 apply to Generator Owners and should be considered together to address your concern. R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection.</p> | | | | |
| Kirit S. Shah | Ameren Services | 1 | Affirmative | <p>The word 'or' has been misspelled as 'ore' in the High VSL text for Requirements R5 and R7.</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We have corrected this and will note this when the standard is posted for recirculation ballot.</p> | | | | |

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| Kenneth Parker | Entegra Power Group, LLC | 5 | Negative | There are sufficient requirements in various other standards and in IA agreements for generators to provide plant ratings, modeling data, capacity and capability, therefore FAC-008 appears redundant. |
| <p>Response: The FR SDT thanks you for your comment. We are assuming that the redundant standards that you are referring to are in the MOD family of standards. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not Facility Ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records. We also note that IA agreements are not mandatory and enforceable reliability standards.</p> | | | | |
| Charles H Yeung | Southwest Power Pool | 2 | Affirmative | This is a step in the right direction for generator applicability but a new request should be submitted to further define what information from generators is applicable for reliability. |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment.</p> | | | | |
| Mark A. Heimbach | PPL Generation LLC | 5 | Affirmative | This standard is an improvement to the existing versions of FAC-008 & 9 and the effort of the drafting team is appreciated. Please note that PPL Generation has reservations around the applicability of this standard to a GO and would prefer that a team look at all the standards that involve generator ratings/testing, etc. and eliminate any duplicate and unnecessary standards/requirements. |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment.</p> | | | | |
| George R. Bartlett | Entergy Corporation | 1 | Negative | Traditional power plant construction planning has been to select a turbine-generator size based on system requirements for additional generating capacity. The sizing of the generator included a multitude of factors that finally end up with the utility picking the optimum turbine-generator for their needs. The construction design sizes the boiler or reactor and the auxiliary systems to support the size turbine generator that had been selected. Post construction generating units are subjected to performance testing. These testing efforts are usually extensive and tightly controlled. The purpose of this testing is to prove the unit has been designed and constructed to meet the original design specifications. Utilities hold equipment manufacturers and construction companies to pre-construction guarantees. Should an item of equipment be insufficiently sized or inadequate for the purpose it was design to fulfill, the shortcoming will become apparent during the acceptance testing |

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| | | | | <p>of the unit. The supplier/constructor will be required to remedy that shortcoming. Post testing the unit is declared to "go commercial" and the unit capability is declared at that time and the capability assigned is based on the design and acceptance testing that was performed. The above process is traditional and a long standing industry practice for determining the facility ratings of generating units. The activities in FAC-008 are also traditional for construction of substations. Substation facilities cannot be tested to determine what the facility ratings should be. The inability to demonstrate what the facility rating should be then requires an elaborate process be put into place that assures that each piece of equipment going into that facility is adequately sized. This process required by FAC-008 is sensible and understood and has been followed by utilities constructing substations for many decades. This process in not sensible and is misunderstood and is a complete departure from the normal way of doing business for entities trying to rate generating facilities. It is vastly unfair as it requires an entity attempting to rate a generating facility to reverse engineer virtually every component on the generating unit to prove that it has been sized and / or engineered properly. The procedure is a built in "got you" for any audit of any generating station. Generating units should be removed from the requirements of FAC-008. In addition to the above the reliability requirements MOD-024 and MOD-025 go into great detail to tell generator owners exactly how to rate their generating facilities.</p> |
| Matt Wolf | Entergy Services, Inc. | 3 | Negative | <p>Traditional power plant construction planning has been to select a turbine-generator size based on system requirements for additional generating capacity. The sizing of the generator included a multitude of factors that finally end up with the utility picking the optimum turbine-generator for their needs. The construction design sizes the boiler or reactor and the auxiliary systems to support the size turbine generator that had been selected. Post construction generating units are subjected to performance testing. These testing efforts are usually extensive and tightly controlled. The purpose of this testing is to prove the unit has been designed and constructed to meet the original design specifications. Utilities hold equipment manufacturers and construction companies to pre-construction guarantees. Should an item of equipment be insufficiently sized on inadequate for the purpose it was design to fulfill, the shortcoming will become apparent during the acceptance testing of the unit. The supplier/constructor will be required to remedy that shortcoming. Post testing the unit is declared to "go commercial" and the unit capability is declared at that time and the capability assigned is based on the design and acceptance testing that was performed. The above process is traditional and a long standing industry practice for determining the facility ratings of generating units. The activities in FAC-008 are also traditional for construction of substations. Substation facilities cannot be tested to determine what the facility ratings should be. The inability to demonstrate what the facility rating should be then requires an elaborate process be put into place that assures that each piece of equipment going into that facility is adequately sized. This process</p> |
| Stanley M Jaskot | Entergy Corporation | 5 | Negative | <p>of the unit. The supplier/constructor will be required to remedy that shortcoming. Post testing the unit is declared to "go commercial" and the unit capability is declared at that time and the capability assigned is based on the design and acceptance testing that was performed. The above process is traditional and a long standing industry practice for determining the facility ratings of generating units. The activities in FAC-008 are also traditional for construction of substations. Substation facilities cannot be tested to determine what the facility ratings should be. The inability to demonstrate what the facility rating should be then requires an elaborate process be put into place that assures that each piece of equipment going into that facility is adequately sized. This process</p> |

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| Terri F Benoit | Entergy Services, Inc. | 6 | Negative | <p>required by FAC-008 is sensible and understood and has been followed by utilities constructing substations for many decades. This process is not sensible and is misunderstood and is a complete departure from the normal way of doing business for entities trying to rate generating facilities. It is vastly unfair as it requires an entity attempting to rate a generating facility to reverse engineer virtually every component on the generating unit to prove that it has been sized and / or engineered properly. The procedure is a built in "got you" for any audit of any generating station. Generating units should be removed from the requirements of FAC-008. In addition to the above the reliability requirements MOD-024 and MOD-025 go into great detail to tell generator owners exactly how to rate their generating facilities.</p> |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that with industry restructuring has changed the traditional form of planning, procurement, and construction of both generation and transmission facilities. Today, not all generators are planned, built and owned by the host utilities, to which they interconnect.</p> <p>In addition, The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. The FR SDT also does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records.</p> <p>FAC-008-2 does not require Generator Owners to perform any reverse engineering, it only require that they have documentation for determining the Ratings of its Facility(ies) and that the Ratings are based on the documentation.</p> | | | | |
| Keith V. Carman | Tri-State G & T Association Inc. | 1 | Negative | <p>Tri-State has concerns with sections 2.2.4 and 3.2.4. Those sections state that Generator Owners and Transmission Owners must identify how "Operating limitations" were considered in their Facility Rating methodologies. The footnote gives an example using "good utility practices." This is a vague term and should not be used in this standard. "Operating limitations" as described in the footnote are also inconsistent with the Time Horizon of these requirements (Long-term Planning). Operating limitations' impact on facility ratings belongs in an operating standard, not FAC-008.</p> <p>The wording in R4, R5, and M4 is ambiguous. When discussing Generator Owners, the phrase "documentation for determining" can be interpreted to apply to both "its Facility Ratings" and to "its Facility Ratings methodology." The Transmission Owner responsibility is clear in R4 and R5 in that the requirements apply to the Facility Rating methodology and do not apply to documentation for determining the Facility Rating methodology. R2 and R3 have the same wording regarding the Generator Owner and Transmission Owner responsibility for Facility Rating methodology so it appears that the requirements for Generator Owners are also intended to be only Facility Rating</p> |

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| | | | | methodology. In M4, the order in which the two Generator Owner Facility Rating items are mentioned is reversed and the ambiguity does not exist in that measure. Tri-State recommends that similar changes should be made to R4, R5, and M4 to eliminate the possible confusion. |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>“temporary”: The SDT believes that the footnote, ‘Such as temporary de-ratings of impaired equipment in accordance with good utility practice’ is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, ‘Operating limitations’. Therefore, no change is necessary.</p> <p>R4 and R5: R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. A similar logic can be extended to R5. We will have your comment added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Trent Carlson | RRI Energy | 6 | Negative | <p>We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, “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.” The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from “ratings provided by equipment manufacturers” is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility. However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004. A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the</p> |

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| | | | | <p>units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is remediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards. FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient.</p> |

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| Benjamin Church | FPL Energy | 5 | Negative | <p>We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, "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." The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from "ratings provided by equipment manufacturers" is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility. However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004. A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is re-mediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There</p> |
| Mike Laney | Luminant Generation Company LLC | 5 | Negative | |

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| Thomas J. Bradish | RRI Energy | 5 | Negative | <p>is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards. FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient temperature and humidity. This data is certainly available but it is a sheet or two from a vendor manual and not a facility rating methodology. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment but the requirements are misapplied and a threat to reliability when imposed and used to calculate a generator rating. That the Standard was intended for transmission equipment rather than generators is in part illustrated by Requirement 2.4.2 The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings. Generating stations may have the ability to increase their output for a limited period of time but the Generators themselves do not have emergency ratings that should be used for modeling purposes by system planners. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. As radial components, no one is seriously questioning the ability of the elements of the generating stations to deliver power to the BES. However, generating owners are expending significant time, effort, and resources to acquire and develop documentation to meet the requirements of Facility Ratings for stations that have multiple decades of successful operation. Try to think of one disturbance or blackout that was traced to the facility rating documentation of a generating facility as the culprit. Yet the standard applies the same violation risk factors and penalties to the radial components of a small generating facility as it does to the networked components of the transmission grid. To date, the FAC-008-1 Standard is one in which generator owners are most vulnerable for non-compliance, in spite of the considerable efforts of the generator-owning industry to make sense of a set of requirements which make little sense, and which no operating entity is actually requesting of them. The individuals showing the most interest in Facility Rating documentation are the auditors or the RROs. The reason the standard it is so often violated is not because the industry is inattentive, but it is for documentation errors of successfully operating generating facilities that in reality are imposing no threat to the reliability of the Bulk Electric System. Not only are the standard requirements flawed in their application to generator owners, but the documentation burden of proof, as it is being imposed, is unwarranted. Generator Owner applicability should be stripped from FAC-008-2 and any further reliability needs pursuant to generator performance and capability should be referred to the Generator Verification Project 2007-09.</p> |

Response: The FR SDT thanks you for your comment. The FR SDT believes that we have been remiss in providing an adequate overview of the intent of the

| Voter | Entity | Segment | Vote | Comment |
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| | | | | <p>various requirements of FAC-008-2 as they apply to Generator Owners. R1 and R2 apply to Generator Owners and should be considered together. R1 relates to the electrical rating of the generator. The FR SDT posted a previous version of the standard with the term "turbine generator" in R1 (see pre-ballot posting) and stakeholders requested clarity on what was intended. The FR SDT removed the word "turbine" to indicate that R1 was only the electrical rating.</p> <p>The requirement does not ask for any ratings of specific equipment within the plant but only the rating at the specific points in the requirement. Where R1 ends, R2 begins. R2 relates to transmission equipment (if owned by the GO) from the end point in R1 to the point of interconnection. If a GO owns any transmission type equipment (as noted in Part 2.4.1), then that equipment is treated as transmission facilities and R2 applies. Otherwise, there is no GO applicability for R2. Please note that these are Facility Ratings to be used in long-term planning studies. We agree that a calculated rating should not be used for real-time operations and that the requirements of TOP-002 cover operational revisions to ratings. However, data from EMS or testing can only be available after the generator becomes operational. A calculated rating, which may include long-term derates or uprates, or for a planned generator is useful in a long-term planning study.</p> <p>The FR SDT further notes that TOP-002-2 R3 states, "Each Load Serving Entity and Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Each Balancing Authority and Transmission Service Provider shall coordinate its current-day, next-day, and seasonal operations with its Transmission Operator." It is focused, therefore, on coordination, not methodology or supporting documentation. In any case, it does not address data needed for long term planning.</p> <p>MOD-010 only applies to provision of data for those TOs, TPs, GOs and RPs specified in the data requirements and reporting procedures of MOD-011. MOD-010 does not require that Facility Ratings be "determined based on technically sound principles", does not require the establishment of the Ratings based on the rating methodology or documentation, nor does MOD-010 require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States or in most of Canada.</p> <p>IRO-004-2 is applicable to the BA, TOP and TSP, not the GO.</p> <p>Normal and Emergency ratings are not included in R1, which provides for the Facility Rating of the generation equipment. R2 is the first instance of applicability to a GO for these ratings and they apply to transmission equipment (if owned by the GO) from the end point in R1 to the point of interconnection. Therefore these two ratings are appropriate.</p> <p>The remainder of your comment appears to be aimed at compliance issues and the burden of documentation to GOs. The FR SDT went through an exhaustive stakeholder process to develop requirements for GOs that were not burdensome and that did not require the GO to recreate unavailable documentation. R1 only requires a GO to provide "documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Rating will continue up to the high side terminals of the main step up transformer Facility Rating." This could be as simple as saying that your Facility Rating is based on the annual full load test that most GOs run. The actual Facility Rating would be the result of that test. R2 only applies if a GO owns transmission facilities beyond the generator in R1 (if the GO doesn't own transmission type equipment, then R2 does NOT apply). R3 begins the Facility Rating process for TOs.</p> <p>The remainder of the requirements (except R3) apply to GOs, and all of them relate to the output of R1 and R2.</p> <p>The standard allows many ways of meeting the requirements, and the GO does not have to provide a "calculated facility rating". It just needs to provide a rating consistent with its documentation, which can be "design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that</p> |

| Voter | Entity | Segment | Vote | Comment |
|--|---|---------|----------|--|
| <p>has been verified by testing or engineering analysis", or "Operational information such as commissioning test results, performance testing or performance history, any of which may be supplemented by engineering analyses."</p> <p>The FR SDT reiterates its assertion that this standard should apply to Generator Owners and that the "burden of proof" is minimal for the applicable requirements.</p> | | | | |
| Greg Lange | Public Utility District No. 2 of Grant County | 3 | Negative | <p>We are casting a negative vote for several reasons. First in general we are committed to voting against any additional prescriptive standards language while the industry moves to the performance based methodology in development now. We should not be making it worse before we fix it. More specifically to this standard, statements of attestation such as 2.3 and 3.3 are useless waste of management time. Either the ratings are correct or they are not. The additional words in this version draft still leave the notion of most limiting factor on a generation facility vague and hard to follow. The addition of the transmission facility connection do not help to clarify this issue one bit. Our suggestion is to table this revision until it can be developed into a performance based standard and an accompanying set of guidelines.</p> |
| <p>Response: The FR SDT thanks you for your comment. R2 applies to any transmission type equipment owned by the GO, and R3 applies to transmission facilities owned by the TO. The phrase concerning the "most limiting applicable Equipment Rating" listed in an entity's documentation, in and of itself, will not protect the BES. However, a requirement to include it in your methodology, coupled with a requirement to follow the methodology, will ensure that the most limiting facility is accounted for and adhered to. The Standards Committee has directed drafting teams to continue with the work in progress and not wait for more definition on how to develop a results-based standard.</p> | | | | |
| Gregory L Pieper | Xcel Energy, Inc. | 1 | Negative | <p>Xcel Energy believes that this standard, as drafted, is not acceptable because of the inclusion of generating facilities. The concept of arbitrarily applying a methodology historically used for transmission facilities is fundamentally flawed. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, "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". There are two distinct functions, planning and operation. For planning purposes, the required output of a facility is determined, and then the elements of the facility are designed to achieve that required output. Applying this standard to a generating facility that is in the planning stage presumes that a random set of electrical equipment is accumulated and calculations are then performed to determine its rating. Also, the Standard Drafting Team has stated</p> |

| Voter | Entity | Segment | Vote | Comment |
|---------------|---------------------------|---------|----------|--|
| Michael Ibold | Xcel Energy, Inc. | 3 | Negative | in its Consideration of Comments that this standard applies only to electrical facilities. In the design and construction of generating facilities, the limit to the facility output is rarely the electrical equipment. It most often is the prime mover or something behind it. Thus, using a "Facility Rating" derived through this standard for planning purposes, would give an incorrect indication of the actual output of the facility which would tend to reduce grid reliability. For grid operations, the Facility Rating obtained by this standard would also be fictitious for the same reason and in the real world is not used. The ratings used by Transmission Operations are those determined by verification testing as required by MOD-024. This is a demonstrated value that can be realistically relied upon. Any temporary changes in the status of generating facility equipment that would cause a reduction in this demonstrated value are reported to the Transmission Operator per TOP-002. This includes facility rating reductions caused by mechanical equipment behind the generator (which are not covered by the proposed FAC-008) as well as the electrical equipment between the generator and the grid. The Standard Drafting Team has discounted the existence of MOD-024 in the past because it has not been approved by FERC. However, the fact remains that it has been approved by NERC and is being widely followed. In fact, many RTO's and ISO's have performance verification requirements where regional requirements may be lacking. The inclusion of "operational information" in R1.1 as a valid methodology is still flawed, since it would still apply only to the electrical equipment and if applied to all equipment in the facility would merely be duplicative of MOD-024. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. Xcel Energy does agree with, and support, the changes made to Requirement 3 for the Transmission Owner allowing the use of performance history in the methodology. If the applicability to the Generator Owner were removed, Xcel Energy would support the rest of the proposed standard as it is written. |
| Liam Noailles | Northern States Power Co. | 5 | Negative | |

Response: The FR SDT thanks you for your comment. The FR SDT believes that we have been remiss in providing an adequate overview of the intent of the various requirements of FAC-008-2 as they apply to Generator Owners. R1 and R2 apply to Generator Owners and should be considered together. R1 relates to the electrical rating of the generator. The FR SDT posted a previous version of the standard with the term "turbine generator" in R1 (see pre-ballot posting) and stakeholders requested clarity on what was intended. The FR SDT removed the word "turbine" to indicate that R1 was only the electrical rating.

The requirement does not ask for any ratings of specific equipment within the plant but only the rating at the specific points in the requirement. Where R1 ends, R2 begins. R2 relates to transmission equipment (if owned by the GO) from the end point in R1 to the point of interconnection. If a GO owns any transmission type equipment (as noted in Part 2.4.1), then that equipment is treated as transmission facilities and R2 applies. Otherwise, there is no GO applicability for R2. Please note that these are Facility Ratings to be used in long-term planning studies. We agree that a calculated rating should not be used for real-time operations and that the requirements of TOP-002 cover operational revisions to ratings. However, a calculated rating, which may include long-term derates or uprates, or for a planned generator is useful in a long-term planning study.

| Voter | Entity | Segment | Vote | Comment |
|-------|--------|---------|------|---|
| | | | | <p>The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history.</p> <p>Normal and Emergency ratings are not included in R1, which provides for the Facility Rating of the generation equipment. R2 is the first instance of applicability to a GO for these ratings and they apply to transmission equipment (if any) from the end point in R1 to the point of interconnection. Therefore these two ratings are appropriate.</p> <p>The remainder of your comment appears to be aimed at compliance issues and the burden of documentation to GOs. The FR SDT went through an exhaustive stakeholder process to develop requirements for GOs that were not burdensome and that did not require the GO to recreate unavailable documentation. R1 only requires a GO to provide "documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Rating will continue up to the high side terminals of the main step up transformer Facility Rating." This could be as simple as saying that your Facility Rating is based on the annual full load test that most GOs run. The actual Facility Rating would be the result of that test. R2 only applies if a GO owns transmission facilities beyond the generator in R1 (if the GO doesn't own transmission type equipment, then R2 does NOT apply). R3 begins the Facility Rating process for TOs.</p> <p>The remainder of the requirements (except R3) apply to GOs and all of them relate to the output of R1 and R2.</p> <p>The FR SDT reiterates its assertion that this standard should apply to Generator Owners and that the "burden of proof" is minimal for the applicable requirements.</p> |

Consideration of Comments on Facility Ratings Expansion — (Project 2009-06)

The Facility Ratings Drafting Team thanks all commenters who submitted comments on the First Posting of FAC-008-3, Facility Ratings (Project 2009-06). This standard was posted for a 45-day public comment period from March 17, 2011 through May 2, 2011 and an initial ballot of the standard and a non-binding poll of the associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) were conducted from April 21 through May 2, 2011.

Stakeholders were asked to provide feedback on the standard through a special electronic comment form and members of the ballot pool provided comments either through the comment form or with their ballots or with the non-binding poll. There were 45 sets of comments submitted with a comment form; 48 balloters submitted comments either with a comment form or with a ballot. This report includes all comments submitted with a comment form or with a ballot or with the non-binding poll of the VRFs and VSLs.

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Summary Consideration of Comments:

Many commenters had concerns with the language of the new Requirement R8 and its parts and subparts and asked for additional clarity. The three main concerns were

- 1) clarify which entities can request the information identified in Requirement R8,
- 2) clarify that the information requested is limited to thermal ratings, and
- 3) clarify terms including "generator deliverability", "major city," and "load pocket".

The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket.

With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities under their authority are impacted. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. This will provide better guidance with respect to "generator deliverability," "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed as requesting the information do not necessarily own Facilities.

- The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities.
- The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities.
- The Transmission Operator does not necessarily own assets but has operational authority over those Facilities.
- The Transmission Owner does own its Facilities and has authority over those Facilities.

The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.

The FRSDT also modified R8, Part 8.2.2 to change the term, "Equipment Rating" to "Thermal Rating" for clarity in support of stakeholder comments.

The proposed clarified Requirement R8 is shown below:

Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that **limits the use of Facilities under the requester's authority by causing the requester has identified as having** any of the following: 1) A an Interconnection Reliability Operating Limit, 2) A limitation ~~ing~~ of Total Transfer Capability, 3) An impediment ~~ng~~ to generator deliverability, or 4) An impediment to ~~impeding~~ service to a major ~~city or~~ load center ~~pocket~~:

8.2.1 Identity of the existing next most limiting equipment of the Facility

8.2.2 The ~~Equipment~~ Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Most commenters agreed with the proposed VRFs, VSLs and Time Horizons. Some commenters had concerns with the use of percentages in the VSLs. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found. Some commenters suggested that the VRF for R8 should be lower. The VRF for R8 matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.

Other commenters suggested that the Time Horizon for R8 should be Long-term Planning. The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.

Minor revisions were made to the VSLs for R7 and R8 as follows:

1. The first VSL under the Lower category needs the words "and including" inserted prior to the "15 calendar days" language. The last part of the sentence should state "but missed meeting the schedules by up to and including 15 calendar days. This extra language would further clarify that if an entity reported its Facility Ratings on the 15th day, they would fall under the "Lower" VSL.

2. For the VSLs which incorporate percentages, the VSL percentages are not inclusive. The words "or equal to" should be incorporated into such VSLs. For

example, the second VSL under the Lower category should state “The responsible entity provided less than 100%, but not less than or equal to 95%...” This type of change should be incorporated in all four of the VSL categories.

The majority of commenters agree with the Measure M8. A couple of commenters had suggestions for including language that limits the scope to requested data and other specific language. The FRSDT believes that the phrase “in accordance with Requirement R8” contained in M8 is sufficient language to tie the measure to the requirement and provide the linkage suggested by the commenters.

The majority of commenters agree with the implementation plan. One commenter suggested that NERC provide guidance on how to handle certain specific situations. The FRSDT maintains that the requirements are written to allow entities flexibility in determining their Facility Ratings Methodology and the subsequent Facility Ratings. The requirements allow for entities to handle both common and unique situations without being prescriptive. Another commenter suggested changing the effective date to match the end date of a NERC Alert relating to FAC-008. The FRSDT believes that the requirements under FAC-008-3 are not onerous and that entities are performing the work today that will be required under FAC-008-3.

Several commenters requested clarification or edits to the standard which are outside of the scope of the Supplemental SAR. These comments will be placed in the NERC Issues Database for consideration on the next revision to the standard.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herb Schrayshuen, at 609-452-8060 or at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. Do you agree that the proposed Requirement R8 addresses the FERC Directive from Order 693, Paragraph 756? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 22

2. Do you agree with the proposed Violation Risk Factor, Time Horizon and Violation Severity Levels for requirement R8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 78

3. Do you agree with the proposed Measure M8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 89

4. Do you agree with the proposed Implementation Plan for FAC-008-3, Facility Ratings? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 94

5. If you have any other comments related to the FERC directive (paragraphs 756 and 771) and this Supplemental SAR that you have not already provided in response to the questions above, please provide them here. 98

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. | Group | Jesus Sammy Alcaraz | Imperial Irrigation District | X | | X | X | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | David Barajas | IID | WECC | 1, 3, 4 | | | | | | | | | |
| 2. | Group | Guy Zito | Northeast Power Coordinating Council | | | | | | | | | | X |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Alan Adamson | New York State Reliability Council, LLC | NPCC | 10 | | | | | | | | | |
| 2. | Gregory Campoli | New York Independent System Operator | NPCC | 2 | | | | | | | | | |
| 3. | Kurtis Chong | Independent Electricity System Operator | NPCC | 2 | | | | | | | | | |
| 4. | Sylvain Clermont | Hydro-Quebec TransEnergie | NPCC | 1 | | | | | | | | | |
| 5. | Chris de Graffenried | Consolidated Edison Co. of New York, Inc. | NPCC | 1 | | | | | | | | | |
| 6. | Gerry Dunbar | Northeast Power Coordinating Council | | 10 | | | | | | | | | |
| 7. | Brian Evans-Mongeon | Utility Services | NPCC | 8 | | | | | | | | | |
| 8. | Mike Garton | Dominion Resources Services, Inc. | NPCC | 5 | | | | | | | | | |
| 9. | Brian L. Gooder | Ontario Power Generation Incorporated | NPCC | 5 | | | | | | | | | |
| 10. | Kathleen Goodman | ISO - New England | NPCC | 2 | | | | | | | | | |
| 11. | David Kiguel | Hydro One Networks Inc. | NPCC | 1 | | | | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 12. Michael R. Lombardi | Northeast Utilities | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 13. Randy MacDonald | New Brunswick Power Transmission | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 14. Bruce Metruck | New York Power Authority | NPCC | 6 | | | | | | | | | | | | | | | | | |
| 15. Chantel Haswell | FPL Group, Inc. | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 16. Lee Pedowicz | Northeast Power Coordinating Council | NPCC | 10 | | | | | | | | | | | | | | | | | |
| 17. Robert Pellegrini | The United Illuminating Company | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 18. Saurabh Saksena | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 19. Michael Schiavone | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 20. Wayne Sipperly | New York Power Authority | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 21. Donald Weaver | New Brunswick System Operator | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 22. Ben Wu | Orange and Rockland Utilities | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 23. Peter Yost | Consolidated Edison Co. of New York, Inc. | NPCC | 3 | | | | | | | | | | | | | | | | | |
| 24. Si Truc Phan | Hydro-Quebec TransEnergie | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 3. | Group | Louis Slade | Dominion | X | | X | | X | X | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Connie Lowe | Electric Market Policy | SERC | 5, 6 | | | | | | | | | | | | | | | | |
| 2. | Mike Garton | Electric Market Policy | NPCC | 5, 6 | | | | | | | | | | | | | | | | |
| 3. | Michael Gildea | Electric Market Policy | NA - Not Applicable | 5, 6 | | | | | | | | | | | | | | | | |
| 4. | Michael Crowley | Electric Transmission | SERC | 1, 3 | | | | | | | | | | | | | | | | |
| 5. | Matt Woodzell | Fossil & Hydro | SERC | 5 | | | | | | | | | | | | | | | | |
| 6. | Jeff Bailey | Nuclear | MRO | 5 | | | | | | | | | | | | | | | | |
| 7. | Chip Humphrey | Fossil & Hydro | RFC | 5 | | | | | | | | | | | | | | | | |
| 4. | Group | Jonathan Hayes | SPP Reliability Standards Development | | | | | | | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | John Allen | City Utilities of Springfield, MO | SPP | 1, 4 | | | | | | | | | | | | | | | | |
| 5. | Group | Steve Alexanderson | Pacific Northwest Small Public Power Utility Comment Group | | | X | X | | | | | | | | | | | | X | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
|--------------------------|------------------|---|---|---------------------------------|---|---|---|---|---|---|---|---|----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Additional Member | | Additional Organization | | Region Segment Selection | | | | | | | | | |
| 1. | Dave Proebstel | Clallam County PUD No.1 | WECC 3 | | | | | | | | | | |
| 2. | Russell A. Noble | Cowlitz County PUD No. 1 | WECC 3, 4, 5 | | | | | | | | | | |
| 3. | Ronald Sporseen | Blachly-Lane Electric Cooperative | WECC 3 | | | | | | | | | | |
| 4. | Ronald Sporseen | Central Electric Cooperative | WECC 3 | | | | | | | | | | |
| 5. | Ronald Sporseen | Consumers Power | WECC 1, 3 | | | | | | | | | | |
| 6. | Ronald Sporseen | Clearwater Power Company | WECC 3 | | | | | | | | | | |
| 7. | Ronald Sporseen | Douglas Electric Cooperative | WECC 3 | | | | | | | | | | |
| 8. | Ronald Sporseen | Fall River Rural Electric Cooperative | WECC 3 | | | | | | | | | | |
| 9. | Ronald Sporseen | Northern Lights | WECC 3 | | | | | | | | | | |
| 10. | Ronald Sporseen | Lane Electric Cooperative | WECC 3 | | | | | | | | | | |
| 11. | Ronald Sporseen | Raft River Rural Electric Cooperative | WECC 3 | | | | | | | | | | |
| 12. | Ronald Sporseen | Lost River Electric Cooperative | WECC 3 | | | | | | | | | | |
| 13. | Ronald Sporseen | Salmon River Electric Cooperative | WECC 3 | | | | | | | | | | |
| 14. | Ronald Sporseen | Umatilla Electric Cooperative | WECC 3 | | | | | | | | | | |
| 15. | Ronald Sporseen | West Oregon Electric Cooperative | WECC 3 | | | | | | | | | | |
| 16. | Ronald Sporseen | Pacific Northwest Generating Cooperative | WECC 3, 4, 8 | | | | | | | | | | |
| 17. | Ronald Sporseen | Power Resources Cooperative | WECC 5 | | | | | | | | | | |
| 18. | Ronald Sporseen | Lincoln Electric Cooperative | WECC 3 | | | | | | | | | | |
| 19. | Ronald Sporseen | Coos-Curry Electric Cooperative | WECC 3 | | | | | | | | | | |
| 6. | Group | Denise Koehn | Bonneville Power Administration | X | | X | | X | X | | | | |
| Additional Member | | Additional Organization | | Region Segment Selection | | | | | | | | | |
| 1. | Richard Becker | BPA, Transmission, Substation Engineering | WECC 1 | | | | | | | | | | |
| 7. | Group | Bill Shultz | Southern Company Generation (SCG) Technical Services | | | | | | X | | | | |
| Additional Member | | Additional Organization | | Region Segment Selection | | | | | | | | | |
| 1. | Bill Shultz | Southern Company Generation | SERC 5 | | | | | | | | | | |
| 2. | Terry Crawley | Southern Company Generation | SERC 5 | | | | | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
|---|-------------------|---------------------------------|------------------------------------|--------------------------------|---|---|---|---|---|---|---|---|----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 8. | Group | Mikhail Flakovich | Public Service Enterprise Group | X | | X | | X | X | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Peter Dolan | PSEG Power | ERCOT | 5, 6 | | | | | | | | | |
| 2. | Mikhail Falkovich | PSEG Power | ERCOT | 5, 6 | | | | | | | | | |
| 3. | Ken Brown | PSE&G | RFC | 1, 3 | | | | | | | | | |
| 4. | Clint Bogan | PESG Power | NPCC | 5, 6 | | | | | | | | | |
| 5. | Scott Slickers | PSEG Power | RFC | 5, 6 | | | | | | | | | |
| 9. | Group | Bruce Wertz | NERC Standards Review Subcommittee | | | | | X | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Tim Soles | Occidental Power Services, Inc. | ERCOT | 5 | | | | | | | | | |
| 10. | Group | Marie Knox | MISO Standards Collaborators | | X | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Sam Ciccone | First Energy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | |
| 2. | Doug Hohlbaugh | First Energy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | |
| 3. | Jim Cyrulewski | JDRJC Associates | RFC | 8 | | | | | | | | | |
| 11. | Group | Greg Campoli | IRC Standards Review Committee | | X | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Patrick Brown | PJM | RFC | 2 | | | | | | | | | |
| 2. | Steve Myers | ERCOT | ERCOT | 2 | | | | | | | | | |
| 3. | Charles Yeung | SPP | SPP | 2 | | | | | | | | | |
| 4. | Matt Goldberg | ISO-NE | NPCC | 2 | | | | | | | | | |
| 5. | Ben Li | IESO | NPCC | 2 | | | | | | | | | |
| 6. | Terry Bilke | MISO | MRO | 2 | | | | | | | | | |
| 7. | Bill Phillips | MISO | MRO | 2 | | | | | | | | | |
| 8. | Mark Westendorf | MISO | MRO | 2 | | | | | | | | | |
| 9. | Mark Thompson | AESO | WECC | 2 | | | | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | | | | | | | | | |
|----------------------|--------------------|------------------------------------|--------------------------------|---|---|---|---|---|---|---|---|----|--|--|--|--|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 10. Al DiCaprio | PJM | RFC | 2 | | | | | | | | | | | | | | | | | |
| 11. Kathleen Goodman | ISO-NE | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 12. Greg Van Pelt | CAISO | WECC | 2 | | | | | | | | | | | | | | | | | |
| 13. Don Weaver | NBSO | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 14. Mike Falvo | IESO | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 12. Individual | Sandra Shaffer | PacifiCorp | | X | | X | | X | | | | | | | | | | | | |
| 13. Individual | JT Wood | Southern Company Transmission | | X | | X | | | | | | | | | | | | | | |
| 14. Individual | Mike Laney | Luminant Power | | | | | | X | | | | | | | | | | | | |
| 15. Individual | Cynthia Oder | SRP | | X | | X | | X | X | | | | | | | | | | | |
| 16. Individual | Jonathan Appelbaum | United Illuminating Company | | X | | | | | | | | | | | | | | | | |
| 17. Individual | Nathaniel Larson | New Harquahala Generating Co. | | X | | | | X | | | | | | | | | | | | |
| 18. Individual | Dan Roethemeyer | Dynegy Inc. | | | | | | X | | | | | | | | | | | | |
| 19. Individual | Thad Ness | American Electric Power | | X | | X | | X | X | | | | | | | | | | | |
| 20. Individual | Robert Casey | Georgia Transmission Corporation | | X | | | | | | | | | | | | | | | | |
| 21. Individual | Jack Stamper | Clark Public Utilities | | X | | | | | | | | | | | | | | | | |
| 22. Individual | John Bee | Exelon | | X | | X | | X | | | | | | | | | | | | |
| 23. Individual | Edvina Uzunovic | The Valley Group, a Nexans company | | X | X | | | | | | | | | | | | | | | |
| 24. Individual | Ed Davis | Entergy Services, Inc | | X | | X | | X | X | | | | | | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
|------------------|------------|--------------------|--|--------------------------------|---|---|---|---|---|---|---|---|----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 25. | Individual | Kirit Shah | Ameren | X | | X | | X | X | | | | |
| 26. | Individual | David Thorne | Pepco Holdings Inc | X | | X | | | | | | | |
| 27. | Individual | Joe Petaski | Manitoba Hydro | X | | X | | X | X | | | | |
| 28. | Individual | Patricia Robertson | BC Hydro and Power Authority | X | X | X | | X | | | | | |
| 29. | Individual | Andrew Pusztai | American Transmission Company, LLC | X | | | | | | | | | |
| 30. | Individual | Brian Jacoby | BGE | X | | | | | | | | | |
| 31. | Individual | Darrin Adams | East Kentucky Power Cooperative | X | | X | | X | | | | | |
| 32. | Individual | Tony Kroskey | Brazos Electric Power Cooperative | X | | X | | X | | | | | |
| 33. | Individual | Jim Keller | We Energies | | | | | | | | | | |
| 34. | Individual | Claudiu Cadar | GDS Associates | X | | | | | | | | | |
| 35. | Individual | Bill Middaugh | Tri-State G&T | X | | | | | | | | | |
| 36. | Individual | Rex Roehl | Indeck Energy Services | | | | | X | | | | | |
| 37. | Individual | Michael Schiavone | Niagara Mohawk (National Grid Company) | | | X | | | | | | | |
| 38. | Individual | Saurabh Saksena | National Grid | X | | X | | | | | | | |
| 39. | Individual | RoLynda Shumpert | South Carolina Electric and Gas | X | | X | | X | X | | | | |
| 40. | Individual | Dennis Sismaet | Seattle City Light | | | | | | X | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
|------------------|------------|-------------------|------------------------------------|--------------------------------|---|---|---|---|---|---|---|---|----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 41. | Individual | Jason L. Marshall | ACES Power Marketing | | | | | | X | | | | |
| 42. | Individual | Armin Klusman | CenterPoint Energy | X | | | | | | | | | |
| 43. | Individual | Terri Pyle | Oklahoma Municipal Power Authority | | | | X | | | | | | |
| 44. | Individual | B. Vijayraghavan | Pacific Gas & electric Company | X | | | | | | | | | |
| 45. | Individual | Alice Ireland | Xcel Energy | X | | X | | X | X | | | | |

The following balloters submitted comments either with a comment form or with their ballot:

| | Balloter | Company | Industry Segment |
|-----|-------------------------------|---------------------------------------|-------------------------|
| 1. | Edward P. Cox | AEP Marketing | 6 |
| 2. | Richard J. Mandes | Alabama Power Company | 3 |
| 3. | Kirit S. Shah | Ameren Services | 1 |
| 4. | Paul B. Johnson | American Electric Power | 1 |
| 5. | Andrew Z Puztai | American Transmission Company, LLC | 1 |
| 6. | John Bussman | Associated Electric Cooperative, Inc. | 1 |
| 7. | James Armke | Austin Energy | 1 |
| 8. | Gregory S Miller | Baltimore Gas & Electric Company | 1 |
| 9. | Venkataramakrishnan Vinnakota | BC Hydro | 2 |
| 10. | Patricia Robertson | BC Hydro and Power Authority | 1 |
| 11. | Pat G. Harrington | BC Hydro and Power Authority | 3 |
| 12. | Clement Ma | BC Hydro and Power Authority | 5 |
| 13. | Donald S. Watkins | Bonneville Power Administration | 1 |
| 14. | Rebecca Berdahl | Bonneville Power Administration | 3 |
| 15. | Francis J. Halpin | Bonneville Power Administration | 5 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|--------------------|--|-------------------------|
| 16. | Dave Markham | Central Electric Cooperative, Inc. (Redmond, Oregon) | 3 |
| 17. | Steve Alexanderson | Central Lincoln PUD | 3 |
| 18. | Shamus J Gamache | Central Lincoln PUD | 4 |
| 19. | Kevin L Howes | Central Maine Power Company | 1 |
| 20. | John Yale | Chelan County Public Utility District #1 | 5 |
| 21. | Andrew Gallo | City of Austin dba Austin Energy | 3 |
| 22. | Reza Ebrahimian | City of Austin dba Austin Energy | 4 |
| 23. | Lisa L Martin | City of Austin dba Austin Energy | 6 |
| 24. | Linda R. Jacobson | City of Farmington | 3 |
| 25. | Jeff Mead | City of Grand Island | 5 |
| 26. | Bill Hughes | City of Redding | 3 |
| 27. | Nicholas Zettel | City of Redding | 4 |
| 28. | Paul A Cummings | City of Redding | 5 |
| 29. | Marvin Briggs | City of Redding | 6 |
| 30. | Chang G Choi | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | 1 |
| 31. | Max Emrick | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | 5 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|------------------------------|---|-------------------------|
| 32. | Michelle A Corley | Cleco Corporation | 3 |
| 33. | Stephanie Huffman | Cleco Power | 5 |
| 34. | Robert Hirschak | Cleco Power LLC | 6 |
| 35. | Paul Morland | Colorado Springs Utilities | 1 |
| 36. | Lisa Cleary | Colorado Springs Utilities | 3 |
| 37. | Jennifer Eckels | Colorado Springs Utilities | 5 |
| 38. | Lisa C Rosintoski | Colorado Springs Utilities | 6 |
| 39. | Christopher L de Graffenried | Consolidated Edison Co. of New York | 1 |
| 40. | Peter T Yost | Consolidated Edison Co. of New York | 3 |
| 41. | Wilket (Jack) Ng | Consolidated Edison Co. of New York | 5 |
| 42. | Nickesha P Carrol | Consolidated Edison Co. of New York | 6 |
| 43. | Carolyn Ingersoll | Constellation Energy | 3 |
| 44. | Brenda Powell | Constellation Energy Commodities Group | 6 |
| 45. | Amir Y Hammad | Constellation Power Source Generation, Inc. | 5 |
| 46. | James B Lewis | Consumers Energy | 5 |
| 47. | Roman Gillen | Consumers Power Inc. | 3 |
| 48. | Roger Meader | Coos-Curry Electric Cooperative, Inc | 3 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|----------------------|---|-------------------------|
| 49. | Russell A Noble | Cowlitz County PUD | 3 |
| 50. | Rick Syring | Cowlitz County PUD | 4 |
| 51. | Bob Essex | Cowlitz County PUD | 5 |
| 52. | Dave Sabala | Douglas Electric Cooperative | 3 |
| 53. | Sally Witt | East Kentucky Power Coop. | 3 |
| 54. | Joel T Plessinger | Entergy | 3 |
| 55. | Edward J Davis | Entergy Services, Inc. | 1 |
| 56. | Terri F Benoit | Entergy Services, Inc. | 6 |
| 57. | Claudiu Cadar | GDS Associates, Inc. | 1 |
| 58. | Anthony L Wilson | Georgia Power Company | 3 |
| 59. | Harold Taylor, II | Georgia Transmission Corporation | 1 |
| 60. | Robert Solomon | Hoosier Energy Rural Electric Cooperative, Inc. | 1 |
| 61. | Ajay Garg | Hydro One Networks, Inc. | 1 |
| 62. | David L Kiguel | Hydro One Networks, Inc. | 3 |
| 63. | Bernard Pelletier | Hydro-Quebec TransEnergie | 1 |
| 64. | Ronald D. Schellberg | Idaho Power Company | 1 |
| 65. | Tino Zaragoza | Imperial Irrigation District | 1 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|---------------------|---|-------------------------|
| 66. | Jesus S. Alcaraz | Imperial Irrigation District | 3 |
| 67. | Diana U Torres | Imperial Irrigation District | 4 |
| 68. | Kim Warren | Independent Electricity System Operator | 2 |
| 69. | Kathleen Goodman | ISO New England, Inc. | 2 |
| 70. | John J Babik | JEA | 5 |
| 71. | Michael Henry | Lincoln Electric Cooperative, Inc. | 3 |
| 72. | Charles A. Freibert | Louisville Gas and Electric Co. | 3 |
| 73. | Tom Foreman | Lower Colorado River Authority | 5 |
| 74. | Mike Laney | Luminant Generation Company LLC | 5 |
| 75. | Joseph G. DePoorter | Madison Gas and Electric Co. | 4 |
| 76. | Joe D Petaski | Manitoba Hydro | 1 |
| 77. | Greg C. Parent | Manitoba Hydro | 3 |
| 78. | S N Fernando | Manitoba Hydro | 5 |
| 79. | Daniel Prowse | Manitoba Hydro | 6 |
| 80. | Danny Dees | MEAG Power | 1 |
| 81. | Steven Grego | MEAG Power | 5 |
| 82. | Terry Harbour | MidAmerican Energy Co. | 1 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|-------------------|--|-------------------------|
| 83. | Marie Knox | Midwest ISO, Inc. | 2 |
| 84. | Don Horsley | Mississippi Power | 3 |
| 85. | Spencer Tacke | Modesto Irrigation District | 4 |
| 86. | Steven M. Jackson | Municipal Electric Authority of Georgia | 3 |
| 87. | Tim Reed | Muscatine Power & Water | 1 |
| 88. | John S Bos | Muscatine Power & Water | 3 |
| 89. | Saurabh Saksena | National Grid | 1 |
| 90. | Randy MacDonald | New Brunswick Power Transmission Corporation | 1 |
| 91. | Arnold J. Schuff | New York Power Authority | 1 |
| 92. | Gerald Mannarino | New York Power Authority | 5 |
| 93. | William Palazzo | New York Power Authority | 6 |
| 94. | Raymond P Kinney | New York State Electric & Gas Corp. | 1 |
| 95. | Guy V. Zito | Northeast Power Coordinating Council, Inc. | 10 |
| 96. | Michelle DAntuono | Occidental Chemical | 5 |
| 97. | Ray Ellis | Okanogan County Electric Cooperative, Inc. | 3 |
| 98. | Terri Pyle | Oklahoma Municipal Power Authority | 4 |
| 99. | Colin Anderson | Ontario Power Generation Inc. | 5 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|------|--------------------------|---|-------------------------|
| 100. | Ballard Keith Mutters | Orlando Utilities Commission | 3 |
| 101. | Richard Kinas | Orlando Utilities Commission | 5 |
| 102. | Claston Augustus Sunanon | Orlando Utilities Commission | 6 |
| 103. | John H Hagen | Pacific Gas and Electric Company | 3 |
| 104. | Richard J. Padilla | Pacific Gas and Electric Company | 5 |
| 105. | John C. Collins | Platte River Power Authority | 1 |
| 106. | Terry L Baker | Platte River Power Authority | 3 |
| 107. | Pete Ungerman | Platte River Power Authority | 5 |
| 108. | Carol Ballantine | Platte River Power Authority | 6 |
| 109. | David Thorne | Potomac Electric Power Co. | 1 |
| 110. | Kenneth D. Brown | Public Service Electric and Gas Co. | 1 |
| 111. | Jeffrey Mueller | Public Service Electric and Gas Co. | 3 |
| 112. | Chad Bowman | Public Utility District No. 1 of Chelan County | 1 |
| 113. | Hugh A. Owen | Public Utility District No. 1 of Chelan County | 6 |
| 114. | John D. Martinsen | Public Utility District No. 1 of Snohomish County | 4 |
| 115. | Greg Lange | Public Utility District No. 2 of Grant County | 3 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|------|---------------------|---------------------------------------|-------------------------|
| 116. | Heber Carpenter | Raft River Rural Electric Cooperative | 3 |
| 117. | Anthony E Jablonski | ReliabilityFirst Corporation | 10 |
| 118. | John C. Allen | Rochester Gas and Electric Corp. | 1 |
| 119. | Tim Kelley | Sacramento Municipal Utility District | 1 |
| 120. | James Leigh-Kendall | Sacramento Municipal Utility District | 3 |
| 121. | Mike Ramirez | Sacramento Municipal Utility District | 4 |
| 122. | Bethany Hunter | Sacramento Municipal Utility District | 5 |
| 123. | Claire Warshaw | Sacramento Municipal Utility District | 6 |
| 124. | Ken Dizes | Salmon River Electric Cooperative | 3 |
| 125. | Robert Kondziolka | Salt River Project | 1 |
| 126. | John T. Underhill | Salt River Project | 3 |
| 127. | Glen Reeves | Salt River Project | 5 |
| 128. | Pawel Krupa | Seattle City Light | 1 |
| 129. | Dana Wheelock | Seattle City Light | 3 |
| 130. | Hao Li | Seattle City Light | 4 |
| 131. | Michael J. Haynes | Seattle City Light | 5 |
| 132. | Dennis Sismaet | Seattle City Light | 6 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|------|---------------------|--------------------------------------|-------------------------|
| 133. | Carter B. Edge | SERC Reliability Corporation | 10 |
| 134. | Rich Salgo | Sierra Pacific Power Co. | 1 |
| 135. | Long T Duong | Snohomish County PUD No. 1 | 1 |
| 136. | Mark Oens | Snohomish County PUD No. 1 | 3 |
| 137. | William D Shultz | Southern Company Generation | 5 |
| 138. | Robert A Schaffeld | Southern Company Services, Inc. | 1 |
| 139. | Charles H Yeung | Southwest Power Pool | 2 |
| 140. | Noman Lee Williams | Sunflower Electric Power Corporation | 1 |
| 141. | Travis Metcalfe | Tacoma Public Utilities | 3 |
| 142. | Keith Morisette | Tacoma Public Utilities | 4 |
| 143. | Michael C Hill | Tacoma Public Utilities | 6 |
| 144. | Larry Akens | Tennessee Valley Authority | 1 |
| 145. | Ian S Grant | Tennessee Valley Authority | 3 |
| 146. | David Thompson | Tennessee Valley Authority | 5 |
| 147. | Marjorie S. Parsons | Tennessee Valley Authority | 6 |
| 148. | Tracy Sliman | Tri-State G & T Association, Inc. | 1 |
| 149. | John Tolo | Tucson Electric Power Co. | 1 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|------|----------------------|--|-------------------------|
| 150. | Melissa Kurtz | U.S. Army Corps of Engineers | 5 |
| 151. | Martin Bauer P.E. | U.S. Bureau of Reclamation | 5 |
| 152. | Steve Eldrige | Umatilla Electric Cooperative | 3 |
| 153. | Jonathan Appelbaum | United Illuminating Co. | 1 |
| 154. | Steven L. Rueckert | Western Electricity Coordinating Council | 10 |
| 155. | Anthony Jankowski | Wisconsin Energy Corp. | 4 |
| 156. | Gregory L Pieper | Xcel Energy, Inc. | 1 |
| 157. | Michael Ibold | Xcel Energy, Inc. | 3 |
| 158. | Roger C Zaklukiewicz | | 8 |

1. Do you agree that the proposed Requirement R8 addresses the FERC Directive from Order 693, Paragraph 756? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: Many commenters had concerns with the language of the new Requirement R8 and its parts and subparts. The three main concerns were 1) entities who could request the information, 2) limiting the information to thermal ratings and 3) terms like "major city" and "load pocket".

The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket.

With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.

The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.

The FRSDT also modified R8, Part 8.2.2 to change the term, "Equipment Rating" to "Thermal Rating" for clarity in support of stakeholder comments.

The proposed clarified Requirement R8 is shown below:

8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that ~~limits the use of Facilities under the requester's authority by causing the requester has identified as having any of the following:~~ 1) ~~A an~~ Interconnection Reliability Operating Limit, 2) ~~A limitation ing-~~ of Total Transfer Capability, 3) ~~An impediment ng~~ to generator deliverability, or 4) ~~An impediment to-impeding~~ service to a major ~~city or~~ load ~~center-pocket~~:

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

8.2.1 Identity of the existing next most limiting equipment of the Facility

8.2.2 The ~~Equipment Thermal~~ Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

No other revisions were made to the standard except for minor Measure and VSL clarifications.

| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|--|
| Ontario Power Generation Inc. – Colin Anderson | | <p>1. OPG disagrees with the requirement to provide "Limiting Equipment" information as specified in Requirement 8.1.2. It remains unclear as to what reliability purpose would be served by the provision of this information. Maintenance of this type of information would be onerous, and particularly in light of its questionable utility, OPG sees no need to undertake such work.</p> <p>2. For the same reasons listed above, Requirement 8.2 is completely unnecessary.</p> <p>3. All other elements of the standard that refer to either of the above Requirements need to be deleted or amended.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The background material was provided with the posting of the standard. During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour</p> | | |

² When this column is blank, it indicates a comment that was submitted with a ballot but not via the electronic comment form. Some commenters submitted duplicate comments with their ballot and via the electronic comment form; in this case, the Yes or No column is marked with their response in the electronic comment form.

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Yes or No ² | Question 1 Comment |
|---|------------------------|--|
| rating or some other value. | | |
| JEA – John J Babik | | <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits USE OF the Requester’s FacilitiES by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| Associated Electric Cooperative, Inc. | | <p>AECI wants to thank the team for their efforts. However, the time period to respond is only 30 days. The current version (R5) allows for 45 days and AECI believes when an entity needs to perform research on a request that requires interaction with adjacent entities 60 days would be more appropriate.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for your comment. Requirement 5 has a 45 day provision for responding to comments on the technical review of your methodology or documentation. As envisioned, the information necessary to comply with R7 and R8 should be readily available and accessible by entities. The SDT believes that a 30 day response is adequate.</p> | | |
| Constellation Energy – Carolyn Ingersoll | | <p>Although CECD believes that the proposed edits to R8 satisfies the FERC Order related to facility ratings, there are vague terms that need to be clarified in order for the standard to be acceptable. As an example, the term “impeding generator deliverability” needs to be better defined so that GOs and GOPs can better prepare for any request on its next most limiting piece of equipment.</p> |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|---|
| Constellation Energy Commodities Group – Brenda Powell | | Although Constellation Energy Commodities Group believes that the proposed edits to R8 satisfies the FERC Order related to facility ratings, there are vague terms that need to be clarified in order for the standard to be acceptable. As an example, the term “impeding generator deliverability” needs to be better defined so that GOs and GOPs can better prepare for any request on its next most limiting piece of equipment. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Constellation Power Source Generation, Inc. – Amir Y Hammad | | Although Constellation Power Generation believes that the proposed edits to R8 satisfies the FERC Order related to facility ratings, there are vague terms that need to be clarified in order for the standard to be acceptable. As an example, the term “impeding generator deliverability” needs to be better defined so that GOs and GOPs can better prepare for any request on its next most limiting piece of equipment. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary</p> | | |

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| Consideration above. | | |
| Northeast Power Coordinating Council, Inc. – Guy V. Zito | | Although the intent of the FERC Directive was met and might have even been exceeded in the view of some, there is question on what constitutes "major city or load pocket" in the revised document. NPCC is hesitant to support this wording due to a lack of definition of these terms and how an entity would apply them. There could be inconsistencies and issues with the Requirement as written. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Consumers Energy – James B Lewis | | As a Generator Owner, I believe the concept of "Thermal Rating" is quite poorly defined. This concept comes in in R8.2 as follows: "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:" If a boiler has too much reflective ash on its waterwalls, this heat transfer (Thermal) issue may certainly limit "generator deliverability". Similar issues arise in poor thermal performance of a fouled condenser, a feedwater heater, an air preheater, a steam turbine, or a gas turbine. All these have some sort of "Thermal Rating" that impacts "generator deliverability". Thus, the proposed Standard grossly over-reaches. |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8 is applicable to only the Generation Owners that are subject to Requirement R2. Requirement R2, requires Generator Owners that own transmission equipment (e.g. the local switchyard associated with a generating station) to provide comparable ratings and equipment information as a Transmission owner (as in Requirement R3). If a Generator Owner is not subject to Requirement R2, that same Generator Owner is not subject to Requirement R8.</p> | | |

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| Public Service Electric and Gas Co.- Kenneth D. Brown; Jeffrey Mueller | | <p>Comment #1 PSEG suggests numbering the 4 scenarios in section 8.2, similar to how it was numbered in the FERC paragraph 756. Also, the FERC paragraph used the word “causing” but the standard used the word “having”. Therefore it would read as: “Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as causing one of the following 1. An Interconnection Reliability Operating Limit (IROL); 2. A limitation of Total Transfer Capability,; 3. Impeding generator deliverability, or; 4. Impeding service to a major city or load pocket.”</p> <p>Comment #2: Would the requesting entity be allowed to ask for this data at each of the registered entity’s facilities at the same time, or would it only be one facility at a time?</p> |
| <p>Response: The FRSDT thanks you for your comment. #1 - The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, the SDT accepts the proposed change. The Requirement does not address the process of asking for these data; however, as noted by the commenter, information related to the next most limiting equipment is restricted to the subset of facilities defined in Requirement R8, Part 8.2.</p> <p>#2 – The requirement is written such that a requesting entity may ask for any and all relevant information during a single request provided that the Facilities meet the criteria in the requirement.</p> | | |
| New York Power Authority – Gerald Mannarino | | <p>Comments: Requirement 8.2. - Need to clarify what constitutes a major city or load pocket. Requirement 8.1.2. - Believe that this would be applicable to each individual Normal and Emergency rating thus required to be provided. Believe that the proposed revision has gone beyond the intent of the FERC Directive. Requirement 8.2.2. - should state “The equipment’s Thermal Rating”</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous</p> | | |

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| <p>interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Cowlitz County PUD Rick Syring Bob Essex</p> | | <p>Cowlitz is concerned that auditors will subjectively require evidence of the second most limiting facility has been identified regardless of whether there has been a request for such information from the RC, PC, TP, TO, or TOP. This is not to imply that the standard needs further revision; however the SDT needs to document fully its intent.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT believes that Requirement R8, Part 8.2 is clear in that data needs to be for a subset of facilities if and when it is requested by a Reliability Coordinator, Planning Coordinator, Transmission Planner, Transmission Owner or Transmission Operator that has authority for the specific Facility.</p> | | |
| <p>Cowlitz County PUD Russell A Noble</p> | | <p>Cowlitz is concerned that auditors will subjectively require evidence of the second most limiting facility has been identified regardless of whether there has been a request for such information from the RC, PC, TP, TO, or TOP. This is not to imply that the standard needs further revision; however the SDT needs to document fully its intent that such information must only be made available on request of the RC, PC, TP, TO or TOP and not the auditor.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT believes that Requirement R8, Part 8.2 is clear in that data needs to be for a subset of facilities if and when it is requested by a Reliability Coordinator, Planning Coordinator, Transmission Planner, Transmission Owner or Transmission Operator that has authority for the specific Facility.</p> | | |
| <p>Tucson Electric Power Co. John Tolo</p> | | <p>Disagreement with R 8.2</p> |
| <p>Occidental Chemical Michelle DAntuono</p> | | <p>Even though the language of the requirement exactly paraphrases FERC’s directive, it introduces ambiguity which likely does not meet their intent. For example, in R8.2 the term “major city or load pocket” will be interpreted dissimilarly by planners in different regions of the country. A clear distinction similar to the transmission terms “IROL” and “TTC” needs to be used instead. Secondly, there appears to be no minimum threshold set in R8.2 for a Facility “impeding generator deliverability”. Auditors can (and do) use their own judgment</p> |

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| | | <p>when they come across indefinite phrases like this. Every minor generator augment will arguably require the establishment of secondary ratings on the corresponding BES interconnection Facility as this is written.</p> |
| <p>Response: The FRSDT thanks you for your comment.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Requirement R8, Part 8.2 and its subparts only apply to transmission facilities that are owned by a Generator Owner.</p> | | |
| <p>City of Farmington</p> | | <p>FEUS appreciates the efforts of the drafting team. However, FEUS does not support the standard as currently drafted. FEUS recommends the drafting team define 'major cities' and 'load pockets.'</p> <p>In addition, clarify that the Transmission Owners and applicable Generation Owners only have to determine the amount and identity of the next-most limiting piece of equipment associated with the facility limit upon request. In other words, the next most limiting equipment and rating is not required to be determined on all facilities (readily available) - upon request, the TO or GO will have 30 days (or so) to determine and respond according. Finally, the next most limiting equipment should not be required if the most limiting equipment is the conductor.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to</p> | | |

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| <p>more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Cleco Power Michelle A Corley Stephanie Huffman; Robert Hirschak</p> | | <p>Finally, in R7 & R8, the schedule should not be determined by the requesting entity. Replace "as scheduled by such requesting entities" with " within 30 calendar days of receipt of request."</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8, Part 8.2 limits delivery of such data to within 30 calendar days.</p> | | |
| <p>Hydro One Networks, Inc. – David L Kiguel</p> | | <p>Hydro One Networks Inc. is casting a Negative vote with the following comments. We thank the Drafting Team for trying to develop a compromise solution between the overwhelming view of the industry regarding the ratings of facilities when the most limiting equipment constraint is removed and the subsequent FERC clarification on the September 16, 2010 Order. However, the proposed solution needs further work.</p> <p>As written, Requirement 8.2 goes beyond what is mandated in the FERC Orders and clarifications. This requirement should be deleted altogether as it serves no reliability purpose within what NERC Reliability Standards purview is. In addition, the proposed Requirement 8.2 uses the terms "major city" and "load pocket" without further clarification. Not only these terms do not belong in a NERC Reliability Standard but are subject to interpretations that would make its usage potentially inconsistent by different entities.</p> <p>We believe that FERC's Orders would be addressed by deleting 8.2 and just modifying Requirement 8.1.2 to explicitly state that the identification of the most limiting equipment</p> |

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| | | applies to both Normal and Emergency ratings. |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above. Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond “Normal” and “Emergency” ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| <p>Manitoba Hydro – Joe D Petaski; Greg C. Parent; S N Fernando; Daniel Prowse</p> | | <p>In Diagram 1 of the Unofficial Comment Form, it is obvious that if a transmission owner provides a continuous and a shorter term rating, the continuous rating of the facility is based on Equipment 3 and the shorter term rating is based on Equipment 2. There is no need to provide two continuous and two shorter term ratings from a reliability perspective.</p> <p>-It is not clear which facilities the additional thermal rating information will be required for as it is open to interpretation whether a facility is actually an impediment to generator deliverability or load serving.</p> |
| <p>Response: The FRSDT thanks you for your comment. For the situation that you mention, there would be no need to provide two sets of continuous and short term ratings unless these were requested by an entity per Requirement R8 and all of its Parts. Per the information in the comment form:</p> | | |

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| | | <p><i>For this example, Requirement R8, Part 1 and its sub-parts requires a Transmission Owner (and the Generator Owner that must comply with Requirement R2) to provide two data points as scheduled by requesting entities.</i></p> <ul style="list-style-type: none"> <i>• For the Continuous Rating: The Facility Rating (the Equipment Rating of E3) and identification of the most limiting equipment of the Facility (E3).</i> <i>• For the Shorter Term Rating: The Facility Rating (the Equipment Rating for E2) and identification of the most limiting equipment of the Facility (E2).</i> <p><i>For this example, Requirement R8, Part 2 and its sub-parts requires a Transmission Owner (and the Generator Owner that must comply with Requirement R2) to provide four data points upon request for a specific subset of Facilities.</i></p> <ul style="list-style-type: none"> <i>• For the Continuous Rating: Identification of the existing next most limiting equipment of the Facility (E2) and its Equipment Rating.</i> <i>• For the Shorter Term Rating: Identification of the existing next most limiting equipment of the Facility (E1) and its Equipment Rating.</i> <p>The diagram only indicates one possible example of a Facility with these types of ratings. The requestor should specify the Facility and the Facility Ratings information that they desire for applicable Facilities under Requirement R8.</p> <p>The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. The additional Thermal Ratings to be provided under Requirement R8 apply to transmission Facilities owned by a Transmission Owner or a Generator Owner. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> |
| ISO New England, Inc. – | | ISO-NE would support adoption of this Standard with the following modifications to the current red-lined version: add the phrase "applicable to each individual Normal and |

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| Kathleen Goodman | | Emergency rating required to be provided" at the end of 8.1.2 and delete 8.2 altogether, as it is only a repeat of 8.1 and is not needed. |
| <p>Response: The FRSDT thanks you for your comment. The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2. Parts 8.1 and 8.2 are not duplicative. Requirement R8, Part 8.2 relates to a "next most limiting" equipment while Requirement R8, Part 8.1 relates to the "most limiting" equipment. Without Part 8.2, the FRSDT does not believe that the requirements meet the FERC Directives.</p> | | |
| Hydro-Quebec TransEnergie – Bernard Pelletier | | It's not clear how to determine a city as Major (size, population, density). Hydro-Quebec has different functions as Transmission Owner, Transmission Planner, Reliability Coordinator, LSE, etc we would know how to determine a Major City. Major city must be clarified. Same as the definition of the load pocket to be clarified. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above</p> <p>.</p> <p>Also Requirement 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |
| Louisville Gas and Electric Co.- Charles A. Freibert | | LG&E and KU Energy have concerns about this modification. There are concerns as to how the limiting equipment data will be provided to the associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) |

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| | | and Transmission Operator(s). For LG&E and KU Energy, most (if not all) of the ratings communications are through Power Flow model updates or portal updates on the RC's website which do not have a means to update a field for the Limiting Element. The major concern is that this information MUST be provided as scheduled and not "as requested". It is unclear whether this allows for an RC/TOP/BA to "NOT" schedule it as an option. |
| <p>Response: The FRSDT thanks you for your comment. The information is to be provided only upon request. The standard remains silent on the format of the information. It is expected that entities requesting the information will do so with a preferred format suggestion or the two entities will coordinate with each other on an appropriate format.</p> | | |
| Sierra Pacific Power Co.- Rich Salgo | | Negative vote is provided due to ambiguity in the proposed language of sections 8.2 and 8.2.2. These sections do not make clear the intent of the proposed R8, that the demonstration of impact is only for a thermal limit of a Facility on another's system. |
| <p>Response: The FRSDT thanks you for your comment. The SDT has modified the language to make this distinction clear. Please see revised language in the Summary Consideration above.</p> | | |
| Wisconsin Energy Corp. Anthony Jankowski | | R8 applies only to Generator Owners subject to R2, that is, those who own the GSU and high-voltage leads to the transmission interconnection point. This Requirement needs to be clarified to indicate whether it applies only to the equipment between the GSU and the transmission interconnection point, or if it applies to all the equipment between the generator and the interconnection point. We maintain that the changes based on the FERC directive should not be applied to Generator Owners. The connection from the generator to the transmission system is a radial connection which by its nature does not significantly impact the power transfer capability across the Bulk Electric System. The effort and cost for Generator Owners to be subject to these additional requirements is not accompanied by an increase in reliability, and is therefore not justified. |
| <p>Response: The FRSDT thanks you for your comment. The clarification that you suggest is contained in R2 and is not necessary to repeat in R8.</p> | | |
| Consolidated Edison Co. of New York Christopher L de Graffenried | | <p>RELIABILITY CONCERNS:</p> <p>(1) Key terms and phrases are undefined, including "most limiting," "next most limiting," "impediment," "impediment to generation deliverability," "impediment to service" and</p> |

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| Peter T Yost Wilket (Jack) Ng Nickesha P Carrol | | <p>“major cities or load pockets.”</p> <p>(2) The event graph provided along with the proposed standard fully illustrates the complication/confusion created by the proposed wording. There is a different Element and rating reported depending upon the event duration used. Each element in the graph may be the “most limiting” or “next most limiting” Element at any point, depending upon the duration selected for reporting purposes. This problem needs to be addressed.</p> <p>(3) There is no Guidance documents to clarify the reliability standard’s requirements and meaning.</p> <p>COMMENTS WITH QUESTIONS:</p> <p>1. The drafting team needs to define the following terms a. “most limiting,” b. “next most limiting,” c. “impediment to generation deliverability,” d. “impediment to service,” and e. “major cities or load pockets”</p> <p>2. The drafting team needs to provide guidance on the meaning, scope and use of the word “impediment” as it is used in the terms “impediment to generation deliverability,” and “impediment to service.” a. What are the limitations of any “impediment,” e.g., 0.1%, 1%, 5% or 10% of what measure(s), the Facility Rating? b. Is there a dead band within or threshold below which the impediment is not material, e.g., +/-5%, and beyond which it is material? c. What is the reach of any impediment, e.g. within a substation, 1 mile, 10 miles (across a load area), 100 miles (across an interface), across a Balancing Authority (NYISO), or 1,000 miles (across the Eastern Interconnection)?</p> <p>3. The drafting team needs to provide guidance on the meaning, scope and use of the phrases “most limiting” and “next most limiting” Facility or Element. a. What are the timeframe (refer to event graph), rating type(s) and duration sought, e.g., normal conditions, short term or long-term exceedance? b. What is the context of the ratings sought, e.g., normal operation, N-1 contingency, with or without cooling? c. Is reporting applicable to a particular time, day, period or season, e.g., 14:00 hrs., July 6th peak, or Summer and Winter ratings? d. Is the reporting average, normalized, typical, maximum, at some temperature, e.g., 4 hr. max. rating at 86°F, 1 hr. max. normalized to 70°F, with or without forced cooling, at an 82°F cooling sink temperature (air, river or ocean)?</p> <p>4. The drafting team should consider producing a Guidance Document with definitions, example uses and a Frequently Asked Questions (FAQ) section to provide the industry</p> |

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| | | assistance and guidance. 5. What, if any, are respondent's obligations under R8.2 for areas or regions where IROL's or TTC are not limiting or are not used? |
| <p>Response: The FRSDT thanks you for your comment. Requirement R2, Part 2.3 and Requirement R3, Part 3.3 both refer to the "most limiting applicable Equipment Rating". The SDT believes that the meaning of "most limiting" is clear when read in context. Similarly, the SDT believes, 'next most limiting' is also clear when read in context. The SDT has responded to commenter's suggestions for clarity involving the relationship between the Facility and the Requester, as well as clarification related to thermal capabilities of the equipment referred to in Requirement R8, Part 8.2. The SDT believes that these clarifications largely address this commenter's concerns.</p> <p>For your suggestion regarding defining "most limiting", etc. The FRSDT does not believe that these terms need to be a defined term in the NERC Glossary.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Guidance documents: Drafting teams are not under obligation to develop guidance documents for each standard. The incremental change to this standard is related to Requirement 8, Part 8.2. The FRSDT believes that sufficient guidance has been provided in the background material of the comment form.</p> | | |
| ReliabilityFirst Corporation – Anthony E Jablonski | | ReliabilityFirst generally agrees with the standard but has the following comments. 1. Why is there a parenthetical around the "and each Generator Owner subject to Requirement R2" language in R8? R2 is applicable to Generator Owners (with no qualifications) so therefore R8 is also applicable to Generator Owners. The beginning of |

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| | | <p>R8 should simply state “Each Transmission Owner and Generator Owner shall provide...”</p> <p>2. In Part 8.2, the terms “major city or load pocket” are ambiguous and should be better defined within the standard.</p> |
| <p>Response: The FRSDT thanks you for your comment. 1) Requirement R8 is applicable to Generator Owners to the extent the Generator owner owns Transmission type equipment (Requirement R2). However, there is no intent to apply Requirement R8 to those facilities covered by Requirement R1 (The generating unit up to either side of the GSU).</p> <p>2) The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Central Maine Power Company | | <p>Requirement 8.1.2 states; "Identity of the most limiting equipment of the Facilities" Concern that this would be applicable to each individual Normal and Emergency rating, and be required to be provided. The proposed revision has gone beyond the intent of the FERC Directive. Requirement 8.2 states; "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket." Unclear on what constitutes a "major city or load pocket". This text should be removed.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it</p> | | |

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| | | <p>easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> |
| <p>Rochester Gas and Electric Corp. John C. Allen</p> | | <p>Requirement 8.2 applies in the case of a "major city or load pocket". However, there is no definition or information on what would constitute a "major city or load pocket". Requirement 8.1.2, "Identity of the most limiting equipment of the Facilities", would be applicable to each individual Normal and Emergency rating, and be required to be provided. This goes beyond the intent of the FERC Directive.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the</p> | | |

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| <p>Summary Consideration above</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond “Normal” and “Emergency” ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| <p>New York State Electric & Gas Corp- Raymond P Kinney.</p> | | <p>Requirement 8.2 states; "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:" There is insufficient information on what would constitute a "major city or load pocket".</p> <p>Recommend removal of Requirement 8.2. Requirement 8.1.2 states; "Identity of the most limiting equipment of the Facilities" This requirement would be applicable to each individual Normal and Emergency rating, and be required to be provided. This proposed revision has gone beyond the intent of the FERC Directive.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments – the</p> | | |

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| <p>next most limiting equipment for a subset of Facilities. Requirement R8, Parts 8.1.2 and 8.2 are not duplicative of each other.</p> | | |
| <p>New York Power Authority William Palazzo</p> | | <p>Requirement 8.2. - "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:"</p> <p>Need to clarify what constitutes a major city or load pocket. Requirement 8.1.2. - "Identity of the most limiting equipment of the Facilities" This would be applicable to each individual Normal and Emergency rating, and be required to be provided. Believe that this proposed revision has gone beyond the intent of the FERC Directive. Requirement 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments – the next most limiting equipment for a subset of Facilities. Requirement R8, Parts 8.1.2 and 8.2 are not duplicative of each other.</p> | | |
| <p>New Brunswick Power Transmission Corporation - Randy MacDonald</p> | | <p>Section 8.2:Load pocket or major city is unclear. S</p> |

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| Organization | Yes or No ² | Question 1 Comment |
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| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Public Utility District No. 1 of Snohomish County Snohomish County PUD No. 1</p> | | <p>Snohomish PUD agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a significant change. Therefore, with minor modification, the SDT adopted the proposed change.</p> | | |
| <p>Salt River Project</p> | | <p>SRP believes that the proposed language of R8.2 and 8.2.2 is ambiguous and does not</p> |

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| | | <p>make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for a Thermal limit of a Facility on another's system. SRP has provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. SRP believes this proposed language is clarifying in nature and not a substantive change. If this language is adopted by the drafting team we would vote in the affirmative for the proposed standard.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power</p> <p>Tacoma Public Utilities</p> | | <p>Tacoma Power is voting Negative and suggests changing the following two sub-requirements:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> |

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| | | 8.2.2. The Equipment equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Thank you for your consideration. |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| U.S. Bureau of Reclamation | | <p>The proposed language of parts 8.2, 8.2.2, and M8 is ambiguous and does not make clear the intent of the proposed Requirement 8, which is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, we have provided proposed alternative language for parts 8.2, 8.2.2, and M8 which we believe clarifies the intent, while not changing the actual requirements.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| MidAmerican Energy Co. | | The standards drafting team did not perform its defined function as the technical standards expert and developer by simply transferring FERC words from Order 693 into a |

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| Terry Harbour | | revised standard. NERC standards are to be concrete and measurable. Companies should not be held to violations for subjective standards. Therefore, the vague and ambiguous wording proposed in the FERC directive should be deleted and limited to the IROL language for 8.2 only as equivalent and superior to the FERC directive. If the drafting team feels compelled to address the additional FERC Order 693 words such as TTC limits, impeding generation, or impeding service to major load pockets or cities, then specific, measurable tests related to Section 215 such as impediments that could result in TPL standards violations beyond NERC category C conditions (or equivalent), instability, uncontrolled separation, or cascading should be developed and placed in the revised standards ratings. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Roger C Zaklukiewicz | | The terms in 8.2 are not well defined and subject to interpretation. 8.2 also appears to go beyond the FERC Directive. An immediate review after passage is certainly in order. |

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| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> | | |
| <p>Southwest Power Pool Charles H Yeung</p> | | <p>There are outstanding technical issues that have not been addressed concerning the applicability to Load Pockets. Because of the parallel comment/vote schedule, we cannot support the proposed language until these issues are clarified.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the</p> | | |

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| <p>Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> | | |
| <p>Tennessee Valley Authority</p> <p>Larry Akens;</p> <p>Ian S Grant;</p> <p>David Thompson;</p> <p>Marjorie S. Parsons</p> | | <p>TO Comments</p> <ul style="list-style-type: none"> o Is it intended that the TO is providing information to the TO in R8? o The reference to ‘new facilities’ in R8 and subsequent requirements should be considered for revision. Consider the revision to state “new facilities which are designed” or address new facilities separately. If these are future facilities, it is often difficult to know what some equipment ratings may be until they are designed. A conservative value may be assumed - a new line may be planned to be good for 1800A for example. What exact equipment (R8.1.2) is going to be the limit is unknown until the design is further into planning. With this in mind it is difficult in some cases to determine the exact facility rating (1810A or 1920A would both be acceptable to the initial planning) much less the next most limiting equipment for future facilities. |
| <p>Response: The FRSDT thanks you for your comment. Per Requirement R8 the requesting entity is restricted to Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s). Specifically for R8, Part 8.2 the requester must be from an entity that has the ‘authority’ over the Facility in question.</p> <p>The term “new Facilities” does not include Facilities that will be placed in service beyond the Operations Planning time horizon, which is the Time Horizon for Requirements R7 and R8.</p> | | |
| <p>Austin Energy</p> <p>Chelan County Public Utility District #1</p> <p>City of Austin dba Austin Energy</p> <p>City of Redding</p> <p>Orlando Utilities Commission</p> <p>Public Utility District No. 1 of Chelan</p> | | <p>We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative.</p> <p>In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding</p> |

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| County | | <p>generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>City of Austin dba Austin Energy Reza Ebrahimian</p> | | <p>We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment modifying R8.2:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> <p>Supporting Discussion: The FAC-008-3 R8 requirement inappropriately only considers the next element’s thermal limit as being the ‘fix’ that potentially exposes the system to a greater reliability impact as follows:</p> <ul style="list-style-type: none"> o Total Transfer Capability considers the operation of multiple transmission components that appears to be confusing the single circuit and its series components with the definition of Facility. |

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| | | <p>o Limitation of a Total Transfer Capability and identifying a single element and its 'next most limiting component' ignores the intrinsic interaction/loading of other transmission elements within the system. In consideration of 'next most limiting element' identifying the thermal limit of an individual circuit ignores other non-thermal system limitations such as stability issues that may be on the cusp of exposure thereby inadvertently misleading the requestor to the false operation limit.</p> <p>Additionally: Under certain system conditions an element would reach its thermal limit just prior to the stability limitation. Communicating the 'next most limiting element' would give a false representation of the system's ability thereby jeopardizing reliability system. If only considering the series elements as the facility's limitations, dynamic studies and other non-thermal restrictions may impose limitations prior to the 'next' element's thermal limitation; this poses a greater reliability threat. If multiple parallel lines which are, through their combined operation, used in the determination of a IROLs, Total Transfer Capability or major load/cities and should be considered as a facility. Then identifying the next limiting thermal element rating may not necessarily be achievable as system dynamic limitations may pose the 'next' limitation and are not necessarily dependant on a thermal limit of the elements for the defined facility.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Lower Colorado River Authority</p> <p>MEAG Power</p> <p>Municipal Electric Authority of Georgia</p> | | <p>We agree the R8 requirement addresses the Commission's directive, however we are seeking only clarification of the standard's language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer</p> |

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| Orlando Utilities Commission | | <p>Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> <p>Please note that 8.2 and 8.2.2 have been modified in this comment, but the editor does not allow strikeouts and underlines, so please read carefully.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Platte River Power Authority</p> <p>Pete Ungerman</p> <p>Carol Ballantine</p> <p>John C. Collins</p> | | <p>We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |

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| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Modesto Irrigation District Spencer Tacke</p> | | <p>We are voting NO because Section 8.2 is unclear as to what "impeding generator deliverability, or impeding service to a major city or load pocket:" means, or how it can be interpreted. Also, it is not clear why just a "Thermal Rating" is considered, as protective relay settings may be the limiting element and basis of the rating in question. Thank you.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |
| <p>Idaho Power Company Ronald Schellberg</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for</p> |

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| | | <p>misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot:</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Pacific Gas and Electric Company - Richard J. Padilla</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 is ambiguous and appears to contradict the basic rationale for FAC-008 and FAC-009 for generation assets. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. FAC-008 requires that entities address a normal and an emergency rating.</p> <p>In addition, per equipment standards, some equipment has short time overload capability and these capabilities are also addressed in the FAC rating standards. Therefore, for generation the NERC identified scenarios fall into one of two categories. 1) the next most limiting factor is already addressed in the emergency or short-time rating, or 2) entities are</p> |

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| | | <p>allowing facilities to exceed ratings and get into operating difficulty, which is a violation of the standard. If this defined scenario is applicable to transmission elements, limit the applicability for requirement 8.2 to transmission only.</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8, Part 8.2 only applies to transmission Facilities that a Generator Owner may own. It is not applicable to generating Facilities covered under Requirement R1.</p> | | |
| <p>Platte River Power Authority-Terry Baker</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> <p>End of proposed comment</p> <p>WECC stakeholders reviewed the proposed Standard, FAC-008-3, and concluded that the current wording of parts 8.2 and 8.2.2 is ambiguous and without the proposed clarifying language could lead to confusion related to the intended purpose of this standard. Based on the Purpose/Industry Need on the NERC website which in part states: “In order to determine facility ratings, entities must identify the most limiting component that comprises</p> |

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| | | <p>the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event.” Without the suggested clarification for parts 8.2 and 8.2.2, concerns exist that it is unclear that the intent is to identify the equipment’s next Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. A complete copy of the Facility Ratings standard and associated materials can be viewed at: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html If you determine that you will vote NO, but do not submit the suggested comment above, it is important that you provide a comment with your vote indicating the reason(s) why you voted NO and suggested modifications that would make the standard acceptable. In addition to the ballot of FAC-008-3, a non-binding poll of the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) is being conducted. WECC staff is not aware of any significant concerns related to the proposed VRFs and VSLs and recommends an affirmative vote for the VRFs and VSLs. If you determine that you will vote NO on the VRFs and VSLs it is important that you provide a comment with your vote indicating the reason(s) why you voted NO and suggested modifications that would make the VRFs/VSLs acceptable All WECC entities that are registered in the Facility Ratings Ballot Pool are urged to cast their ballots prior to the close of the ballot period.</p> |

Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”.

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| <p>The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Western Electricity Coordinating Council Colorado Springs Utilities Pacific Gas and Electric Company Public Utility District No. 2 of Grant County Sacramento Municipal Utility District Seattle City Light U.S. Army Corps of Engineers</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Independent Electricity System Operator</p> | | <p>While the language of Requirement 8, Part 8.2 comes out of the Order 693, paragraph</p> |

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| Kim Warren | | 756, we believe the following wording can be improved. In particular, the reference to impeding service to a major city or load pocket is troublesome since there lacks general guideline or definition of what constitutes “a major city or load pocket”. We therefore suggest this part be revised to: Revise: “... that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket.” to: “... that the requester has identified is part of an Interconnection Reliability Operating Limit or other System Operating Limit, or limits Total Transfer Capability or generator deliverability under conditions specified by the requesting entities.” |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Xcel Energy, Inc.- Gregory L Pieper;Michael Ibold | | Xcel Energy does not feel that the proposed revisions, as drafted, meet the intent of FERC’s directive and do not benefit reliability. Additionally, the information that would be provided to a requester would either be rendered useless or inappropriately used in maintenance, planning and operational activities. Please see our full set of comments for more detail. |
| <p>Response: The FRSDT thanks you for your comment. Comments provided in Question 5.</p> | | |
| Northeast Power Coordinating Council | No | 8.2 should be deleted. What it requires goes beyond what is mandated in the FERC Directive. However, regarding the language in 8.2, major city, and load pocket must be defined. Those terms are vague, and subject to interpretation. 8.1.2 should be revised to read: Identity of the most limiting equipment of the Facilities |

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| | | applicable to each individual Normal and Emergency rating required to be provided. |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics contained in Requirement R8, Part 8.2.</p> <p>The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above. Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> <p>8.1.2: The SDT believes the entire FAC 008-3 does not require any information beyond “Normal” and “Emergency” ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2. Adding the verbiage to Part 8.1.2 would therefore be redundant.</p> | | |
| Pepco Holdings Inc | No | Although the proposed R8 contains the “words” from the FERC directives, the requirement does not directly increase reliability in real time, may cause operational confusion and is more appropriately addressed in the long term planning function not in the Operations Planning time horizon. For either the 1st limiting component or the next, both should be by request only. If the entity needs it let them request. In many cases the entity will never use the component data in operations. The actual piece of equipment that limits a facilities rating does not enter into operators decisions made in the operational time frame. The system limits are either an IROL or an SOL. Other procedures call for the operators to monitor the normal ratings and the contingency limits (or IROLs or SOLs) and take actions prior the flows reaching those limits. If the limits are violated due to a multiple facility trip there is a specified time frame to correct the violation. Use of the “next” most limiting |

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| | | <p>piece of equipment is not practical or appropriate in real time operations. The requirement uses terms that are not defined: deliverability, major city and load pocket. Although that is the words used by FERC in Order 693, they do not conform to existing terminology and methodology in operating the BES. Maybe the situations when a request could be made for the second limit/rating ought to be any IROL, SOL or BES facility limitation.</p> |
| <p>Response: The FRSDT thanks you for your comment. The identification of the most limiting equipment in a Facility (8.1.2) only needs to be provided, as scheduled by a requester. This Standard does not require any entity to request such information. The Standard does not create an obligation on an entity for information that has not been requested by a requester defined in Requirement R8. The SDT does not disagree with the statement of use of these data in real-time. Given that the data subject to Requirement R8, Part 8.2 the provider has 30 days to supply substantiates that these data would not be expected for use in real-time.</p> <p>The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term “a major city or load pocket” to “a major load center”. Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> | | |

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| Public Service Enterprise Group | No | <p>Comment #1:PSEG suggest numbering the 4 scenarios in section 8.2, similar to how it was numbered in the FERC paragraph 756. Also, the FERC paragraph used the word “causing” but the standard used the word “having”. Therefore it would read as: “Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as causing one of the following 1. An Interconnection Reliability Operating Limit (IROL); 2. A limitation of Total Transfer Capability, 3. Impeding generator deliverability, or; 4. Impeding service to a major city or load pocket.”Comment #2:Would the requesting entity be allowed to ask for this data at each of the registered entity’s facilities at the same time, or would it only be one facility at a time?</p> |
| <p>Response: The SDT thanks you for this recommendation. It has been applied.</p> | | |
| Manitoba Hydro | No | <p>It is unclear which facilities the additional thermal rating information will be required for. FERC asked for additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets. It is open to interpretation whether a facility is actually an impediment to generator deliverability or an impediment to load serving: -Should one perform n-1 analysis and determine whether a thermal limit is violated? Or is n-2 analysis necessary? -Is a radial feed to a generator an impediment to delivery? -What constitutes a major city or load pocket? One would assume at least 300 MW to be consistent with some other NERC reporting requirements. Requirement R8 should be rewritten to clarify which facilities this additional thermal rating information will be required for. Perhaps making it a bright line standard (for example facilities greater than 300 kV) would be a simpler approach.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on</p> | | |

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| <p>the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Pacific Gas & electric Company | No | <p>Please consider following revisions:8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits USE OF the Requester's Facilities by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| We Energies | No | <p>R8 applies only to Generator Owners subject to R2, that is, those who own the GSU and high-voltage leads to the transmission interconnection point. This Requirement needs to be clarified to indicate whether it applies only to the equipment between the GSU and the transmission interconnection point, or if it applies to all the equipment between the generator and the interconnection point.</p> |
| <p>Response: The FRSDT thanks you for your comment. The clarity that you suggest is already contained in R1 and R2 and the FRSDT does</p> | | |

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| not believe that additional verbiage in R8 is necessary. | | |
| IRC Standards Review Committee | No | Requirement 8.2 goes beyond what is mandated in the FERC Directive. Knowledge of these additional ratings is currently required through a collection of data in other IRO/TOP/TPL Standards. In addition Requirement 8.2 introduces the terms major city, and load pocket. These terms are not defined and would be subject to interpretation. This would result in a request for interpretation or a compliance application notice. If the requirement is retained, 8.1.2 should be revised to read: Identity of the most limiting equipment of the Facilities applicable to each individual Normal and Emergency rating required to be provided. However, as stated, this is a redundant requirement. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| New York Power Authority – Arnold J. Schuff | No | Requirement 8.2. - Need to clarify what constitutes a major city or load pocket. Requirement 8.1.2. - Believe that this would be applicable to each individual Normal and Emergency rating thus required to be provided. Believe that the proposed revision has gone beyond the intent of the FERC Directive. |

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| | | Requirement 8.2.2. - should state "The equipment's Thermal Rating" |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> <p>Requirement R8, Part 8.2.2 was modified to use the phrase, "The Thermal Rating for. . ."</p> | | |
| Brazos Electric Power Cooperative | No | See response to Question 5. |
| <p>Response: The FRSDT thanks you for your comment. See response to Question 5.</p> | | |
| Ameren | No | The clarification from the Commission seems to require the additional rating and limiting equipment only for the specific facilities related to 1) IROL, 2) TTC, 3) generation deliverability, or 4) transmission service to municipals or load pockets. Therefore, if this must be included, we believe that Requirement R8.1.2 should be removed from R8.1 and included in R8.2. |
| <p>Response: The FRSDT thanks you for your comment. FERC Order 693 paragraph 693, requires the identification of the most limiting</p> | | |

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| <p>equipment.The commission’s proposed modification would require identifying and documenting the limiting component for all facilities....” Hence the need for Requirement R8, Part 8.1.2. The commenter should note that this Standard does not create an obligation to provide data absent a schedule to provide such information from a Requester. Therefore, if there is no request, there is no obligation.</p> | | |
| Indeck Energy Services | No | <p>The FERC order addresses limiting elements for different time periods, continuous versus short term. R8 is drafted based upon the diagram in the printed comment form which misses FERC’s point. At either the continuous duty period (eg 24 hours) or at the emergency (eg 4 hour) duty period, the limiting element will always limit the equipment. The FERC order identifies the difference between the E3 limiting in the continuous duty period and E2 in the emergency duty period. And if the duty period was further modified, such as to 15 minute duty period, then a different element such as E1 might be limiting. R8 doesn't grasp FERC's issue. An IROL or other analysis would seem to be for a different period than what some TO's or GO's would rate their facilities at based upon R2. R8 should define in the Request to the TO or GO, what duty period is relevant for the particular condition that is being analyzed (eg 15 minutes or 4 hours) and request a rating for that duty period.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FERC Order ‘only’ requires the identification of, and the corresponding rating of, the next most limiting equipment for a subset of Facilities, and if requested by an entity for which that Facility is under its authority. The SDT believes that Requirement R8, Part 8.2 meets the intent of this FERC Order.</p> | | |
| SRP | No | <p>The language of requirement R8.2 seems to allow a utility to wait until a request is received to prepare the information. However, if a neighboring utility asked for bulk electric system data, the 30 calendar day time limit would not be enough.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT recommends a minor modification of the language in Requirement R8, Part 8.2. The SDT used the term “Facilities under the Requester’s authority” to avoid potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester. It is envisioned that studies have been done that provide the information under the requirement. The FRSDT does not believe that additional studies will be required to provide this information.</p> | | |
| SPP Reliability Standards Development | No | <p>The order mentions that the increase in rating also should be provided along with the second most limiting element rating.</p> |

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| <p>Response: The FRSDT thanks you for your comment. Agreed, however Requirement R8, Part 8.1 requires the Facility Rating, and Part 8.2 requires the rating for the subset of Facilities not considering the most limiting equipment. The difference between those values is the 'increase'.</p> | | |
| <p>Southern Company Generation (SCG) Technical Services</p> | <p>No</p> | <p>The R8 requirement does reflect the Directive however we believe that item (3) should be limited to generation having firm transmission service. Proposed change: 8.2.1. If a Facility has a shorter term rating higher than its continuous rating such that another piece of equipment in the Facility would become the most limiting in the shorter term then the identity of the existing next most limiting equipment of the Facility 8.2.2. If the condition in 8.2.1 exists then provide the Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Otherwise indicate to the requestor that the limit provided in 8.1 applies.</p> |
| <p>Response: The FRSDT thanks you for your comment. The language of R8 has been revised to provide better clarity regarding the information requested and the entities who can request it. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Southern Company Transmission</p> | <p>No</p> | <p>The R8 requirement does reflect the Directive however we believe that item (3) should be limited to generators who have firm transmission service. We also have concerns over the undefined terms used in item (4) "major cities" and "load pockets". Also see question 5 comments. Proposed change 8.2.1. If a Facility has a shorter term rating higher than its continuous rating such that another piece of equipment in the Facility would become the most limiting in the shorter term then the identity of the existing next most limiting equipment of the Facility 8.2.2. If the condition in 8.2.1 exists then provide the Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Otherwise indicate to the requestor that the limit provided in 8.1 applies.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to</p> | | |

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| <p>erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>The language of R8 has been revised to provide better clarity regarding the information requested and the entities who can request it. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Pacific Northwest Small Public Power Utility Comment Group | No | <p>The SDT stated in the recent webinar that they did not consider R7 and R8 to be onerous. Data requests would be infrequent and for specific facilities. The comment group disagrees, since every audit consists of a full data request for all actively monitored standards. Affected entities may be expected to provide the data for every facility at each audit. Please add language to the two requirements indicating that data requests are only for operating the interconnected BES reliably, and not for compliance assessment.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT cannot speak to compliance and audit issues for this standard. The requirements dictate that entities provide information upon request from an RC, TP, TOP, TO or PC. If there are no requests from these entities, then there is no data to be supplied. Auditors are not included in the list.</p> | | |
| Bonneville Power Administration | No | <p>We believe we understand the intent of the requirement, but do not believe that it is adequately communicated. Therefore, we are suggesting alternative language for R8.2 and R8.2.2 that if included would allow us to vote yes during the next ballot. Revised language:8.2 Within 30 calendar days (or a later date if specified by the requesting entity), for any requested Facility that has equipment with a Thermal Rating that limits the requesting entity’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential</p> | | |

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| <p>confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| BC Hydro and Power Authority | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| Seattle City Light | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for</p> |

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| | | <p>misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| Xcel Energy | No | <p>Xcel Energy does not believe that the proposed Requirement 8 meets the intent of Paragraph 756 of Order 693, nor is it related to reliability. We believe FERC’s directive was focused on the “prior identification of this second limiting component” in order to allow entities an opportunity to take mitigating actions that may help avoid events that could lead to cascading. This would indicate to us that FERC wanted to see a planning requirement, which would then potentially lead to maintenance and operational subsequent actions. As drafted, the requirement does not encourage proactive planning-related activities. In practice, planning entities may request this information and perform such proactive assessments. But, there is no requirement for them to do so, as we believe FERC had intended.</p> <p>The FRSDT believes that entities that request the information in R7 and R8 have intentions of performing studies. You are correct that there is no requirement to run additional studies. The FRSDT has met the language of the FERC directive.</p> |

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| | | <p>Furthermore, from a system operations perspective, there is no reliability benefit gained from knowing the 2nd most limiting element and its rating. The 1st most limiting factor must be respected and the system must be operated in a manner that doesn't violate that limit. Knowledge of the 2nd most limiting factor, or any other limiting factor, does not affect the operation of the system. If the intent of this requirement was to focus on the planning of the BES, it is misguided and could lead to erroneous assumptions. In paragraph 76 of its September 16, 2010 Order Denying Rehearing, FERC recognizes that facility ratings can change under different operating conditions. Indeed, the discussion centers around the fact that different equipment can use different time periods to determine the ratings, i.e. 4 hour, 8 hour, or ½ hour). The standard only asks for an ambiguous next most limiting element. On the Xcel Energy systems, there are 4 ratings that are considered; summer normal, summer emergency, winter normal and winter emergency. It is not unusual for different pieces of equipment to be the limiting (or 2nd most limiting) element depending upon the rating under investigation. To determine the increase in a facility rating if the most limiting element is no longer in place, one would need to investigate all four ratings. In order to come up with a meaningful increase in a facility's rating, a more detailed study would be required, and simply identifying the 2nd most limiting element and that element's rating may not give an accurate picture of the system. Therefore, the requestor would also need to identify the time period that is under investigation (summer, winter, normal, continuous, emergency or short-term), and would require information around how the requested rating was developed. In addition, further consideration is needed regarding the term "next most limiting element." For instance, if your facility contains 3 CTs that all have the same equipment rating, does the "next most limiting element" mean the second of 3 CTs (in this example)? Or, does it mean the element after any and all equipment that currently limits the rating of the facility? Another example could be a jumper and a switch, both with the same equipment rating. Does the "next most limiting element" mean the switch (assuming the jumper was listed as the most limiting element)? Obviously, if multiple pieces of equipment have the same rating, then providing another piece of equipment with the same rating doesn't provide any new information. However, only providing the equipment with the next highest rating could seriously understate the work involved in getting to that higher rating. There could be multiple pieces of equipment that must be replaced to get to a higher rating.</p> <p>In order to determine "most limiting" equipment for a Facility, an entity must know which equipment comprises the facility and what the respective limitations are. Since this information has already been determined, an entity need simply review its records and</p> |

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| | | <p>supply the information to the requestor for the specified Facility.</p> <p>Likewise, further consideration and refinement is needed for the terms “major city” and “load pocket”. Depending upon the perspective of the various parties involved, what constitutes a major city or load pocket could greatly vary. Additionally, there could be a city or load pocket on a radial line that has no effect whatsoever on the BES. Instead, we recommend defining a “major city” or “load pocket” in quantitative terms such as a certain population or megawatts, as is the case in EOP-004-1.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | | |
| BGE | Yes | |
| Clark Public Utilities | Yes | |

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| Dominion | Yes | |
| East Kentucky Power Cooperative | Yes | |
| Georgia Transmission Corporation | Yes | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| New Harquahala Generating Co. | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| South Carolina Electric and Gas | Yes | |
| Tri-State G&T | Yes | |
| United Illuminating Company | Yes | |
| GDS Associates | Yes | <p>a. We do agree that the proposed requirement R8 addresses FERC directive from Order 693, Paragraph 756, however we disagree with the language used within the requirement in several instances as follows:</p> <ul style="list-style-type: none"> o The applicability to the GO should not be stated in parenthesis. We suggest rewording such as “Each Transmission Owner and Generator Owner shall provide [...]” <p>The style incorporated is necessary to indicate that this only applies to a GO who has Facilities applicable to Requirement R2. R8 is not applicable to all GOs.</p> |

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| | | <p>o The information provided by the GO and TO is based upon their own process and schedule and may not coordinate with the request from the RC, TP, etc. FR SDT explained that “If one party declines to agree to a schedule, then both parties could be in violation of the requirement. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC”, however we believe that rather to pile up the entities found noncompliant due to the schedule incompatibility, the standard shall be adjusted to permit reasonable timeframes.</p> <p>If both parties agree to an alternate schedule, then this should be documented and provided as evidence of compliance with the requirement.</p> <p>o It is unclear why two most limiting pieces of equipment must be identified. If a Generator or Transmission Owner must notify and provide its Facility Ratings for new or re-rated facilities as required in R7 what purpose does the second limiting factor have?</p> <p>Please refer to the background information provided with the posting of the standard. It explains the reliability benefits of the requirement.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | | |
| Exelon | Yes | <p>Although Requirement R8 addresses the FERC directive, this proposed requirement appears to provide no reliability benefit. The current standard requires that all ratings “shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility”. The proposed Requirement R8 specifies that if requested, a new facility rating based on the second most limiting component be provided even though an existing facility rating based on the most limiting component already exists. If the transmission system is operated utilizing the facility rating based on the second most limiting component, operators could exceed the equipment rating of the first most limiting component and damage that piece of equipment as its rating capability would be exceeded. If the facility rating based on the second most limiting component is intended to be used by operations support staff so they could evaluate the need for a shorter duration rating for a future planned event, it still would have no value. If a shorter duration rating needs to be established, then simply knowing the rating of the second most limiting component of an existing rating is meaningless because it is based on a different duration.</p> |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Yes or No ² | Question 1 Comment |
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| | | When determining a facility rating all component ratings comprising the facility must be considered based on the planned rating duration, not just the second most limiting component. Thus the confusion and possible reliability harm caused by providing a facility rating based on the second most limiting component shows that knowing the second most limiting component for the current ratings has no value. |
| <p>Response: The FRSDT thanks you for your comment. Within the Comment Form (Reliability Objective Discussion), it states:“The directive was not intended to provide the System Operator with information to change ratings in real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause</p> | | |
| American Transmission Company, LLC | Yes | ATC proposes revising the wording of Requirement R8 to more carefully refer to the Thermal Ratings of the requested Facilities: (see changes below)R8.1 . . .R8.1.1 Thermal Ratings for the requested FacilitiesR8.1.2 Identify the limiting equipment associated with the Thermal Ratings of the requested FacilitiesR8.2 . . .R8.2.1 Next Thermal Ratings for the requested Facilities beyond the most limiting equipmentR8.2.2 Identify the limiting equipment associated with the next Thermal Ratings of the requested Facilities These revisions are proposed by ATC because a Thermal Rating for a Facility could be based on more than one piece or type of equipment. For example, a Facility could have two switches with the same rating or two different items (breaker and relay) with the same rating. Conversely, the piece or type of equipment associated with the Thermal Rating and the next Thermal Rating could be one single item. For example, the equipment could be the line conductor, but different sections of the line conductor could have different ratings due to different ground clearances, wind exposure, or conductor types. |
| <p>Response: The FRSDT received many comments concerning the proposed requirement and its intent. We have revised 8.2.2 to “The Thermal Rating for the...</p> | | |
| The Valley Group, a Nexans company | Yes | In December 2010, NERC Smart Grid Task Force published Report “Reliability Considerations from the Integration of Smart Grid”, and in it, there is an excerpt on “Integration of Smart Grid Technology into the Bulk Power System”, Section 3, page 12. In this excerpt, it is stated that Smart Grid provides the ability to create an overarching, coordinated and hierarchical approach to automation, control and effectiveness. Among examples of smart grid technologies, Dynamic Thermal Circuit Rating (DTCR) devices |

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| Organization | Yes or No ² | Question 1 Comment |
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| | | <p>were numbered. Although the objective of NERC Project 2009-06 is to identify the limiting component(s) and next limiting component(s) for all critical facilities, and not about Smart Grid integration; however, it should be beneficial to state a need for smart grid technologies integration, especially DTCR devices, into this NERC project. While the paramount importance is to maintain the reliability and integrity of the bulk power system, it is of equal importance to introduce reliability and economic benefits that Smart Grid technologies are bringing. Careful planning, coordination, and possibly review of the current Facility Rating Methodologies should be encouraged and introduced at present time. Static transmission line ratings, and static ratings of power system equipment in general, belong to past practices, and entities should be encouraged to embrace Smart Grid into their systems.</p> |
| <p>Response: Thank you for your comments. These may be considered with the next revision to this standard.</p> | | |
| PacifiCorp | Yes | <p>PacifiCorp acknowledges that proposed Requirement R8 addresses the FERC directive in Paragraph 756. However, the Standards Drafting Team carried over from Order 693 some ambiguous language that may require clarification. Paragraph 756 directs that NERC include language requiring entities to identify the next most limiting component for facilities for which the thermal rating causes an impediment to service to “major cities or load pockets.” Requirement R8.2 necessarily contains this requirement as directed by the Commission. It is unclear to PacifiCorp what the Standards Drafting Team would define as a “major” city. Also, it is unclear whether the term “major” is intended to apply to load pockets as well and, if so, what is considered a “major” load pocket. Regardless of whether “major” applies to load pockets, further clarification also is needed regarding what is meant by the term “load pocket.” PacifiCorp requests modification of Requirement R8 to clarify this element.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
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| <p>Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |
| American Electric Power | Yes | See response to Question 5. |
| Dynergy Inc. | Yes | We agree proposed R8 addresses the FERC directive; however, by including GO in R8, R7 and R8 seem redundant with respect to the GO. Suggest deleting R7 or include "subject to R1" after Generator Owner in R7. Also, R8 requires a TO to provide information to itself. Suggest deleting TO as a recipient from itself. |
| <p>Response: The FRSDT thanks you for your comment. Requirement R1 requires that the Generator Owner "have documentation for determining Facility Ratings". Requirement R7 requires the generation owner to "provide Facility Ratings...." There are subtle but distinct differences between R7 and R8 with respect to the GO.</p> | | |
| MISO Standards Collaborators | Yes | <p>We propose revising the wording of Requirement R8 to more carefully refer to the Thermal Ratings of the requested Facilities: (see changes below)</p> <p>R8.1 . . .R8.1.1 Thermal Ratings for the requested Facilities</p> <p>R8.1.2 Identify the limiting equipment associated with the Thermal Ratings of the requested Facilities</p> <p>R8.2 . . .R8.2.1 Next Thermal Ratings for the requested Facilities beyond the most limiting equipment</p> <p>R8.2.2 Identify the limiting equipment associated with the next Thermal Ratings of the requested Facilities</p> <p>These revisions are proposed because a Thermal Rating for a Facility could be based on more than one piece or type of equipment. For example, a Facility could have two switches with the same rating or two different items (breaker and relay) with the same rating. Conversely, the piece or type of equipment associated with the Thermal Rating and the next Thermal Rating could be one single item. For example, the equipment could be the line conductor, but different sections of the line conductor could have different ratings due to different ground clearances, wind exposure, or conductor types.</p> |

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| Organization | Yes or No ² | Question 1 Comment |
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| | | <p>For R8.2, we have four areas of concern for the second most limiting piece of equipment of a Facility. These four items are, "Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket" and they are the exact words that the commission used in FERC Order 693, paragraph 756. The SDT should apply the "equally efficient and effective" rule of thumb and clarify what "impeding service to a major city or load pocket" means. Furthermore paragraph 771 states that "... (3) for each facility, identify the limiting component and, for critical facilities, the resulting increase in rating if that component is no longer limiting". The Commission uses the word "critical facilities". We recommend that the SDT rewrite R8.2 to read; 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested critical Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket. Entities have a list of these "critical facilities" and this will ensure that Facility Ratings are used in the reliable planning and operation of the Bulk Electric System.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| ACES Power Marketing | Yes | <p>While it likely will satisfy the FERC directive, proposed Requirement R8 is ambiguous, leaves much room for interpretation, and causes some confusion. For instance, when would an IROL be expected to have a thermal limit? Violations of IROLs by definition can</p> |

| Organization | Yes or No ² | Question 1 Comment |
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| | | <p>expose a widespread area to cascading outages, uncontrolled separation or instability. When does exceeding a thermal limit ever do this? Since TTCs fluctuate based on system conditions, what studies would the limiting TTC target? Studies used to support posting ATCs/AFCs? Near-term seasonal assessment studies? Long-term transmission planning studies? Many TSPs have automated tools that recalculate TTC every hour for the next 168 hours. It would not make sense to use these hourly TTCs as they change too rapidly but we are left wandering what the drafting team had in mind. What does impeding generator deliverability and impeding service to a major city or load pocket mean? We assume that the drafting team means limits deliverability or service. Impede is a poor choice of words as all lines have impedance and, thus, impede service and deliverability. Use of a major city or load pocket is ambiguous and should be avoided. What constitutes a major city? The top 10 largest cities by population in the U.S.? The top 100 largest cities? What constitutes a large load pocket? 100 MW of load, 200 MW of load? By using ambiguous terms, there will surely be unequal enforcement of the requirement for several years until those details are worked out in the audit and enforcement processes. Now is the time to resolve these ambiguities.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
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| National Grid | Yes | <p>While we agree R8 meets the FERC Directive, we believe there are things that can still be done to improve the requirement.</p> <ol style="list-style-type: none"> 1. Eliminate requirement R 8.2 (reproduced below). There is a lot of ambiguity in the term "major city or load pocket" and hence the proposal to completely eliminate the requirement. 2. For R 8.1.2 "identity of the most limiting equipment of the Facilities" National Grid believes this would be applicable to each individual Normal and Emergency rating, and be required to be provided. We believe this proposed revision may have gone beyond the intent of the FERC Directive. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| Niagara Mohawk (National Grid Company) | Yes | <p>While we agree R8 meets the FERC Directive, we believe there are things that can still be done to improve the requirement.</p> <ol style="list-style-type: none"> 1. Eliminate requirement R 8.2 (reproduced below). There is a lot of ambiguity in the term |

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| Organization | Yes or No ² | Question 1 Comment |
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| | | <p>"major city or load pocket" and hence the proposal to completely eliminate the requirement.</p> <p>2. For R 8.1.2 "identity of the most limiting equipment of the Facilities" RSC believes this would be applicable to each individual Normal and Emergency rating, and be required to be provided. We believe this proposed revision may have gone beyond the intent of the FERC Directive.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term "impeding generator deliverability" generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part3.4.2.</p> | | |

2. Do you agree with the proposed Violation Risk Factor, Time Horizon and Violation Severity Levels for requirement R8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: Most commenters agree with the proposed VRFs, VSLs and Time Horizons. Some commenters had concerns with the use of percentages in the VSLs. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found. Some commenters suggested that the VRF for R8 should be lower. The VRF for R8 matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF. Other commenters suggested that the Time Horizon for R8 should be Long-term Planning. The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.

Minor revisions were made to the VSLs for R7 and R8 as follows:

1. The first VSL under the Lower category needs the words “and including” inserted prior to the “15 calendar days” language. The last part of the sentence should state “but missed meeting the schedules by up to and including 15 calendar days. This extra language would further clarify that if an entity reported its Facility Ratings on the 15th day, they would fall under the “Lower” VSL.
2. For the VSLs which incorporate percentages, the VSL percentages are not inclusive. The words “or equal to” should be incorporated into such VSLs. For example, the second VSL under the Lower category should state “The responsible entity provided less than 100%, but not less than or equal to 95%...” This type of change should be incorporated in all four of the VSL categories.

| Organization | Yes or No ³ | Question 2 Comment |
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| FirstEnergy Solutions | | FE generally finds the VSLs acceptable as written. We are abstain due to concerns we have with the proposed Requirement R6.4 and believe revision/clarifications are needed which may require conforming |

³ When this column is blank, it indicates a comment that was submitted with a ballot but not via the electronic comment form. Some commenters submitted duplicate comments with their ballot and via the electronic comment form; in this case, the Yes or No column is marked with their response in the electronic comment form.

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| Organization | Yes or No ³ | Question 2 Comment |
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| | | changes to the VSLs. |
| <p>Response: The FRSDT thanks you for your comment.</p> | | |
| <p>Manitoba Hydro Joe D Petaski Greg C. Parent S N Fernando Daniel Prowse</p> | | <p>-The VRF of Medium is not appropriate for Requirement 8 and should be set to Lower.</p> |
| <p>Response: The FRSDT thanks you for your comment. The VRF for R8 matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| <p>GDS Associates</p> | <p>No</p> | <p>a. Development of a percentage based Violation Severity Level seems arbitrary and capricious. There is no assistance provided in understanding what constitutes a required Rating information submittal. Smaller projects with less equipment will be penalized greater.</p> <p>The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found.</p> <p>b. We do not see how the percentages on which the responsible entities have missed to provide the required information to the requesting entities can be estimated.</p> <p>The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requestor may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement.</p> |

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| Organization | Yes or No ³ | Question 2 Comment |
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| | | <p>c. We can agree on the proposed number of days used in the VSLS criteria, but not if the schedule is entirely decided by the requesting entity.</p> <p>The requirement is written such that the requesting entity specifies when they need the information. If an entity is not able to meet the schedule, it is expected that the two entities will come to a mutual agreement on a schedule.</p> |
| <p>Response: The FRSDT thanks you for your comment.</p> | | |
| Luminant Generation Company LLC | No | <p>Comments submitted on Project 2009-06: Facility Ratings in. Overall, clarity needs to be provided on the standard prior to being able to support the proposed VRF and VSLs.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see the proposed clarifying revisions in the Summary Consideration for Question 1.</p> | | |
| Seattle City Light | No | <p>Comments submitted: Copied below for your info: We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot. 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |

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| Organization | Yes or No ³ | Question 2 Comment |
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| Ontario Power Generation Inc. | No | <p>Consistent with my comments on 2009-06 (FAC008 and FAC009), these comments are equally applicable here, since the VSLs and VRFs refer to the Requirements that require deletion or modification:</p> <ol style="list-style-type: none"> 1. OPG disagrees with the requirement to provide "Limiting Equipment" information as specified in Requirement 8.1.2. It remains unclear as to what reliability purpose would be served by the provision of this information. Maintenance of this type of information would be onerous, and particularly in light of its questionable utility, OPG sees no need to undertake such work. 2. For the same reasons listed above, Requirement 8.2 is completely unnecessary. 3. All other elements of the standard that refer to either of the above Requirements need to be deleted or amended. |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The background material provided with the posting of the standard. During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> | | |
| Consolidated Edison Co. of New York | No | <p>RELIABILITY CONCERNS: (1) Key terms and phrases are undefined, including “most limiting,” “next most limiting,” “impediment,” “impediment to generation deliverability,” “impediment to service” and “major cities or load pockets.” (2) The event graph provided along with the proposed standard fully illustrates the complication/confusion created by the proposed wording. There is a different Element and rating reported depending upon the event duration used. Each element in the graph may be the “most limiting” or “next most limiting” Element at any point, depending upon the duration selected for reporting purposes. This problem needs to be addressed. (3) There is no Guidance documents to clarify the reliability standard’s requirements and meaning. COMMENTS WITH QUESTIONS: 1. The drafting team needs to define the following terms a. “most limiting,” b. “next most limiting,” c. “impediment to generation deliverability,” d. “impediment to service,” and e. “major cities or load pockets” 2. The drafting team needs to provide guidance on the meaning, scope and use of the word “impediment” as it is used in the terms “impediment to generation deliverability,” and “impediment to service.” a. What are the limitations of any “impediment,” e.g., 0.1%, 1%, 5% or 10% of what</p> |

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| Organization | Yes or No ³ | Question 2 Comment |
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| | | <p>measure(s), the Facility Rating? b. Is there a dead band within or threshold below which the impediment is not material, e.g., +/-5%, and beyond which it is material? c. What is the reach of any impediment, e.g. within a substation, 1 mile, 10 miles (across a load area), 100 miles (across an interface), across a Balancing Authority (NYISO), or 1,000 miles (across the Eastern Interconnection)? 3. The drafting team needs to provide guidance on the meaning, scope and use of the phrases “most limiting” and “next most limiting” Facility or Element. a. What are the timeframe (refer to event graph), rating type(s) and duration sought, e.g., normal conditions, short term or long-term exceedance? b. What is the context of the ratings sought, e.g., normal operation, N-1 contingency, with or without cooling? c. Is reporting applicable to a particular time, day, period or season, e.g., 14:00 hrs., July 6th peak, or Summer and Winter ratings? d. Is the reporting average, normalized, typical, maximum, at some temperature, e.g., 4 hr. max. rating at 86°F, 1 hr. max. normalized to 70°F, with or without forced cooling, at an 82°F cooling sink temperature (air, river or ocean)? 4. The drafting team should consider producing a Guidance Document with definitions, example uses and a Frequently Asked Questions (FAQ) section to provide the industry assistance and guidance. 5. What, if any, are respondent’s obligations under R8.2 for areas or regions where IROL’s or TTC are not limiting or are not used?</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement 2.3 and 3.3 both refer to the “most limiting applicable Equipment Rating”. The SDT believes that the meaning of “most limiting” is clear when read in context. Similarly, the SDT believes, ‘next most limiting’ is also clear when read in context. The SDT has responded to commenter’s suggestions for clarity involving the relationship between the Facility and the Requester, as well as clarification related to thermal capabilities of the equipment referred to in Requirement 8.2. The SDT believes that these clarifications largely address this commenter’s concerns. Requirement R2, Part 2.3 and Requirement R3, Part 3.3 both refer to the “most limiting applicable Equipment Rating”. The SDT believes that the meaning of “most limiting” is clear when read in context. Similarly, the SDT believes, ‘next most limiting’ is also clear when read in context. The SDT has responded to commenter’s suggestions for clarity involving the relationship between the Facility and the Requester, as well as clarification related to thermal capabilities of the equipment referred to in Requirement R8, Part 8.2. The SDT believes that these clarifications largely address this commenter’s concerns.</p> <p>For your suggestion regarding defining “most limiting”, etc.: The FRSDT does not believe that these terms need to be a defined term in the NERC Glossary.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Guidance documents: Drafting teams are not under obligation to develop guidance documents for each standard. The incremental change to this standard is</p> | | |

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| Organization | Yes or No ³ | Question 2 Comment |
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| related to Requirement 8, Part 8.2. The FRSDT believes that sufficient guidance has been provided in the background material of the comment form. | | |
| ReliabilityFirst Corporation | No | <p>ReliabilityFirst generally agrees with the VRFs. ReliabilityFirst voted negative on this poll due to the VSL designations as listed below:</p> <ol style="list-style-type: none"> 1. The first VSL under the Lower category needs the words “and including” inserted prior to the “15 calendar days” language. The last part of the sentence should state “but missed meeting the schedules by up to and including 15 calendar days. This extra language would further clarify that if an entity reported its Facility Ratings on the 15th day, they would fall under the “Lower” VSL. 2. For the VSLs which incorporate percentages, the VSL percentages are not inclusive. The words “or equal to” should be incorporated into such VSLs. For example, the second VSL under the Lower category should state “The responsible entity provided less than 100%, but not less than or equal to 95%...” This type of change should be incorporated in all four of the VSL categories. |
| Response: The FRSDT thanks you for your comment. The FRSDT agrees and has made the proposed revisions | | |
| Consumers Energy | No | see comments on the proposed Standard. |
| Response: The FRSDT thanks you for your comment. Please see response to comments on proposed standard. | | |
| MEAG Power Municipal Electric Authority of Georgia | No | Standard language needs to be clarified as noted in our ballot submission before affirming the VRFs and VSLs. |
| Response: The FRSDT thanks you for your comment. Please see clarifying revisions in the Summary Consideration for Question 1. | | |
| National Grid | No | The selection of 100% to 95%, and 95% to 90%, etc, seems arbitrary and not based on a reliability reason. It is hard to understand how one would classify whether the information provided would fall into those percentage categories and would then cause the risk to move from low to severe. |
| Response: The FRSDT thanks you for your comment. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found. | | |

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| Organization | Yes or No ³ | Question 2 Comment |
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| Niagara Mohawk (National Grid Company) | No | The selection of 100% to 95%, and 95% to 90%, etc, seems arbitrary and not based on a reliability reason. It is T hard to understand how one would classify whether the information provided would fall into those percentage categories and would then cause the risk to move from low to severe. |
| <p>Response: The FRSDT thanks you for your comment. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found.</p> | | |
| Pepco Holdings Inc | No | The time horizon for supplying the limiting component should be in the planning horizon. |
| <p>Response: The FRSDT thanks you for your comment. The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.</p> | | |
| American Electric Power | No | The Violation Risk Factor for 8.2 is the same as that required for 8.1. The real-time reliability need for the data required in 8.2 is questionable, at best. Since this data need not be supplied prior to 30 days after requested, it is inconsistent with a VRF of “Medium”. Rather for 8.2 it should be “Lower”. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| Occidental Chemical | No | The VRF for R 8.2 should be “Lower” since the data is not required for real time operations as is R 8.1, which has a VRF of “Medium.” |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| Manitoba Hydro | No | The VRF should be Lower. Requirement 8.2 only requires the entity to provide information, and this |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--|
| | | information is the next most limiting element not the most limiting element. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| Indeck Energy Services | No | <p>The VSL's are focused on a TO with numerous ratings to provide. A GO might only have one. The GO violation would always be Severe. The number of ratings not provided should be an "either or" with the percentage, such as: Lower VSL: The responsible entity failed to provide more than 5 Ratings or provided less than 100%, but not less than 95% of the required Rating information to all of the requesting entities. Moderate VSL: The responsible entity failed to provide more than 10 Ratings or provided less than 100%, but not less than 90% of the required Rating information to all of the requesting entities. High VSL: The responsible entity failed to provide up to 15 Ratings or provided less than 100%, but not less than 85% of the required Rating information to all of the requesting entities. Lower VSL: The responsible entity failed to provide up to 20 Ratings or provided less than 85% of the required Rating information to all of the requesting entities.</p> |
| <p>Response: The FRSDT thanks you for your comment. Note that the VSLs only provide a starting point for the determination of a penalty or sanction. There are many other mitigating/aggravating factors used to determine the actual penalty or sanction.</p> | | |
| Tri-State G&T | No | <p>There is room for confusion where the VSLs for R7 and R8 use the phrase "missed meeting the schedules." Depending on the intent, it should perhaps be changed to "missed meeting one or more schedules" or "missed meeting all of the schedules" in each of the VSLs.</p> |
| <p>Response: The FRSDT thanks you for your comment. Because the VSLs contain the phrase, "requesting entities" there should be no confusion. If there was only one requesting entity, there should be only one schedule – but if there were 10 requesting entities, there should be 10 schedules.</p> | | |
| NERC Standards Review Subcommittee | No | <p>We agree that the "Medium" rating for R8.1 is correct since it is due immediately. However, the VRF for R8.2 should be "Lower" since the data is not required immediately for real-time operations.</p> |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements</p> | | |

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| Organization | Yes or No ³ | Question 2 Comment |
|---|------------------------|---|
| have the same VRF. | | |
| Seattle City Light | No | We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1 |
| Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. | | |
| BGE | Yes | |
| Bonneville Power Administration | Yes | |
| Clark Public Utilities | Yes | |
| Dominion | Yes | |
| East Kentucky Power Cooperative | Yes | |
| Exelon | Yes | |
| Georgia Transmission | Yes | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--------------------|
| Corporation | | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |
| New Harquahala Generating Co. | Yes | |
| New York Power Authority | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| Pacific Gas & electric Company | Yes | |
| PacifiCorp | Yes | |
| Public Service Enterprise Group | Yes | |
| South Carolina Electric and Gas | Yes | |
| Southern Company Generation (SCG) Technical Services | Yes | |
| Southern Company Transmission | Yes | |
| SPP Reliability Standards Development | Yes | |
| SRP | Yes | |
| United Illuminating Company | Yes | |
| We Energies | Yes | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|---|
| Xcel Energy | Yes | |
| American Transmission Company, LLC | Yes | ATC agrees, however, believes the Violation Risk Factor for requirement 8 should be changed to “Low” and the Time Horizon for requirement 8 should be “Planning”. Information pertaining to a second limit is informational because an operator at the desk cannot act on this information without obtaining additional information or technical support. Furthermore, the fact that the information must be specifically requested validates a lower risk level. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> <p>The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.</p> | | |
| MISO Standards Collaborators | Yes | We agree, however, the Violation Risk Factor for requirement 8 should be changed to “Low” and the Time Horizon for requirement 8 should be “Planning”. Information pertaining to a second limit is informational because an operator at the desk cannot act on this information without obtaining additional information or technical support. Furthermore, the fact that the information must be specifically requested validates a lower risk level. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> <p>The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.</p> | | |

3. Do you agree with the proposed Measure M8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: The majority of commenters agree with the Measure M8. A couple of commenters had suggestions for including language that limits the scope to requested data and other specific language. The FRSDT believes that the phrase “in accordance with Requirement R8” contained in M8 is sufficient language to tie the measure to the requirement and provide the linkage suggested.

| Organization | Yes or No ⁴ | Question 3 Comment |
|---|------------------------|--|
| Louisville Gas and Electric Co. | | The Measurement (M8) does not clarify what else constitutes “shall have evidence” other than the dated electronic note. : M8. Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R87. |
| <p>Response: The FRSDT thanks you for your comment. The intent of the measure is to provide guidance as to the type of evidence that is necessary for the requirement. The phrase “or other comparable evidence” provides an entity the flexibility to develop other types of evidence that may be acceptable.</p> | | |
| U.S. Bureau of Reclamation – Martin Bauer P.E. | | <p>The proposed language of parts 8.2, 8.2.2, and M8 is ambiguous and does not make clear the intent of the proposed Requirement 8, which is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, we have provided proposed alternative language for parts 8.2, 8.2.2, and M8 which we believe clarifies the intent, while not changing the actual requirements.</p> <p>M8. Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings, identity of limiting equipment, and if requested, thermal rating of the equipment to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and</p> |

⁴ When this column is blank, it indicates a comment that was submitted with a ballot but not via the electronic comment form. Some commenters submitted duplicate comments with their ballot and via the electronic comment form; in this case, the Yes or No column is marked with their response in the electronic comment form.

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| Organization | Yes or No ⁴ | Question 3 Comment |
|--|------------------------|---|
| | | Transmission Operator(s) in accordance with Requirement R87. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT has made clarifying revisions to the requirement. Please see the proposed revisions in the Summary Consideration of Question 1.</p> | | |
| Xcel Energy | No | |
| GDS Associates | No | a. The applicability to the GO should not be stated in parenthesis. We suggest rewording such as “Each Transmission Owner and Generator Owner shall have [...]” |
| <p>Response: The FRSDT thanks you for your comment. The style incorporated is necessary to indicate that this only applies to a GO who has Facilities applicable to Requirement 2. R8 is not applicable to all GOs.</p> | | |
| East Kentucky Power Cooperative | No | EKPC does not believe that the identity of the limiting equipment is necessary to provide a reliable BES. Therefore, this information should not be required in R8 or M8. |
| <p>Response: The FRSDT thanks you for your comment.</p> | | |
| Indeck Energy Services | No | M8 fails to indicate that the TO or GO only need evidence of responding to specific requests. |
| <p>Response: The FRSDT thanks you for your comment. The phrase “in accordance with Requirement R8” provides sufficient indication that the TO or GO only has to provide evidence upon request.</p> | | |
| Ameren | No | Ratings (normal and emergency) should be provided by the requested date. The limiting equipment of the facility rating should be made available upon request, as needed for reliability concerns. The second limit and the corresponding limiting equipment should also be made available upon request, as needed for reliability concerns. |
| <p>Response: The FRSDT thanks you for your comment. The phrase “in accordance with Requirement R8” is sufficient language to tie the measure to the requirement and provide the linkage that you suggest.</p> | | |
| Pepco Holdings Inc | No | The measure should take into account if the requesting entity does not require the limiting components or the next limiting rating. |
| <p>Response: The FRSDT thanks you for your comment. The phrase “in accordance with Requirement R8” is sufficient language to tie the measure to the</p> | | |

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| Organization | Yes or No ⁴ | Question 3 Comment |
|---|------------------------|--|
| requirement and provide the linkage that you suggest. | | |
| Seattle City Light | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change.</p> | | |
| American Transmission Company, LLC | Yes | |
| BC Hydro and Power Authority | Yes | |
| BGE | Yes | |
| Bonneville Power Administration | Yes | |
| Clark Public Utilities | Yes | |
| Dominion | Yes | |
| Exelon | Yes | |

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| Organization | Yes or No ⁴ | Question 3 Comment |
|--|------------------------|--------------------|
| Georgia Transmission Corporation | Yes | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |
| Manitoba Hydro | Yes | |
| MISO Standards Collaborators | Yes | |
| National Grid | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| New Harquahala Generating Co. | Yes | |
| New York Power Authority | Yes | |
| Niagara Mohawk (National Grid Company) | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| PacifiCorp | Yes | |
| Public Service Enterprise Group | Yes | |
| South Carolina Electric and Gas | Yes | |
| Southern Company Generation (SCG) Technical Services | Yes | |

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| Organization | Yes or No ⁴ | Question 3 Comment |
|--|------------------------|--|
| Southern Company Transmission | Yes | |
| SPP Reliability Standards Development | Yes | |
| SRP | Yes | |
| Tri-State G&T | Yes | |
| United Illuminating Company | Yes | |
| We Energies | Yes | |
| American Electric Power | Yes | M8 is consistent with R8, but this consistency should not be confused with the reliability need for the data related to R8.2, which is questionable. |
| Response: The FRSDT thanks you for your comment. | | |
| Dynegy Inc. | Yes | We agree; however, similar to our comment in #1 above, M8 requires a TO to provide information to itself. |
| Response: The FRSDT thanks you for your comment. M8 only requires a TO to provide data to itself if it makes a request of itself. | | |

4. Do you agree with the proposed Implementation Plan for FAC-008-3, Facility Ratings? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: The majority of commenters agree with the implementation plan. One commenter suggested that NERC provide guidance on how to handle certain situations. The FRSDT maintains that the requirements are written to allow entities flexibility in determining their Facility Ratings Methodology and the subsequent Facility Ratings. The requirements allow for entities to handle both common and unique situations without being prescriptive. Another commenter suggested changing the effective date to match the end date of a NERC Alert relating to FAC-008. The FRSDT believes that the requirements under FAC-008-3 are not onerous and that entities are performing the work today that will be required under FAC-008-3.

| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| SRP | No | NERC does not specify how to handle the common situation where several switches and breakers in a substation bay have the same rating. Do you pick one 3000 Amp breaker, and the 3000 Amp switch next to it is “second most limiting,” or do you group all of the 3000 Amp devices as most limiting? When clearance to ground limits a line rating in a certain span, the next upgrade could be a nearby span, and could only be slightly higher. Such results would not provide a good gauge of the cost of a meaningful increase in the line rating. An increase in one line rating wouldn’t necessarily add to an IROL (Interconnection Reliability Operating Limit) or TTC (Total Transfer Capability). Extensive power flow, stability and voltage studies are usually needed to know that. |
| <p>Response: The FRSDT thanks you for your comment. The requirements are written to allow entities flexibility in determining their Facility Ratings Methodology and the subsequent Facility Ratings. The requirements allow for entities to handle both common and unique situations without being prescriptive.</p> | | |
| Seattle City Light | No | We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an |

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| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| | | Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1 |
| <p>Response: The FRSDT thanks you for your comment. Please see responses to your similar comments above. The team adopted your suggestion and added the word, “Thermal” for improved clarity.</p> | | |
| American Electric Power | Yes | |
| American Transmission Company, LLC | Yes | |
| BGE | Yes | |
| Bonneville Power Administration | Yes | |
| Clark Public Utilities | Yes | |
| Dominion | Yes | |
| Dynergy Inc. | Yes | |
| East Kentucky Power Cooperative | Yes | |
| Exelon | Yes | |
| GDS Associates | Yes | |
| Georgia Transmission Corporation | Yes | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |

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| Organization | Yes or No | Question 4 Comment |
|--|-----------|--------------------|
| Manitoba Hydro | Yes | |
| MISO Standards Collaborators | Yes | |
| National Grid | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| New Harquahala Generating Co. | Yes | |
| New York Power Authority | Yes | |
| Niagara Mohawk (National Grid Company) | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| Pepco Holdings Inc | Yes | |
| Public Service Enterprise Group | Yes | |
| South Carolina Electric and Gas | Yes | |
| Southern Company Generation (SCG) Technical Services | Yes | |
| Southern Company Transmission | Yes | |
| SPP Reliability Standards Development | Yes | |
| Tri-State G&T | Yes | |

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| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| United Illuminating Company | Yes | |
| Xcel Energy | Yes | |
| PacifiCorp | Yes | <p>PacifiCorp does not believe that the proposed Implementation Plan, which provides for a 12-month period before FAC-008-03 becomes effective, allows for sufficient time for entities to update their Facility Rating Methodology and their associated Facility Ratings. The Implementation Plan for this standard should be tied to the implementation of the NERC Alert for FAC-008. The Implementation Plan should reflect that the effective date for compliance with this standard is 12 months after the close of the activities required under that NERC Alert (currently scheduled for December 31, 2013). While PacifiCorp understands that the NERC Alert is not equivalent to a mandatory Reliability Standard, it nonetheless imposes significant compliance and operational burdens on registered entities and, only after the close of those activities responsive to the NERC Alert, can entities properly comply with the modifications in FAC-008-3 directed by the Commission.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT believes that the requirements under FAC-008-3 are not onerous and that entities are performing the work today that will be required under FAC-008-3.</p> | | |
| Ameren | Yes | <p>The implementation plan as proposed would be acceptable if the requirements of the proposed standard would be modified, as discussed in items 1 and 3 above and below in item 5.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses to your other comments.</p> | | |

5. If you have any other comments related to the FERC directive (paragraphs 756 and 771) and this Supplemental SAR that you have not already provided in response to the questions above, please provide them here.

Summary Consideration: Many commenters reiterated their suggestions for improvement to the Standard that they provided in the questions above. Several commenters requested clarification or edits to the standard which are outside of the scope of the Supplemental SAR.

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| Ameren | <p>We would agree to provide limited additional rating information for reliability needs, but most of the reasons identified by the FERC and the SDT are not for reliability. We agree that an IROL is a reliability need and additional rating and equipment information may be appropriate for discussion to formulate corrective plans to mitigate IROLs. However, we are not convinced that we need a standard to provide that information as it can be readily obtained through existing planning and operating channels, upon request. We are in favor of increased situational awareness and providing operators with information that they need to maintain system reliability, but we are also aware that too much information may be overwhelming, and all ratings data for all equipment is not needed for system operation. We have discussed these proposed additional requirements with our Transmission Operations and Operations Planning personnel, and we all agree that this additional ratings information is not needed to maintain or increase situational awareness or to develop effective Operating Plans or Planning Assessments prior to real-time operations. We do not see a need to provide second limit information in the operating horizon to address TTC calculations, generator deliverability concerns, or transmission service to load pockets. Limits to TTC may not be a reliability concern unless the incremental transfer capability is negative or a very low value. Generator deliverability and available transmission services are market products, and processes and procedures are in place for market participants to address those issues. Low values of either quantity indicate congestion concerns between the generators and the LSEs rather than reliability issues. In addition, from our perspective, system upgrades to allow the second limits to become the most limiting facilities typically cannot be completed in the operating horizon. Therefore, we do not believe that second limits need to be provided in the operating horizon. We listened to the NERC Webinar presented by the SDT and appreciated the opportunity to submit questions, but we were not convinced that there is a reliability need for all the reasons given. It appears that the SDT is still attempting to build a case to support the FERC directives to provide the additional ratings information. However, we view this proposal as a repackaged version of an earlier proposal. The industry has voiced its opinion on the need for the additional rating information on several occasions now, and each time the industry has overwhelmingly said “No, these requirements are not needed to maintain reliability”. We see no reason to change our earlier position, and therefore cannot support the latest proposed revisions to FAC-008.</p> <p>Below are additional reasons why the most limiting equipment and the second most limiting equipment and ratings should not be provided, except upon request:</p> <ol style="list-style-type: none"> 1. There is no need to provide the most limiting equipment information for all facilities as the overwhelming majority of these |

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| | <p>facilities would rarely result in an IROL or SOL.</p> <p>2. The Reliability Coordinator, Transmission Operator, and Planning Coordinator need to honor the existing ratings that are in place, and not worry about the second limits. The revised standard PRC-023 should eliminate relay limits as the first or second limits for nearly all facilities, so the concern for the system falling apart for single contingency events should be significantly reduced.</p> <p>3. Providing this second limit information would be another record keeping nightmare for the Reliability Coordinator, Transmission Operator, and Planning Coordinator, as some of these entities can barely manage the ratings information that they presently have.</p> <p>4. When IROL or SOL are identified, this should encourage discussion between the Reliability Coordinator, Transmission Operator, and Planning Coordinator and the local transmission owner or local transmission operator. These entities should work together to understand the System requirements and develop mitigation, if needed. Providing this additional rating information to entities prior to its request and without the benefits of discussion encourages operating decisions to be made unilaterally.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT has made clarifying revisions to Requirement R8, Part 8.2 and its subparts that address your comments. Please see proposed revisions in the Summary Consideration for Question 1. The FERC directives in Order 693 provide for inclusion of most of your points 1-4 above. The FRSDT believes that the Requirement R8 meets the directives. The information contained in Requirement R8, Part 8.2 and its subparts are only to be provided upon request.</p> | |
| <p>American Electric Power</p> | <p>The data required in R8.1.1 (Facility rating(s)) is essential to operate the BES reliably in real-time. However, the identification of that equipment in R8.1.2 has limited value in real time operation. Although consistent with the FERC Orders referenced with the related SAR, the identification of the “next most” limiting equipment, and the associated equipment rating is not useful in real-time operation, and could - if misunderstood - be detrimental to the reliability of the BES. Knowledge only of the rating of the “next most limiting equipment” alone is insufficient to be useful in real-time operation. To be useful other information, such as the time for which the next most limiting equipment might govern the Facility Rating rather than the most limiting equipment, must be known. However, if that time information was provided, that knowledge effectively assigns a ‘short term’ rating to the Facility in question. If that were the objective of the FERC Orders, then greater clarity and understanding and potential usefulness could have been achieved by simply requiring a short term rating (i.e. a 1-hour rating for a Facility that meets the definition contained in the preamble to R8.2). In the planning horizon, all the rating of equipment that comprises a Facility will be known, or become known, as a natural part of the planning process. Therefore, a Requirement calling for this information is at best, of minimal value. Despite these stated reservations, the SDT has provided the most benign method to respond to the FERC Orders.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires</p> | |

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| | <p>the inclusion of the topics of your comments. The background information contained in the last posting provides the following:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Bonneville Power Administration</p> | <p>There are several additional edits needed to the current draft of FAC-008-3 that would remove confusion or increase understanding. These are as follows:</p> <p>In A.5 - Define the acronym BOT;</p> <p>In B.R8 and B.R3 - International Council on Large Electric Systems (CIGRE) should be replaced with International Electrotechnical Commission (IEC) or removed and left with IEEE only as an example. Although CIGRE performs studies and provides recommendations the standards are developed in IEC.</p> <p>In M4 - (Revise) Each Transmission Owner shall... (to) Each Transmission or Generator Owner shall... and remove the second sentence which is a repetitive statement already covered by the first sentence. There is a mixed use of reference to requirements as R(number) or just a number.</p> <p>For consistency:</p> <p>In M4 - Change ... accordance to Requirement 4 to ... accordance to Requirement R4</p> <p>In M5 - Change ... accordance to Requirement 5 to ... accordance to Requirement R5</p> <p>IN M6 - Change ... R2 and R3 (Requirement 6) to ... R2 and R3 and R6</p> |
| <p>Response: The FRSDT thanks you for your comment. Your comments are outside of the scope of the Supplemental SAR. These will be considered with the next revision to FAC-008.</p> | |
| <p>Brazos Electric Power Cooperative</p> | <p>From a reliability perspective, demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. Even though the SDT has developed what some may consider a reasonable compromise by requiring identification of the second most limiting component, it is not clear how this results in a more reliable system. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue. The</p> |

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| | <p>proposed standard lacks clarity. For example, part of the purpose from FERC 693 was to ‘identify the limiting component(s) and define the increase in rating based on the next limiting component(s) for all critical facilities’. How does the proposed requirement give an entity guidance on how to detail the increase and what are considered ‘all critical facilities’? Is simply having it in the MLSE sufficient?</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> | |
| CenterPoint Energy | <p>R8.1.2 requires Transmission Owners and applicable Generator Owners to provide the “Identity of the most limiting equipment of the Facilities (as scheduled by the requesting entities)”. The identification of the most limiting equipment of the Facilities is not part of the typical planning process; that is, this information is not submitted for the development of steady-state planning models. In addition, commercially available power system planning software programs do not accept such data. CenterPoint Energy recommends that the identification of the most limiting equipment of the Facilities be provided only upon request and within 30 days of a request. This will result in R8.1: “Facility Ratings as scheduled by the requesting entity”, R8.2: “Identity of the most limiting equipment of the Facilities as requested within 30 days (or a later date if specified by the requester)”, and R8.3: “Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.3.1. Identity of the existing next most limiting equipment of the Facility 8.3.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.3.1.”</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires</p> | |

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| | <p>the inclusion of the topics of your comments. The SDT believes that providing the identity of the most limiting element was not an onerous requirement because it must be known to establish the limit. Furthermore, the standard already requires the owner to recognize the most limiting element in establishing the Facility Rating. The FRSDT has made clarifying revisions to Requirement R8, Part 8.2 and its subparts that address your comments. Please see proposed revisions in the Summary Consideration for Question 1.</p> |
| <p>City of Grand Island - Jeff Mead</p> | <p>The "second" limiting factor is to satisfy scenarios based on day ahead modeling. Changing to the second rating isn't practical in real time and thus not a benefit to BES reliability. We already have emergency limits states, so use that.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers.</p> |
| <p>Clark Public Utilities</p> | <p>Please add a Version History box to the bottom of this proposed standard clearly stating that it is a complete revision, absorbing facility rating requirements from FAC-008-01, FAC-009-01, FAC-008-2. There is a similar occurrence in the proposed PRC-005-2 revision. This provides a confirmation of the retirement of these other standards and leaves no room for doubt.</p> |
| | <p>Response: The FRSDT thanks you for your comment. These items are contained in the Implementation plan. We will ask staff to add the version history table to this standard.</p> <p>FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should all be retired when FAC-008-03 becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)</p> |
| <p>Cleco Power - Michelle A Corley;Stephanie Huffman;Robert Hirschak</p> | <p>Cleco is not comfortable with some of the terms used in the draft standard. In R1.1, R2.2, and R3.2, the standard requires the documentation shall contain assumptions used to rate the facility. If an entity uses manufactures nameplate ratings than there are no assumptions established. What happens if an entities assumptions in the eyes of an auditor are not adequate? Also, what is meant by "engineering analyses" in R1.1, R2.1, and R3.1.</p> |
| | <p>Response: The FRSDT thanks you for your comment. Even when using manufacturer's ratings, one must consider ambient conditions that change, the specific application and equipment condition. The adequacy of your assumptions must be defensible. Your support must be consistent with at least one of the following: equipment manufacturer, industry standards or test results. Engineering analysis is not required in the standard,</p> |

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| | <p>but is allowed. If an entity wishes to run studies or create detailed models for analysis that is acceptable.</p> |
| <p>East Kentucky Power Cooperative</p> | <p>It is not clear how requiring identification of the most limiting component and the second most limiting component results in a more reliable system. The identity of these components may vary over a range of ambient temperatures and network topology conditions. It would be nearly impossible to capture this information in a static published document for all possible system operating conditions. Furthermore, the time and effort involved in identifying and documenting the increase in Facility Ratings based on the second most limiting component outweighs the benefits of knowing this information. From a reliability perspective, demonstrating that Facility Ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. The system will be operated using these Facility Ratings to maintain system reliability. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue, and therefore should not be a requirement included in a Reliability Standard. Another issue with Requirement 8 is that the terms "most limiting equipment" and "next most limiting equipment" are not well defined, particularly when taken in conjunction with paragraph 76 of FERC's September 16, 2010 Order. The example given in that paragraph seems to indicate that the most limiting equipment is the component that is limiting for normal conditions, whereas the next most limiting equipment is the component that is limiting for contingency conditions. This does not appear to be the intent of Requirement 8. Clarifying language is necessary to eliminate the confusion.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating,</p> |

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| | <p>and some a 1-hour rating or some other value.</p> |
| <p>Entergy Services, Inc. - Joel T Plessinger; Edward J Davis; Terri F Benoit</p> | <p>We recommend that radially operated transmission facilities be excluded from this standard and that exclusion be accomplished in the Applicability section with the following change: 4.1. Transmission Owner (radially operated transmission facilities excluded) 4.2. Generator Owner (radially operated transmission facilities excluded)</p> |
| <p>Response: The FRSDT thanks you for your comment. We will forward your comment, which is asking for a revision to the standard that is outside the scope of this project, for inclusion in the NERC Issues Database for future consideration.</p> | |
| <p>GDS Associates</p> | <p>a. Title o The title of proposed version 3 of the standard states simply “Facility Rating” while the current FAC-008-1 is defined as the “Facility Rating Methodology”. We agree on this if there is a reason to combine the two FAC-008 and FAC-009 altogether, otherwise the title should be kept the same.</p> <p>b. Requirement R1 o While it is indicated that the line of demarcation between generation facilities and transmission facilities is the step up transformer, the equipment after the generator step up transformer is usually considered, and rightfully so, a generator lead. The unilateral assertion that equipment after the generator step up transformer be considered transmission type equipment is incorrect. This sets up a situation where all Generator Owners would be seen as a Transmission Owners, which is not proper. o The main step-up transformer is not an appropriate reference in the standard. Although FR SDT have previously agreed that “the main step up transformer may not be the point of interconnection”, and explained that the R1 and R2 should be considered together as “R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection”, this would not support the main purpose of the standard as to be generally applicable on all and any of the various generation facility topologies. While in R1 the GO is required to have “documentation for determining the Facility Ratings”, R2 requires the GO to have “a documented methodology for determining Facility Ratings (Facility Rating Methodology)”. In other words R1 it seems to require the actual Facility Ratings along with the premises related to how these were determined including the methodology, while R2 requires only the methodology. FR SDT’s justification is in contradiction with the language used. We suggest rewording both requirements R1 and R2 as to reference only the point of interconnection and not some specific equipment. o Why is nameplate rating left out of the first bullet in R1.1 but included in the first bullet of R2.1? Is this an indication that nameplate data is not a valid rating methodology? Are the rating methodologies not left to the entity to determine? o What is meant by engineering analyses? This term is very broad and can be interpreted multiple ways. Would this not add confusion to the Audit process as different Regions interpret engineering analyses in different ways? Could this not bring about unequal enforcement?</p> <p>c. Requirement R2 o While R1 references ANSI and IEEE, requirement R2 references IEEE and CIGRE standards. Even though, as explained by the FR SDT, “ANSI/IEEE/GIGRE, etc, are examples and are meant to provide flexibility” the</p> |

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| | <p>language of the standard should not be ambiguous or to reflect a selective and impartial approach. We suggest that any reference to technical standards to be provided such as “[...] industry standards (e.g. Institute of Electrical and Electronic Engineers (IEEE) standard / International Council on Large Electric Systems (CIGRE) standards / American National standard Institute (ANSI) standards, etc.)”. o Why isn’t the verbiage in Requirement 2.1 first bullet carried throughout the document (R2.2.2 & R3.2.2)? o Second bullet on R2.1 would detail the acronym for IEEE while the first reference of these standards in R1.1 is inadvertently missing this. Generally, the acronyms are explained at their first use in the text of the document. Please see also prior comment and correct the language accordingly. o What determines the average temperature at 2.2.3? How many years of data must be analyzed to provide an average? How are unusual events or variations handled? o We assume that the details pertaining the ambient conditions at 2.2.3 are meant to widen and clarify to which extent these should be considered, however we believe that the statement “[...] as they vary in real-time)” would rather confuse the GO as they may figure the likelihood of a dynamic approach. We suggest rephrasing such as “Ambient conditions (as considered by the Generator Owner based upon local conditions or / and industry standards)” o Although the footnote 1 is to serve as an example for what type of operating limitations to be considered, we believe that this can generate confusion. For instance the GO can understand that is required to consider various operating limits determined by any equipment temporarily taken out of service. While we believe that FR SDT has not envisioned this approach, we suggest deleting the word “temporary” from the footnote. o We consider that the language used at 2.4 is not the best choice. We suggest rephrasing this as follows:"2.4. The process by which the Rating of equipment that comprises a Facility is determined reflecting all of the following:2.4.1. The equipment addressed including, but not be limited by the conductors, transformers, relay protective devices, terminal equipment, series and shunt compensation devices, etc. 2.4.2. The corresponding equipment Rating characterized at a minimum, by its Normal and Emergency Ratings (or Continuous / Shorter Term Ratings)"</p> <p>d. Requirement R3 o See R1, R2 comment pertaining the standards reference. o See R2 comment pertaining the ambient conditions o See R2 comment pertaining the operating limitations o We consider that the language used at 3.4 is not the best choice. See comment and suggested changes at 2.4</p> <p>e. Requirement R4 o Not sure why the GO is required to make available the documentation for determining the Facility Ratings along with the methodology, while the TO is required to provide only the methodology. o The number of calendar days (21) to provide information is unusual. Most Standards have a period of 30 or 45 calendar days. Should there be consistency amongst all Standards? Would the change from 15 to 21 to 30 impact reliability?</p> <p>f. Requirement R5, R6, R7, R8 o It seem that there is some overlap in between this standard and FAC-009-1</p> |
| | <p>Response: The FRSDT thanks you for your comment. FAC-008-3 is a revision which includes FAC-008-1, FAC-008-2 and FAC-009-1. These three standards will be retired upon adoption of FAC-008-3 (see Implementation Plan). Requirements 5-R7 were mapped from FAC-009-1 into FAC-008-2 and subsequently FAC-008-3. Requirement R8 is a new requirement. The comments pertaining to R1-R6 are outside the scope of this Supplemental SAR. Your suggestions for improvement to R1-R6 will be considered with the next revision to the standard.</p> |

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| Georgia Transmission Corporation | <p>A. The follow comment uses the Comment form example definitions and Diagram 1 labeling from the Reliability Objective Discussion section - labeling of point (E2) and (E3) was added to Diagram 1 for clarity. We believe that the intent of the Directive’s requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of equipment 3 could result in equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, (E3) continuous rating and (E2) shorter term rating, would seem to meet the Directive’s clarified requirement. In cases where the limiting equipment’s continuous rating is equal to its emergency rating (equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The “Reliability Objective Discussion” and R 8.2.2 goes much further by suggesting that four data points are required being the continuous and emergency ratings for limiting and next most limiting equipment.</p> <p>B. The R8 requirement does reflect the Directive however we believe that item (3) and item (4) are undefined terms.</p> |
| <p>Response: The FRSDT thanks you for your comment. A. Requirement R8, Part 8.2.2 has been revised by replacing “Equipment” with “thermal” ratings. If you have multiple sets of ratings, then it is expected that the information requested under Requirement R8, Part 8.2.2 will be for each rating that is requested.</p> <p>B. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.</p> <p>The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.</p> | |
| Hoosier Energy Rural Electric Cooperative, Inc. - Robert Solomon | The Standard Drafting Team has provided an improved compromise by requiring identification of the second most limiting component. It is not clear how this draft will results in a more reliable system. Demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient from a reliability perspective. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. |

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| | <p>But this is more of an economic evaluation when developing a specific project rather than a reliability issue.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Imperial Irrigation District</p> | <p>IID has submitted a NO vote with comments during the ballot period. Provided is IID justification for the NO vote: We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment: 8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The FRSDT has made clarifying revisions to the proposed standard that meet the intent of your comment. Please see proposed revisions shown in the Summary Consideration section for Question 1 above.</p> |

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| <p>IRC Standards Review Committee</p> | <p>FAC-008-2, R8 is redundant with respect IRO-010 R1 that requires the RC to ask for needed data; and R3 requires TOs and GOs to provide that facility data. It is not clear the purpose of R8.2.1, it appears to be ambiguous and lacks transparency. There is no identification of who defines a “major city” much less what constitutes a “major city”. Similarly there is no identification of who defines a “load pocket” much less what constitutes a “load pocket”. FAC-008 R8 could further reduces reliability because if the requirement were effected it would allow 30 days response time to reporting such data.</p> <p>NERC Standards MOD-012 & 013 also provides that such data is exchanged and coordinated among all entities. Unlike the IRO standards that require identification of data and the time frame to submit the data, the FAC-008 requires the request to be completed within 30 days. Waiting 30 days for data that is needed in the next day’s operation adversely impacts real time operations. Requirement R8 and its sub-parts to supply the second most limiting element for a piece of equipment serve no purpose. IRO-008 requires the RC to assess its area both day head, as well as every 30 minutes during the day. IRO-009 requires the RC to enact “preventive measures” if an IROL is predicted. The approval of and adherence to these two standards will ensure that the second most limiting component is never an issue. These two IRO standards that “the” most limiting element be respected not just for actual overloads but for predicted overloads. At no time is it allowable for an entity to exceed an established normal rating, only to observe the next most limiting element. The Models used by the RCs will define the level of detail of the data that needs to be provided. If the component data is needed then the RC will request the data be provided per IRO-010, and will be analyzed per IRO-008. If the data is not modeled than having the TO and GO submit that information is not an effective use of time or manpower. The Industry has posted a conforming set of requirements for TOPs, making this request premature or redundant.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT does not believe that the proposed FAC-008-3 is redundant with any other standard. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some</p> | |

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| | <p>owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> <p>Regarding who identifies what systems qualify, the requester must establish that relationship in their request. Responding within 30 days is reasonable since it is recognized that these data cannot be responded to in real-time without pre-analysis.</p> |
| Luminant Power | <p>Luminant agrees that the Facility Rating standard should be revised and thanks the Standard Drafting Team (SDT) for their work and the opportunity to comment. The standard appears to be written to be more applicable to transmission owners and associated equipment and not to that of Generation Owners (GO). Luminant is concerned that the draft standard is not always clear as to what ratings are expected from GOs, and offers the following comments for consideration by the SDT.</p> <p>Requirement R1 is not clear what Ratings documentation has to be developed by the GO. The standard should only apply to the generating unit output capability, and then the equipment from the generator leads to the Point of Interconnection (POI). The requirements should not apply to the individual components that make up the generating unit such as boiler components, feedwater systems, condensate systems, environmental controls, etc. Getting into the details and systems that compose a generation unit would not provide any substantial benefit to the rating of the unit.</p> <p>Requirement R2.4 seems to imply the scope from the generating leads out to the POI, but it needs to be specifically clarified in the standard. Requirement R1 should contain a provision where the rating of a generating unit can be based upon a regulatory or legal limit to unit output. R1.2 appears unnecessary as the prime R1 requirement implies an accurate overall rating. Requirement R2.2 is confusing as to how it applies in relation to R2.1, in particular if the GO uses OEM information to rate the equipment. The footnote on 2.2.4, Operating limitations should be removed. Other NERC standards require unit conditions such as temporary deratings or unit capability changes to be reported to the BA or TOP in a timely manner.</p> <p>Requirement R2 has a Time Horizon of Long Term Planning, and temporary derates do not appear to fit that criteria. Requirement 2.4.2 requests both the normal and emergency rating for equipment from the MPT to the POI. While that may be needed and modeled for some situations, it is not necessary for all facilities. For example, at a generating facility where the lines, breakers, busswork and other electrical components from the MPT to the POI were designed and constructed well in excess of the output capability of the generating unit (and there is no transmission thru flow), the connections may not all be modeled to that level of detail. Luminant suggests the following language revision for 2.4.2: "The scope of the Ratings addressed shall include as a minimum both Normal and Emergency Ratings, where applicable and when requested by the Planning Authority or Planning Coordinator".</p> <p>Requirement R7 needs a boundary on the timeframe for a response. The way the current requirement is written, a requesting entity to send a notice to a TO or GO that they are scheduled to provide information one day later.</p> <p>The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The background material provided with the posting of the standard. During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model)</p> |

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| | <p>to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value. Your suggestions for improvements to Requirements R1 and R2 will be considered with the next revision to the standard.</p> <p>Luminant suggests the language be modified as follows: "...as scheduled by such requesting entities, but not sooner than 30 calendar days from the date of a specific request".</p> <p>The FRSDT made as few revisions to the standard as necessary to facilitate the timeline that the team is working under. The previously approved version of the standard uses the language "as scheduled by such requesting entities."</p> <p>Requirement R8 seems to imply that the applicable GO equipment is that in R2, it is not explicit. In a generating plant, there is a wide variety of equipment that may have a thermal rating. It appears the intent was to address Thermal Ratings for transmission type equipment only. Please clarify that for the GO, R8 only applies to GO equipment from the MPT to the POI.</p> <p>Requirement R8 only applies to GOs to which R2 is applicable. The verbiage in R2 only applies to "equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner".</p> <p>Requirement 8.1 (similar to R7) needs a boundary on the timeframe for a response. Luminant suggests the language be modified as follows: "As scheduled by the requesting entities, but not sooner than 30 calendar days from the date of a specific request".</p> <p>The FRSDT made as few revisions to the standard as necessary to facilitate the timeline that the team is working under. The previously approved version of the standard uses the language "as scheduled by such requesting entities."</p> <p>Requirements 8.2.1 and 8.2.2 could be combined as follows: "The identity and Equipment Rating of the next most limiting</p> |

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| | <p>equipment of the Facility”.</p> <p>The FRSDT wanted to avoid using compound requirements, so each piece of information is listed separately. Your suggestion is an acceptable substitute, but the overall majority of commenters agree with the proposed verbiage.</p> <p>The Requirement R8 proposed changes have an applicability to Generator Owners, however the SAR Applicability Section only has the Transmission Owner box checked.</p> <p>The text box in the standard explains the point that you make with respect to GO applicability:</p> <p style="padding-left: 40px;">R7 and M7 have been subdivided into two requirements (R7 and R8) and two Measures (M7 and M8). To distinguish the ‘new’ language proposed for R8 and M8 from the language that was previously approved under R7 and M7, only the new text is shown in redline</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>Manitoba Hydro</p> | <p>Given the wide range in assumptions in short time overload, NERC should provide guidance for model building and assessments. NERC should outline the ratings to include (eg. should each entity have 15 minute, 30 minute, 1 hour, 4 hour, 8 hour, etc. ratings?) and should suggest how these ratings are documented, communicated and used.</p> <p>The FRSDT designed the requirements of FAC-008-3 to be sufficient for an entity to meet the reliability need of the directive without being prescriptive. The items that you suggest to include, while probably useful and clarifying would result in an extensive industry debate which may not lead to consensus.</p> <p>Also, the industry has previously rejected the requirement to identify the next most limiting facility based on the fact that it was not a reliability need, but commercially driven want.</p> <p>This is the first time that this requirement has been posted for comment and ballot.</p> <p>In its explanation as to why the next most limiting element is required FERC and the SDT have failed to show a reliability need. In Diagram 1 of the Unofficial Comment Form, it is obvious that if a transmission owner provides a continuous and a shorter term rating, the continuous rating of the facility is based on Equipment 3 and the shorter term rating is based on Equipment 2. There is no need to provide two continuous and two shorter term ratings from a reliability perspective.</p> <p>Not all entities provide graphics similar to Diagram 1 with their Facility Ratings. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following</p> |

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| | <p>reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>Manitoba Hydro- Joe D Petaski;Greg C. Parent;S N Fernando;Daniel Prowse</p> | <p>Manitoba Hydro is voting negative for the following reasons: -The industry has previously rejected the requirement to identify the next most limiting facility based on the fact that it was not a reliability need, but commercially driven want. In its explanation as to why the next most limiting element is required, FERC and the SDT have failed to show a reliability need.</p> |
| <p>Response: The FRSDT thanks you for your comment. The industry has not rejected this requirement as this is the first time it has been posted for comment and ballot.</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or</p> | |

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| | <p>"shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>MISO Standards Collaborators</p> | <p>The MISO has some concern with the implementation of the FAC-008-3 standard because it does not benefit or enhance reliability.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Muscatine Power & Water -Tim Reed;John S Bos</p> | <p>MP&W agrees with the comments submitted by MRO NSRS. This affirmative vote reflects our belief that the proposed Standard will enhance the reliability of the Bulk Electric System and is an overall improvement to the two standards that it would replace.</p> |
| | <p>Response: The FRSDT thanks you for your comment. Thank you for your positive comment of support.</p> |
| <p>National Grid</p> | <p>1) National Grid feels it is most appropriate that the requesting party as proposed needs to have a legitimate reliability reason for requesting the information and they would be limited to the particular functional entities noted in the requirement as drafted.</p> <p>Thank you for your comment.</p> <p>2) National Grid already provides responsible parties (including the appropriate Reliability Coordinator, Planning Coordinator, and Transmission Operators) with ratings of shorter terms than continuous, as well as ambient based ratings, which can and do get applied to handle certain type of scenarios presented in the webinar. National Grid believes that there</p> |

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| | <p>is no special request needed for these parties to obtain such ratings, nor is there a need to ignore any equipment in development of such ratings. Moreover, ignoring existing equipment raises question of what potential reliability impacts would come along with this approach.</p> <p>If no entity requests additional information, National Grid is under no obligation or requirement to provide it.</p> <p>3) The treatment of multiple instances of same sized equipment (like several 800A disconnect switches in a circuit), is left unclear. In the webinar, one NERC response said to lump them all together and go to next higher limit. Another said to indicate such was the case that several pieces of equipment impose same limit. It was apparent that the only recourse would be to include language in each entity's ratings methodology should address how this is handled. It is suggested that this issue be addressed in the standard otherwise it will likely need to be addressed in a CAN or Interpretation Request.</p> <p>The FRSDT concurs with your point about adding the verbiage to your Facility Ratings Methodology. Modifying the standard to include this provision in the rating methodology requirement will be considered the next time the standard is revised.</p> <p>4) Description of how this info would be used implied that ops planner might exceed the most limiting element rating and go to next most so long as it was not a closely following relay limit that could put circuit at risk of pulling out. It is not clear to us how a system could be operated in excess of equipment ratings for the appropriate duration. The fact that we establish Short Time Emergency (STE) and Long Time Emergency (LTE) ratings higher than normal ratings that get applied in emergency situations for shorter than normal continuous timeframes seemed to be ignored.</p> <p>The FRSDT did not intend for any entity to exceed the most limiting element of a Facility. The situation described in Diagram 1 may not be applicable to all Facilities. This information is only required to be provided upon request.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>NERC Standards Review Subcommittee</p> | <p>The FERC directive may be too prescriptive in requiring a second limiting element and its facility rating. What might be useful in real-time operations would be a short-term rating of a facility (i.e. one hour rating) that may be already supplied in R2, which requires normal and emergency ratings.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in</p> | |

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| | <p>the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Niagara Mohawk (National Grid Company)</p> | <p>1) We feel it is most appropriate that the requesting party as proposed needs to have a legitimate reliability reason for requesting the information and they would be limited to the particular functional entities noted in the requirement as drafted. Thank you for your comment.</p> <p>2) National Grid already provides responsible parties (including the appropriate Reliability Coordinator, Planning Coordinator, and Transmission Operators) with ratings of shorter terms than continuous, as well as ambient based ratings, which can and do get applied to handle certain type of scenarios presented in the webinar. National Grid believes that there is no special request needed for these parties to obtain such ratings, nor is there a need to ignore any equipment in development of such ratings. Moreover, ignoring existing equipment raises question of what potential reliability impacts would come along with this approach.</p> <p>If no entity requests additional information, National Grid is under no obligation or requirement to provide it.</p> <p>3) The treatment of multiple instances of same sized equipment (like several 800A disconnect switches in a circuit), is left unclear. In the webinar, one NERC response said to lump them all together and go to next higher limit. Another said to indicate such was the case that several pieces of equipment impose same limit. It was apparent that the only recourse would be to include language in each entity's ratings methodology should address how this is handled. It is suggested that this issue be addressed in the standard otherwise it will likely need to be addressed in a CAN or Interpretation Request.</p> <p>The FRSDT concurs with your point about adding the verbiage to your Facility Ratings Methodology. Modifying the standard to include this provision in the rating methodology requirement will be considered the next time the standard is revised.</p> <p>4) Description of how this info would be used implied that ops planner might exceed the most limiting element rating and go to next most so long as it was not a closely following relay limit that could put circuit at risk of pulling out. It is not clear to us how a system could be operated in excess of equipment ratings for the appropriate duration. The fact that we establish</p> |

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| | <p>Short Time E emergency (STE) and Long Time Emergency (LTE) ratings higher than normal ratings that get applied in emergency situations for shorter than normal continuous timeframes seemed to be ignored.</p> <p>The FRSDT did not intend for any entity to exceed the most limiting element of a Facility. The situation described in Diagram 1 may not be applicable to all Facilities. This information is only required to be provided upon request.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>Pacific Northwest Small Public Power Utility Comment Group</p> | <p>Please see http://www.nerc.com/filez/enforcement/FinalFiled_ANOP_NOC-505.pdf for an example of how FAC-009-1 R1 and R2 (to be replaced by FAC-008-3 R6 and R7) for an example of how these regulations are being applied improperly to radially operated local distribution systems. Suggest “4.1. Transmission Owner (radially operated facilities excluded).”</p> |
| <p>Response: The FRSDT thanks you for your comment. We will forward your comment, which is asking for a revision to the standard that is outside the scope of this project, for inclusion in the NERC Issues Database for future consideration.</p> | |
| <p>PacifiCorp</p> | <p>Under FAC-008-3 Requirement R8, each Transmission Owner and Generator Owner (subject to Requirement R2) shall provide certain information, including facility ratings information, to the listed registered entities. The information to be provided includes, according to the proposed Requirement R8, information related to “solely and jointly owned Facilities that are existing Facilities, new Facilities, modifications to existing Facilities and re-ratings of existing Facilities).” The requirement for all Transmission Owners and Generator Owners to submit data for jointly owned facilities will mostly likely result in the following: 1) duplicative information being submitted by joint-owners of the same Facilities; and 2) while only one joint owner is likely to have responsibility for developing facility ratings, other joint owners may become liable under this requirement for activities over which they do not have clear authority to perform. Requirement R8, as written, is relatively clear and unambiguous and PacifiCorp agrees with what appears to be the intent of the requirement (i.e. that there are no gaps in facilities ratings that occur due to joint-ownership arrangements). However, due to ambiguity as to which entity or entities to which the requirement may be applicable, the standard may not be enforced effectively or equitably. PacifiCorp suggests that, to resolve this issue, the standard should require that an entity that jointly-owns Facilities designate a single registered entity as responsible for the provision of the required information.</p> |
| <p>Response: The FRSDT thanks you for your comment. Since this information must be requested, it would be unlikely that duplicate information would be provided. Nothing in the standard prevents joint owning entities from designating a responsible party.</p> | |
| <p>SERC Reliability Corporation – Carter B. Edge</p> | <p>I am voting affirmative with the understanding that this standards revision proposes to address the Order 693 directive with an equally effective alternative that addresses the reliability concern of the original directive.</p> |

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| <p>Response: The FRSDT thanks you for your comment. Thank you for your supportive comment.</p> | |
| <p>Southern Company Generation (SCG) Technical Services Southern Company Transmission</p> | <p>The following comment uses the Comment form example definitions and Diagram 1 from the Reliability Objective Discussion section: We believe that the intent of the Directive’s requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of Equipment 3 could result in Equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, the Equipment 3 continuous rating and the Equipment 2 shorter term rating, would seem to meet the Directive’s clarified requirement. In cases where the limiting equipment’s continuous rating is equal to its emergency rating (Equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The “Reliability Objective Discussion” and R 8.2.2 goes much further by suggesting that four data points (two for Equipment 3 and two for Equipment 2) are required being the continuous and emergency ratings for limiting and next most limiting equipment.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. This order clearly requires the identification of the second most limiting equipment. Requirement R8, Part 8.2.2 has been revised by replacing “Equipment” with “thermal” ratings. If you have multiple sets of ratings, then it is expected that the information requested under Requirement R8, Part 8.2.2 will be for each rating that is requested.</p> | |
| <p>SRP</p> | <p>A significant amount of staff time would be required to comply with the proposed “next most limiting element” requirement. It’s not clear that the information would be of value to FERC or NERC. In many cases the administrative burden on the utilities would only provide trivial or self-evident results.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. Since rating must consider determine the “most limiting element, the second most limiting element is generally known.</p> | |
| <p>Sunflower Electric Power Corporation- Noman Lee Williams</p> | <p>Even though the SDT has developed what some may consider a reasonable compromise by requiring identification of the second most limiting component, it is not clear how this results in a more reliable system. In addition, from a reliability perspective, demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. Yes, SDT does believe this is the most reasonable way to address the issue.</p> | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Question 5 Comment |
|--|--|
| <p>Tennessee Valley Authority - Larry Akens; Ian S Grant; David Thompson; Marjorie S. Parsons</p> | <p>TO Comments:</p> <ul style="list-style-type: none"> o For 3.1 add “conservative engineering judgment” as an option. If a CT is assumed to be rated for 1.0 rating factor because there is no certainty of whether it has a rating factor of 2.0, does this fall under engineering “analysis?” The rating factor is not provided by the manufacturer for older equipment and can’t be obtained if they are out of business now. For some equipment certain manufacturers may have been tested and ratings verified, but that may not apply to other manufacturers. <p>GO Comments</p> <ul style="list-style-type: none"> o The standard is not written clearly to determine the requirements for the GO in R1 and R2. In our company, the GO owns the GSU, with the transition to the TO occurring at the high side terminals of the GSU. My assumption for complying with this standard as a GO is that R1 includes the generator and the GSU, and R2 is not applicable to my company because no equipment falls into that category. o R1 - As written, R1 clearly includes the GSU for our situation, but 1.1 only lists the generator requirements, the GSU is not listed in 1.1. Suggested addition underlined: “1.1 The documentation shall contain assumptions used to rate the generator and the GSU if owned by the GO, and at least one of the following.....” o R2 - The requirement states “Each GO shall have a documented methodology for determining Facility Ratings of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the TO.....” The problem is that there are 2 locations specified in R1, the low side terminals of the GSU and the high side terminals of the GSU. It’s not clear which location is being referred to in R2. In our company, where the high side of the GSU is the point of ownership transition, there is no equipment between the “location specified in R1” and the point of interconnection with the TO, it is the same point. |
| <p>Response: The FRSDT thanks you for your comment. The comments pertaining to the GO applicability and Requirements R1, R2 and R3 are outside the scope of the supplemental SAR. We will forward your comments for inclusion in the NERC Issues Database for future consideration.</p> | |
| <p>The Valley Group, a Nexans company</p> | <p>In December 2010, NERC Smart Grid Task Force published Report “Reliability Considerations from the Integration of Smart Grid”, and in it, there is an excerpt on “Integration of Smart Grid Technology into the Bulk Power System”, Section 3, page 12. In this excerpt, it is stated that Smart Grid provides the ability to create an overarching, coordinated and hierarchical approach to automation, control and effectiveness. Among examples of smart grid technologies, Dynamic Thermal Circuit Rating (DTCR) devices were numbered. Although the objective of NERC Project 2009-06 is to identify the limiting component(s) and next limiting component(s) for all critical facilities, and not about Smart Grid integration; however, it should be beneficial to state a need for smart grid technologies integration, especially DTCR devices, into this NERC project. While the paramount importance is to maintain the reliability and integrity of the bulk power system, it is of equal importance to introduce reliability and economic benefits that Smart Grid technologies are bringing. So careful planning, coordination, and possibly review of the current Facility Rating Methodologies should be encouraged and introduced at present time. Static transmission line ratings, and static ratings of power system equipment in general, belong to past</p> |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Question 5 Comment |
|--|--|
| | practices, and entities should be encouraged to embrace Smart Grid into their systems. |
| <p>Response: The FRSDT thanks you for your comment. Thank you for your forward looking comment. This may be considered in future revisions. The SDT's scope was to address the remaining issues of FERC Order 693.</p> | |
| United Illuminating Company | <p>R8.2 "... for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:" "Major City" is an undefined term. It is akin to terms like Bulk Power System, and Integrated. Everyone has an opinion on what it means. What are the properties utilized to identify a municipality as a "Major City". These properties/attributes should be in an attachment. Does 8.2 refer to any load pocket or only Major Load Pockets. How is a Major Load Pocket determined? These properties/attributes should be in an attachment.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.</p> <p>The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.</p> | |
| We Energies | <p>We maintain that the changes based on the FERC directive should not be applied to Generator Owners. The connection from the generator to the transmission system is a radial connection which by its nature does not significantly impact the power transfer capability across the Bulk Electric System. The effort and cost for Generator Owners to be subject to these additional requirements is not accompanied by an increase in reliability, and is therefore not justified.</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8 only applies to GOs to which R2 is applicable. The verbiage in R2 only</p> | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Question 5 Comment |
|---|---|
| Xcel Energy | <p>applies to "equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner".</p> <p>As explained in the response to question 1 above, if the purpose of Requirement 8 is to aid in the operation of the BES, it does not accomplish this, since the most limiting element must be respected. Knowledge of a higher rating (from the next most limiting element) could give an operator a false sense that the system could be operated at a higher limit. If the purpose of Requirement 8 is to aid in planning, there is a lot of additional information that would be required. In order to determine a new facility rating assuming the current most limiting factor is not present, then a study period longer than the proposed 30 days may be required. There are many factors that would need to be considered in making this determination. With that said, Xcel Energy feels that this type of planning analysis is already occurring and minimal increase in reliability would be gained by such a requirement. Transmission Planners are already tasked with developing plans to serve projected loads at various generation/load patterns. To properly do this, information must already be evaluated with area utilities on increasing ratings when needed. If the real goal is to determine what would need to be done to bring a facility up to a higher rating, the requesting entity should identify a target loading level (MVA) for the analysis in their request to the entity that owns the equipment. This study would be based on a requested loading level (MVA), as one could not derive this from the next limiting element. The proposed requirement also presupposes that all limitations are thermal in nature. For some northern entities, while the most limiting factor may be equipment, the next most limiting factor in the ability to move power may be a presidential permit. Likewise, for a generating facility, the next most limiting factor may be a piece of equipment in the balance of the plant (boiler, turbine, etc.). The requirement does not seem to recognize this.</p> <p>Finally, Xcel Energy believes the requirement should more clearly define who can request the "next most limiting element". While the requirement clearly states who the information must be provided to, it does not seem to limit who can request that information. Limiting who can request this information would help keep this requirement more focused on reliability, and may prevent market participants from making requests that are not focused on reliability. Xcel Energy proposes the following modification to R8.1 and R8.2:8.1. As scheduled by the requesting entities (associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s))8.1.1. Facility Ratings 8.1.2. Identity of the most limiting equipment of the Facilities 8.2. Within 30 calendar days (or a later date if specified by a requesting entity), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments.</p> <p>The proposed standard does limit the scope of who can request the information. Clarifying revisions were made to eh standard to address your concerns. Please see the proposed revision under the Summary Consideration for Question 1. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to</p> | |

| Organization | Question 5 Comment |
|--------------|--|
| | <p>more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.</p> <p>The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.</p> |

Exhibit E

Record of Development of Proposed FAC-008-3 — Facility Ratings Reliability Standard

Project 2009-06 Facility Ratings

[Related Files](#)

Status:

The NERC Board of Trustees adopted the standard on May 24, 2011.

Purpose/Industry Need:

The expansion of this project is necessary to address a directive from Order 693 that was not addressed in FAC-008-2 – Facility Ratings. There were three directives in Order 693 relative to FAC-008-1 – Facility Ratings:

- (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 process such as IEEE or CIGRE and
- (3) identify the limiting component(s) and define the increase in rating based on the next limiting component(s) for all critical facilities.

The version of FAC-008-2 that was approved in 2010 only addressed the first two of the three directives. FERC's September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay on its March 18 Order included the following clarification regarding the third directive:

"In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event."

With this additional clarity, the drafting team has developed a new requirement to address the reliability intent of the third directive. NERC received a final order on March 17, 2011 granting the ERO 90 days to file a version of FAC-008 that addresses all three of the directives from Order 693, making the filing due on June 15, 2011.

| Draft | Action | Dates | Results | Consideration of Comments |
|--|---|-------------------------------------|--|--|
| <p>Draft 2</p> <p>FAC-008-3 Clean(51) Redline to last posted(52) Redline to last approved(53)</p> <p>Implementation Plan Clean(49) Redline to last approved(50)</p> | <p>Recirculation Ballot</p> <p>Vote>> Info(54)</p> | <p>05/12/11 - 05/23/11</p> | <p>Summary(56)</p> <p>Full Record(55)</p> | |
| <p>Draft 1</p> <p>Supplemental SAR(41)</p> <p>FAC-008-3 Clean(39) Redline to last approval(40)</p> <p>Supporting Materials:</p> <p>Comment Form (word)(38)</p> <p>Implementation Plan Clean(36) Redline to last approval(37)</p> | <p>Join Ballot Pool>></p> | <p>03/17/11 - 04/16/11 (closed)</p> | <p>Summary(47)</p> | <p>Consideration of Comments(48)</p> |
| | <p>Initial Ballot and Non-Binding Poll Vote>> Info(43)</p> | <p>04/21/11 - 05/02/11 (closed)</p> | <p>Full Record(46)</p> <p>Non-Binding Poll Results(45)</p> | |
| | <p>45-day Formal Comment Period</p> <p>Info(42)</p> <p>Submit comments >></p> | <p>03/17/11 - 05/02/11 (closed)</p> | <p>Comments Received(44)</p> | |
| <p>Draft 4 Proposed SAR and</p> | <p>Recirculation Ballot</p> | <p>03/08/10 - 03/18/10</p> | <p>Summary(35)</p> | |

| | | | | |
|--|--|-----------------|--|--|
| <p>Modifications to Facility Ratings Standards</p> <p>FAC-008-2 Clean(31) Redline to Initial Ballot(32)</p> <p>Draft SAR Version 3 Clean(29) Redline to Last Posting(30)</p> <p>Supporting Materials: Implementation Plan(28)</p> | <p>Vote>> Info(33)</p> | <p>(closed)</p> | <p>Full Record(34)</p> | |
|--|--|-----------------|--|--|



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|--|--|--|---|--|
| <p>Draft 3 Proposed SAR and Modifications to Facility Ratings Standards</p> <p>FAC-008-2 Clean(21) Redline to Last Posting(22)</p> <p>Draft SAR Version 3 Clean(19) Redline to Last Posting(20)</p> <p>Supporting Materials: Implementation Plan(18)</p> | <p>Initial Ballot</p> <p>Vote>> Info(24)</p> <hr/> <p>Pre-ballot Review</p> <p>Join>> Info(23)</p> | <p>1/12/10 - 01/22/10 (closed)</p> <hr/> <p>12/07/09 - 01/12/10 (closed)</p> | <p>Summary(26)</p> <p>Full Record(25)</p> | <p>Consideration of Comments(27)</p> |
|--|--|--|---|--|



| | | | | |
|---|--|-------------------------------------|--|--|
| <p>Draft 2 Proposed SAR and Modifications to Facility Ratings Standards</p> <p>Draft SAR Version 2 Clean(13) Redline to Original</p> | <p>Comment Period</p> <p>Info(15)</p> <p>Submit Comments>></p> | <p>08/10/09 - 09/09/09 (closed)</p> | <p>Comments Received(16)</p> | <p>Consideration of Comments(17)</p> |
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| <p>Posting(14)</p> <p>FAC-008-2 Clean(11) Redline to Last Posting(12)</p> <p>Supporting Materials: Comment Form (Word)(10) Implementation Plan(9)</p> | | | | |
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|---|---|---|---------------------------------|---|
| <p>Proposed SAR and Modifications to Facility Ratings Standards</p> <p>Draft SAR Version 1 (5)</p> <p>FAC-008-2 Clean(3) Redline to Recirculation Ballot(4)</p> <p>Supporting Materials: Comment Form (Word)(2) Implementation Plan(1)</p> | <p>Comment Period</p> <p>Info(6)</p> <p>Submit Comments>></p> | <p>01/20/09 - 03/05/09 (closed)</p> | <p>Comments Received(7)</p> | <p>Consideration of Comments(8)</p> |
|---|---|---|---------------------------------|---|

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FAC-008-2
BEGINS HERE

Implementation Plan for FAC-008-02 — Facility Ratings

Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before this standard can be implemented.

Modified Standards

FAC-008-01 — Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings should both be retired when FAC-008-02 becomes effective.

Compliance with Standards

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Proposed Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before the new standard becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

PLEASE DO NOT USE THIS FORM TO SUBMIT COMMENTS. Please use the electronic comment form located at the link below to submit comments on the proposed SAR for Modifications to the Facility Ratings Standards and for the Revisions to FAC-008-2. Comments must be submitted by **March 5, 2009**. If you have questions please contact Maureen Long at Maureen.long@nerc.net or by telephone at 813-468-5998.

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Background Information:

The requestors are members of the drafting team that had been working on revisions to FAC-008-1 and FAC-009-1 that resulted in a failed ballot in December 2008. The team had been working to modify FAC-008-1 and FAC-009-1 to merge the two standards into a single standard, to add violation risk factors, time horizons and violation severity levels, and to address the following three directives for FAC-008-1 in Order 693.

771. . . we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to:
- (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.

When the standard was balloted it failed primarily because of the inclusion of Requirement R7 (shown below) developed to address the third FERC directive:

R7. If a Reliability Coordinator, Transmission Operator, Transmission Planner, or Planning Coordinator requests:

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

Comment Form — Facility Ratings SAR and Standard (FAC-008-2)

Following the failed ballot, the team took the version of FAC-008-2 that was balloted and removed Requirement R7. Most negative ballots that were cast included comments focused on the fact that the reliability-related objective associated with the inclusion of Requirement R7 was not clear. In the NOPR, the Commission's comments related to the third directive associated with FAC-008-1 indicated that the proposed directive would be beneficial for market transparency and associated business decisions to upgrade congested transmission lines:

405. . . the Commission proposes that the limiting component(s) be identified and that the increase in rating based on the next limiting component(s) be defined for all critical facilities, including facilities that limit TTC, limit delivery of generation to load, or bottle generation. This would provide additional transparency and sufficient information so that the most cost effective solutions to increase facility ratings can be identified. For example, if a specific transmission line is limited by the relay settings or protective relay system, ordinarily the line could be "up rated" for a relatively modest cost. As a second example, if a line is limited by the sag of one particular span, modifying the tension in that span, even if it requires reinforcing a few towers, may result in significant increases in capability at relatively low cost. Such information would be useful to users of the Bulk-Power System and to the Commission.

The requesters made some minor format changes to the Violation Severity Levels, but made no other changes to the standard, other than removing Requirement R7 and its associated measure, data retention and violation severity levels.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. Do you agree that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1? If not, please explain in the comment area.

Yes

No

Comments:

2. Do you agree with the scope of the SAR? If not, please explain in the comment area.

Yes

No

Comments:

3. Do you agree with the applicability of the SAR? If not, please explain in the comment area.

Yes

No

Comment Form — Facility Ratings SAR and Standard (FAC-008-2)

Comments:

4. If you have any other comments on this standard or its implementation plan that you have not already submitted above, please provide them here.

No additional comments

Comments:

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:

The Standards Committee authorized posting the SAR and standard for a 45-day comment period on January 14, 2009.

Proposed Action Plan and Description of Current Draft:

This draft of the standard is identical to the draft balloted by the industry in late 2008, with Requirement R7 and its associated measure, data retention and violation severity level removed and is being posted for a 45-day comment period from January 20–March 5, 2009.

Future Development Plan:

| Anticipated Actions | Anticipated Date |
|--|-------------------------|
| 1. Post response to comments and request authorization to ballot the revised standard. | March 23, 2009 |
| 2. Post for 30-day pre-ballot review. | March 23–April 21, 2009 |
| 3. Conduct initial ballot. | April 22–May 1, 2009 |
| 4. Post response to comments. | May 8, 2009 |
| 5. Conduct recirculation ballot. | May 11–20, 2009 |
| 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. **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 performance history or rating verification 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:
 - R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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.¹
- 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*]

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

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 that its Facility Ratings are consistent with its Facility Ratings Methodology (Requirement 5).
- 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.

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.

The Generator Owner and Transmission Owner shall each keep evidence for Measure 3, Measure 4, and Measure 6 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 | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how ambient conditions were considered. (R1.4)</p> | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered:</p> <ul style="list-style-type: none"> • Ratings provided by equipment manufacturers (R1.3) • Equipment Rating standard(s) (R1.5) | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered:</p> <ul style="list-style-type: none"> • Facility commissioning data. (R1.1) • Performance history or rating verification accompanied by engineering analysis. (R1.2) | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how any of the following were considered:</p> <ul style="list-style-type: none"> • Facility commissioning data. (R1.1) • 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 | <p>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:</p> <ul style="list-style-type: none"> • Does not identify how it considered ratings from equipment manufacturers specifications (R2.2.2) • The scope of equipment type addressed is missing one of the following: | <p>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.</p> <p>OR</p> <p>The scope of equipment addressed is missing two of the following equipment types:</p> | <p>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.</p> <p>OR</p> <p>The scope of equipment addressed is missing more than two of the following equipment</p> | <p>The Transmission Owner or Generator Owner has no Facility Rating Methodology. (R2)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| | <p>transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices. (R2.4.1)</p> <ul style="list-style-type: none"> 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>transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt. (R2.4.1)</p> <p>OR</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>types: transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices. (R2.4.1)</p> <p>OR</p> <p>The methodology is missing the process for determining either normal or emergency ratings. (R2.4.2)</p> | |
| R3 | <p>The Transmission Owner or Generator Owner made its methodology available to requesting entities for inspection, but within a time period that was greater than 21 calendar days but less than or equal to 30 calendar days of receipt of a request. (R3)</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Transmission Planners or its Planning Coordinators. (R3)</p> <p>OR</p> <p>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 or equal to 45 calendar days of receipt of a request. (R3)</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Reliability Coordinators or its Transmission Operators. (R3)</p> <p>OR</p> <p>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 or equal to 60 calendar days of receipt of a request. (R3)</p> | <p>The Transmission Owner or Generator Owner received requests, but did not make its Facility Ratings Methodology available to any of the requesting entities for inspection within 60 calendar days of a receipt of a request. (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 provided more than 45 calendar days but less than 90 calendar days after the comments were received. (R4)</p> | <p>The Transmission Owner or Generator Owner provided an on-time response to comments on its Facility Ratings Methodology but the response was missing one of the following:</p> <ul style="list-style-type: none"> • An indication of whether changes will be made • If no change will be made, the reason why no change will be made. (R4) | <p>The Transmission Owner or Generator Owner provided a response to comments on its Facility Ratings Methodology, but the response was provided more than 45 calendar days but less than 90 calendar days after the comments were received, and the response was missing one of the following:</p> <ul style="list-style-type: none"> • An indication of whether changes will be made • If no change will be made, the reason why no change will be made. (R4) | <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 at least one rating, 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, but less than, 15 calendar days. (R6)</p> | <p>The Transmission Owner or Generator Owner provided all of its Facility Ratings on schedule 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 some Facility Ratings on schedule to all of the requesting entities but the Facility Ratings provided to the following entities were incomplete:</p> <ul style="list-style-type: none"> • Planning Coordinators and Transmission Planners, or | <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"> – Planning Coordinators and Transmission Planners, or – Reliability Coordinators and Transmission Operators |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|-----------|--|--|---|
| | | <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> | <ul style="list-style-type: none"> • Reliability Coordinators and Transmission Operators <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>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> |

E. Regional Variances

None Identified

F. Associated Documents

None Identified

Version History

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

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:

The Standards Committee authorized posting the SAR and standard for a 45-day comment period on January 14, 2009.

Proposed Action Plan and Description of Current Draft:

This draft of the standard is identical to the draft balloted by the industry in late 2008, with Requirement R7 and its associated measure, data retention and violation severity level removed and is being posted for a 45-day comment period from January 20 - March 5, 2009.

Future Development Plan:

| Anticipated Actions | Anticipated Date |
|---|----------------------------------|
| 1. <u>Post response to comments and request authorization to ballot the revised standard.</u> | <u>March 23, 2009</u> |
| 2. <u>Post for 30-day pre-ballot review.</u> | <u>March 23 - April 21, 2009</u> |
| 3. <u>Conduct initial ballot.</u> | <u>April 22 - May 1, 2009</u> |
| 4. <u>Post response to comments.</u> | <u>May 8, 2009</u> |
| 5. <u>Conduct recirculation ballot.</u> | <u>May 11-20, 2009</u> |
| 6. BOT adoption. | To be determined |
| 7. File with regulatory authorities. | To be determined |

- Deleted:** SAC approved
- Deleted:** posting (January 11, 2007).¶
Posted for initial
- Deleted:** from
- Deleted:** 15-February 28, 2007
- Deleted:** <#>Second draft posted for comment from July 19–August 17, 2007.¶
<#>Third draft posted for comment from July 28 through August 26, 2008.¶
<#>Initial ballot conducted October 24 – November 3, 2008.¶
¶
- Deleted:** This draft is being posted following the initial ballot of the standard, and includes a correction to a format error in R2.2 and some clarifications to the VSLs for R1, R3 and R6.¶
¶
- Deleted:** To be determined
- Deleted:** Conduct recirculation ballot.

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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.

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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. **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 performance history or rating verification 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:
 - R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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.

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- 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.¹
- 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]*

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

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 <#>If a Reliability Coordinator, Transmission Operator, Transmission Planner, or Planning Coordinator requests:¶
 <#>Identification of the most limiting Equipment that comprises a Facility, or ¶
 <#>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 Transmission Facility Rating meets **both** of the following: ... [1]

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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 that its Facility Ratings are consistent with its Facility Ratings Methodology (Requirement 5).
- 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.

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.

Deleted: <#> 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.¶

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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.

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

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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

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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, is missing identification of how both of the following were considered: <ul style="list-style-type: none"> Ratings provided by equipment manufacturers (R1.3) Equipment Rating standard(s) (R1.5) | The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: <ul style="list-style-type: none"> Facility commissioning data. (R1.1) 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: <ul style="list-style-type: none"> Facility commissioning data. (R1.1) 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: <ul style="list-style-type: none"> Does not identify how it considered ratings from equipment manufacturers specifications (R2.2.2) The scope of equipment type addressed is missing one of the following: | 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: | 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 The scope of equipment addressed is missing more than two of the following equipment | The Transmission Owner or Generator Owner has no Facility Rating Methodology. (R2) |

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| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|---|--|
| | <p>transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices. (R2.4.1)</p> <ul style="list-style-type: none"> 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>transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt. (R2.4.1)</p> <p>OR</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>types: transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices. (R2.4.1)</p> <p>OR</p> <p>The methodology is missing the process for determining either normal or emergency ratings. (R2.4.2)</p> | |
| R3 | <p>The Transmission Owner or Generator Owner made its methodology available to requesting entities for inspection, but within a time period that was greater than 21 calendar days but less than or equal to 30 calendar days of receipt of a request. (R3)</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Transmission Planners or its Planning Coordinators. (R3)</p> <p>OR</p> <p>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 or equal to 45 calendar days of receipt of a request. (R3)</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Reliability Coordinators or its Transmission Operators. (R3)</p> <p><u>OR</u></p> <p>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 or equal to 60 calendar days of receipt of a request. (R3)</p> | <p>The Transmission Owner or Generator Owner received requests, but did not make its Facility Ratings Methodology available to any of the requesting entities for inspection within 60 calendar days of a receipt of a request. (R3)</p> |

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| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|---|---|
| R4 | The Transmission Owner or Generator Owner provided a complete response to comments on its Facility Ratings Methodology, but the response was provided more than 45 calendar days but less than 90 calendar days after the comments were received. (R4) | The Transmission Owner or Generator Owner provided an on-time response to comments on its Facility Ratings Methodology but the response was missing one of the following: <ul style="list-style-type: none"> An indication of whether changes will be made If no change will be made, the reason why no change will be made. (R4) | The Transmission Owner or Generator Owner provided a response to comments on its Facility Ratings Methodology, but the response was provided more than 45 calendar days but less than 90 calendar days after the comments were received, and the response was missing one of the following: <ul style="list-style-type: none"> An indication of whether changes will be made If no change will be made, the reason why no change will be made. (R4) | The Transmission Owner or Generator Owner did not provide any response to comments on its Facility Ratings Methodology within 90 calendar days. (R4) |
| R5 | The Transmission Owner or Generator Owner developed Facility Ratings and at least one rating, but less than 5% of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5) | 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) | 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) | 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) |
| R6 | 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, but less than, 15 calendar days. (R6) | The Transmission Owner or Generator Owner provided all of its Facility Ratings on schedule to all but one of the requesting entities but the Facility Ratings provided to one of the required entities were incomplete. OR | The Transmission Owner or Generator Owner provided some Facility Ratings on schedule to all of the requesting entities but the Facility Ratings provided to the following entities were incomplete: <ul style="list-style-type: none"> Planning Coordinators and Transmission Planners, or | The Transmission Owner or Generator Owner did not provide any of its Facility Ratings to the following entities: <ul style="list-style-type: none"> Planning Coordinators and Transmission Planners, or Reliability Coordinators and Transmission Operators |

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| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|-----------|--|--|---|
| | | <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> | <ul style="list-style-type: none"> Reliability Coordinators and Transmission Operators <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>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> |

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E. Regional Variances

None Identified

F. Associated Documents

None Identified

Version History

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

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If a Reliability Coordinator, Transmission Operator, Transmission Planner, or Planning Coordinator requests:

- Identification of the most limiting Equipment that comprises a Facility, or
- 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 Transmission Facility Rating meets both of the following: | And the requester provides evidence that the Facility Rating is at least one of the following: |
|---|---|
| It is a thermal rating It is limited by equipment other than the conductor | Used to develop an Interconnection Reliability Operating Limit A limitation of Total Transfer Capability An impediment to generation deliverability An impediment to service to major cities or load pockets |

| | | | | |
|----|---|--|---|------------------|
| 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 not 60 |
|----|---|--|---|------------------|

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 |
| Authorized by Standards Committee: January 14, 2009 |

| SAR Requestor Information | SAR Type <i>(Check a box for each one that applies.)</i> |
|---|--|
| Name Paul Johnson and members of the Facility Rating SDT | <input type="checkbox"/> New Standard |
| Primary Contact Paul Johnson, former Facility Ratings SDT Chair and former members: Robert Birch, Robert Kluge, Robert Millard, Steven Myers, Phil Riley, Tapani Seppa, Vladimir Stanisic, Ronald Szymczak, Chifong Thomas, Michael Viles | <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 |

| |
|--|
| <p>Purpose</p> <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
|--|

Standards Authorization Request Form

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).

Detailed Description

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

The proposed changes have already been through stakeholder review and reached 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.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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 | Secures energy and transmission (and related generation services) to serve the end user. |

Standards Authorization Request Form

| | | |
|--|--------|--|
| | Entity | |
|--|--------|--|

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

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

| SAR ID | Explanation |
|---------------|--------------------|
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Regional Differences

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

The drafting team 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 |
|--|--|--|---|
| <p>Missing a minor element (or a small percentage) of the required performance</p> <p>The performance or product measured has significant value as it almost meets the full intent of the requirement.</p> | <p>Missing at least one significant element (or a moderate percentage) of the required performance.</p> <p>The performance or product measured still has significant value in meeting the intent of the requirement.</p> | <p>Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component.</p> <p>The performance or product has limited value in meeting the intent of the requirement.</p> | <p>Missing most or all of the significant elements (or a significant percentage) of the required performance.</p> <p>The performance measured does not meet the intent of the requirement or the product delivered cannot be used in meeting the intent of the requirement.</p> |

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

Associated Documents

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

Functional Model Version 3

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

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**
 - Transmission Owner.
 - Generator Owner.
5. **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 performance history or rating verification 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:
 - R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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.¹
- 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*]

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

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 that its Facility Ratings are consistent with its Facility Ratings Methodology (Requirement 5).
- 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.

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.

The Generator Owner and Transmission Owner shall each keep evidence for Measure 3, Measure 4, and Measure 6 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|---|
| R1 | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, does not identify how ambient conditions were considered. (R1.4)</p> | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: Ratings provided by equipment manufacturers (R1.3) Equipment Rating standard(s) (R1.5)</p> | <p>The Generator Owner’s Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: Facility commissioning data. (R1.1) Performance history or rating verification accompanied by engineering analysis. (R1.2)</p> | <p>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) 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)</p> |
| R2 | <p>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</p> | <p>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</p> | <p>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 The scope of equipment 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)</p> | <p>The Transmission Owner or Generator Owner has no Facility Rating Methodology. (R2)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| | <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 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>OR The methodology is missing the process for determining either normal or emergency ratings. (R2.4.2)</p> | |
| R3 | <p>The Transmission Owner or Generator Owner made its methodology available to requesting entities for inspection, but within a time period that was greater than 21 calendar days but less than or equal to 30 calendar days of receipt of a request - (R3)</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Transmission Planners or its Planning Coordinators. (R3) OR 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 or equal to 45 calendar days of receipt of a request</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Reliability Coordinators or its Transmission Operators. (R3) 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 or equal to 60 calendar days of receipt of a request</p> | <p>The Transmission Owner or Generator Owner received requests, but did not make its Facility Ratings Methodology available to any of the requesting entities for inspection within 60 calendar days of a receipt of a request. (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 provided more than 45 days but less than 90 days after the comments were received. (R4)</p> | <p>The Transmission Owner or Generator Owner provided an on-time response to comments on its Facility Ratings Methodology but the response was missing one of the following: An indication of whether changes will be made OR If no change will be made, the reason why no change will be made. (R4)</p> | <p>The Transmission Owner or Generator Owner provided a response to comments on its Facility Ratings Methodology, but the response was provided more than 45 days but less than 90 days after the comments were received, and the response was missing one of the following: An indication of whether changes will be made OR If no change will be made, the reason why no change will be made. (R4)</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> |
| <p>R5</p> <p>R6</p> | <p>The Transmission Owner or Generator Owner developed Facility Ratings and at least one rating, 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 provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by up to, but less than, 15 calendar days. (R6)</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 provided all of its Facility Ratings on schedule 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 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 provided some Facility Ratings on schedule to all of the requesting entities but the Facility Ratings provided to the following entities were incomplete:</p> <ul style="list-style-type: none"> – Planning Coordinators and Transmission Planners, or | <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> <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"> – Planning Coordinators and Transmission Planners, or – Reliability Coordinators and Transmission Operators |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|-----------|--|---|--|
| | | <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>– Reliability Coordinators and Transmission Operators OR 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>OR 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> |



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Two Comment Periods Open

Now available at:

http://www.nerc.com/filez/standards/Reliability_Standards_Under_Development.html

SAR and Standard for FAC-008-2 — Facility Ratings (Project 2009-06)

The Facility Ratings Standard Drafting Team has posted the proposed Standards Authorization Request (SAR) for modifications to the Facility Ratings along with the proposed version of FAC-008-2 — Facility Ratings for a 45-day comment period beginning on January 20, 2009 and **ending on March 5, 2009**.

Please use this [electronic form](#) to submit comments. If you experience any difficulties in using the electronic form, please contact Lauren Koller at 609-524-7047.

The status, purpose, and supporting documents for this project — including an off-line, unofficial copy of the questions listed in the comment form — are posted at the following site: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Background

The revisions to these two standards will result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines attached to this SAR and to two of the three applicable FERC directives in Order 693.

The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except 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 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 Requirement R7.

SAR and Supporting Document for Reliability of Protection Systems (Project 2009-07)

The Standards Committee has posted a proposed SAR and Technical Paper for Reliability of Protection Systems for a 30-day comment period beginning on January 20, 2009 and **ending on February 18, 2009**.

Please use this [electronic form](#) to submit comments. If you experience any difficulties in using the electronic form, please contact Lauren Koller at 609-524-7047.

The status, purpose, and supporting documents for this project — including an off-line, unofficial copy of the questions listed in the comment form — are posted at the following site: http://www.nerc.com/filez/standards/Project2009-07_Reliability_of_Protection_Systems.html

Background

While the current Transmission Planning (TPL) series of NERC Reliability Standards generally address system design considerations related to system contingencies, those considerations are not adequate to address the complexities of Protection System performance for equipment failures within the Protection System itself. The drafting team will work to draft a standard to require facility owners to have protection systems installed such that the failure of one of the specified components of a protection system would not prevent meeting the Bulk Electric System performance specified in the TPL standards.

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*

Name (23 Responses)
Organization (23 Responses)
Group Name (14 Responses)
Lead Contact (14 Responses)
Contact Organization (14 Responses)
Question 1 (30 Responses)
Question 1 Comments (37 Responses)
Question 2 (33 Responses)
Question 2 Comments (37 Responses)
Question 3 (36 Responses)
Question 3 Comments (37 Responses)
Question 4 (14 Responses)
Question 4 Comments (37 Responses)

| |
|--|
| |
| Scott Berry |
| Indiana Municipal Power Agency |
| |
| |
| No |
| This standard is an exercise in paperwork for Generator Owners and does not increase the reliability of the bulk power system. The standard seems to be intended more for transmission equipment rather than generators, which is evident when asking for Normal and Emergency Ratings of equipment (R2.4.2). Generators do not have emergency ratings that should be used for modeling purposes. The generator capability and verification of capability is covered by other standards (MOD-010, IRO-004, MOD-024, and MOD-025). Any generator temporary limitations will be taken into account for operational purposes by using TOP-002-2, requirement 3. There is no advantage to using a calculated facility rating for planning purposes when a real facility rating is available and certainly mandated by other standards. The main focus of a standard should be to increase the reliability of the bulk power system. The application of this standard to Generator Owners does not increase the reliability of the bulk power system. Therefore, we believe this standard should not apply to Generator Owners. |
| |
| SERC Engineering Committee Planning Standards Subcommittee |
| Phillip R. Kleckley |
| South Carolina Electric & Gas |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| No Additional Comments |
| |
| Greg Mason |
| Dynegy |
| Yes |
| |
| No |
| The SDT received several negative comments from Generator Owners related to the provisions of R1.2 and R1.3. Regardless of whether the "radial facilities" that connect the generator to the grid are considered part of the generating facility or "transmission facilities", unit testing verifies that the rating of these "radial facilities" is greater than or equal to the tested capability of the unit and verifies that the tested rating of the generator is the most limiting element of these "radial facilities". The SAR should consider this issue. |
| Yes |
| |
| No Additional Comments |
| |

| |
|---|
| PacifiCorp |
| Sandra Shaffer |
| PacifiCorp |
| |
| Yes |
| |
| No |
| <p>: NERC Standards MOD-024 and MOD-025 require verification of the real and reactive output capabilities of generating units. This verification is a determination of the Facility Rating. FAC-008-2 R1 requires the Generator Owner to have a methodology to determine the Facility Rating of its generating units and R5 requires the Generator Owner to perform the determination. Xcel Energy considers this a duplication of the requirements contained in MOD-024 and MOD-025. Another concern is the acceptability of the use of manufacturers' ratings and calculations in determining a Facility Rating. This would lead to a Rating that would, in most cases, be different than the Rating determined by MOD-024 and MOD-025 verification testing. Having two rating numbers can lead to confusion and would be detrimental to grid reliability. To point, one of the root causes of the widespread 1996 blackout in the WECC region was the use of manufacturers' ratings for generator reactive power to determine stability limits. This led to the development of NERC standards that have evolved into the current MOD-025. The FAC Standards Drafting Team previously justified the inclusion of Generator Owners as follows: Capability verification testing under a specific set of conditions is not the same as a Facility Rating – realizing that a generator's capability is a family of data. The approved definition for Facility Rating is: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." At best, a single verification by itself following what is required in MOD-024-1 and MOD-025-1 would be a subset of what is required in complying with FAC-008-2. FAC-008-2 covers associated transmission facilities owned by (or considered part of) the generator, as well as the peer review concepts and the requirement to provide the ratings to interested parties. Xcel Energy disagrees with this viewpoint. The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value. Even the rating of planned facilities is normally based on the expected limits from the equipment behind the generator. In summary, Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners).</p> <p>ISSUE #1: Clarification on the proposed FAC-008-2 standard for transmission and substation equipment should be provided. The definition of an Equipment Rating in NERC's glossary of terms is: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner." FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'. We'd like clarification that the standard applies only to the ampacity portion of the Equipment Rating and not the full definition as noted above. The standard seems to be setup that way, but there are some questions related to the full definition of Equipment Rating and how it applies to the standard. Our facilities have always been constructed to conform to applicable IEEE and ANSI standards at the time of installation. If this doesn't cover the intent of the standard, would you please provide an example of ratings to be included for voltage, frequency, and transient conditions for a facility? An example would assist us in determining what is required to be reported, especially about the requirement of transient condition and duration. An example of what we've done to comply with FAC-009 is also attached for your review/comments. (It doesn't include the spreadsheets that combine T-Lines and Sub ratings.) In addition, the short circuit information is kept by all utilities in a separate databases and run periodically to address breakers short circuit ratings. Is it the intent of this standard to add these reports to this Facility Ratings data? ISSUE #2: The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction—and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The original drafting team for FAC-008 considered this issue when drafting the current standard. In response to a request to add the requirement that the methodology be . . . "consistent with and based on credible and recognized standards/criteria . . . ", the drafting team responded: "The Drafting Team did not adopt the change because there are many Facilities in place with ratings that were established many years ago and it would be very costly to go back and re-establish ratings based on a set of industry standards." The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs (which could run into the 100's of millions—and potentially billions—of dollars industry-wide) would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require</p> |

entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Example-Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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 R2.1.4. In the case of Equipment placed in service prior to the effective date of this requirement, readily available records or data or operational experience. 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, if readily available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). If the intent of this requirement is to force entities to collect this information, then an extended implementation plan should be developed that will allow industry participants sufficient time to gather the required data before the revisions take effect.

Greg Rowland

Duke Energy

Yes

Yes

Yes

No Additional Comments

APS - Technical Projects Engineering

Douglas Selin

Arizona Public Service Co.

Yes

No

1.)The scope of Requirement R1 is overly broad and vague. A statement similar to R2.4.1 that narrows the scope down to specific pieces of equipment is needed for the generator data. Requirement R1 Specifies that the generator owner shall document the methodology determining the Facility Ratings of its generating unit facilities. However, it does not cite what specific generating unit facilities it is talking about (the generator? The exciter? The governor? The various fans, pumps, motors and auxiliaries that are all part of generating unit facilities?) Also, it is unclear exactly what ratings are being addressed (voltage, current, MW, MVAR, temperature, vibration)? There are so many breakers, transformers, motors, switches, etc in a generating facility that it would be impossible to document every single rating and how that rating was developed unless the scope of the ratings referred to in R1 is very focused. 2.) R1.1 indicates that the facility rating methodology should specify how it uses commissioning data in its methodology. Again, this is too vague unless specific identification of what equipment and what commissioning data is being addressed is included. There are so many systems that get commissioned in the generating plant that a vague requirement is impossible to comply with. 3.)It is not clear in the wording of FAC-008-2 exactly what type of rating is to be documented. Different entities use different ratings and those ratings don't necessarily agree because they are used for different purposes. Comments from our generation management discuss a generator rating reported on FERC Form 1 which is not necessarily the generator owner's nameplate rating on the generator. Unless the exact type of rating for the generator is defined by the Standard (FAC-008-2), the generator owners are left to choose what ever type of rating to use and the results are not consistent. One rating might be used to ensure that you never exceed equipment capability, while another rating might be used by someone else to define what the generator is normally capable of producing and those two ratings may be very different. 4.) Rule R1.2 includes performance history in the rating methodology but it can be shown that full load tests in the winter and/or summer corrected to standard conditions will give different results and will be different from the FERC Form 1 reported rating for the generator. This goes back to point #3 above that the generator portion is too vague. 5.) Inclusion of rules R1.3, R1.4, and R1.5 can also lead to different ratings depending on what the specific rating that is being desired. Is the intended rating actual demonstrated generator capability, theoretical generator capability, a rating that shouldn't be exceeded, exactly what?

No

1) With regard to R1.1 – The value of using commissioning data for older units is not understood. Actual operating performance today has no correlation with the commissioning data for a unit that is 20 – 50 years old. Commissioning data is primarily used to prove OEM guarantee of rated output at certain contract conditions and test results do not necessarily correspond to the generator owner's rating.

With regard to R1.2 – Performance history will most likely give different values from engineering analysis or rating verification. Unless the specific desired rating is defined, many different interpretations of the rating can be made (FERC Form 1, net demonstrated seasonal capability, maximum unit capability, etc).

Russell A. Noble

Cowlitz County PUD

Yes

Yes

Yes

No Additional Comments

Alan Gale

City of Tallahassee (TAL)

Yes

Yes

Yes

No Additional Comments

Mark Kuras

PJM

Yes

No

A full reconsideration of all aspects of the standard should be encouraged. We agree with the reproposal of the Standard with R7 removed because R7 has no reliability benefit.

Yes

Requirement R1 should be removed because similar requirements to determine a generator's real and reactive capability by verification exist in MOD-024 and MOD-025. Additionally MOD-010 requires submittal of generating unit capability to the Regional Council for modeling purposes.

Jianmei Chai

Consumers Energy Company

Many generation facilities have been in service for years under ratings established at the time of construction—and documentation of the basis for those ratings may no longer be available as required by R1. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. R1.4 - Further discussion/clarification of "Ambient conditions" needs to be contained in the Standard.

David Kiguel

Hydro One Networks Inc.

No

We believe that VRFs and VSLs are an integral part of a Standard and should be developed, commented and balloted with it. The SAR should have included these.

No

Please see response to question 1.

Yes

In the current version of the standard and in the proposed draft, Requirements R3 and R4 obligate TOs to subject their

rating calculation methodologies to inspection and review by their RC, TOP, TP or PC. While we agree that TOs could share this material, we do not consider that a technical review and obligation to respond to comments should take place. Ratings are the sole prerogative of the asset owners and the decision on how to manage the life cycle of their assets and how they are going to be operated cannot be taken away from them. The overriding principle is that asset owners must have the final say on the ratings of the equipment they own. In response to this very comment submitted in the past, the SDT has stated that the intent of the requirement is to subject the methodology to a "peer review." Our view is that if it is a peer review, such requirement does not belong in the standard.

Reliant Energy Inc and Gila River Power

Thomas J. Bradish

Reliant Energy Inc.

No

We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, "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." The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from "ratings provided by equipment manufacturers" is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility. However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004. A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is re-mediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards. FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient temperature and humidity. This data is certainly available but it is a sheet or two from a vendor manual and not a facility rating methodology. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment but the requirements are misapplied and a threat to reliability when imposed and used to calculate a generator rating. That the Standard was intended for transmission equipment rather than generators is in part illustrated by Requirement 2.4.2 The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings. Generating stations may have the ability to increase their output for a limited period of time but the Generators themselves do not have emergency ratings that should be used for modeling purposes by system planners. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. As radial components, no one is seriously questioning the ability of the elements of the generating stations to deliver power to the BES. However, generating owners are expending significant time, effort, and resources to acquire and develop documentation to meet the requirements of Facility Ratings for stations that have multiple decades of successful operation. Try to think of one disturbance or blackout that was traced to the facility rating documentation of a generating facility as the culprit. Yet the standard applies the same violation risk factors and penalties to the radial components of a small generating facility as it does to the networked components of the transmission grid. To date, the FAC-008-1 Standard is one in which generator owners are most vulnerable for non-compliance, in spite of the considerable efforts of the generator-owning industry to make sense of a set of requirements which make little sense, and which no operating entity is actually requesting of them. The individuals showing the most interest in Facility Rating documentation are the auditors or the RROs. The reason the standard it is so often violated is not because the industry is inattentive, but it is for documentation errors of successfully operating generating facilities that in reality are imposing no threat to the reliability of the Bulk Electric System. Not only are the standard requirements flawed in their application to generator owners, but the documentation

burden of proof, as it is being imposed, is unwarranted. Generator Owner applicability should be stripped from FAC-008-2 and any further reliability needs pursuant to generator performance and capability should be referred to the Generator Verification Project 2007-09. (Note on another point: Does anyone comprehend where the dividing line between R1 and R2 start and stop for generator owners and do the requirements of R.2 cover all of the same elements covered by R.1. This is very confusing and ambiguous.)

No Additional Comments

Southern Company

Jim Busbin

Southern Company Services

Yes

Yes

Yes

No Additional Comments

Kris Manchur

Manitoba Hydro

Yes

Yes

Yes

Manitoba Hydro does not agree with the Violation Risk Factors assigned to requirements R1 and R2. The requirement that the Transmission and Generator Owner each have a documented methodology for determining Facility Ratings should not be assigned a Medium VRF. Manitoba Hydro currently has a methodology that is used to determine Facility Ratings. If Manitoba Hydro does not clearly document this methodology, system reliability will not be negatively affected, as long as the appropriate ratings have been provided to the operators. Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3 or R4. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R6). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R3) jeopardize the reliability of the system? The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction—and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Manitoba Hydro recommends that Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers (IEEE) or IEC. R2.1.3. A practice that has been verified by testing or engineering analysis R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3. 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

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| specifications, if available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). |
| Steve Myers |
| ERCOT ISO |
| Yes |
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| Yes |
| |
| Yes |
| |
| No Additional Comments |
| |
| Dominion Resources Inc. |
| Jalal Babik |
| Dominion Resources Inc. |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| No Additional Comments |
| |
| FirstEnergy |
| Sam Ciccone |
| FirstEnergy Corp. |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| FirstEnergy appreciates the efforts of the drafting team in developing this SAR as a result of industry objections to Requirement R7. We recognize that this requirement was included at the direction of FERC Order 693, but believe that this requirement did not add a reliability benefit. Without this requirement in the standard, the reliability goal as stated in the purpose statement, "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.", is still maintained. When explaining the technical substantiation to FERC that this requirement does not add a reliability benefit and is outside the scope of the reliability standards arena, the SDT may offer that determination of the next most limiting equipment rating would be more efficiently and appropriately addressed in the transmission tariff and RTO market processes. The opinion of the drafting team and stakeholders is vitally important in the standards development process, and we applaud NERC staff and the Standards Committee for respecting these opinions and moving forward with this SAR. |
| Public Service Enterprise Group |
| Jeffrey P. Mueller |
| Public Service Electric and Gas Company |
| |
| No |
| The SAR should specify deleting generators from this standard. Please see comments to Question 3, below. |
| No |
| The SAR (and Standard) should not apply to Generator Owners. Facility rating methodologies and listings of limiting components do not make sense for generators from an ensuring reliability standpoint. The capability of a generator determined through testing and/or generation data derived from actual operation is what accurately determines a generator's rating, and what both markets and system operators depend upon. The Public Service Enterprise Group companies wish to call NERC's attention to the many cogent and compelling points contained in the comments filed by the Electric Power Supply Association (EPSA) in this matter. EPSA correctly points out that generators should not be subject to FAC-008-2 as it is presently drafted and proposed for change in the SAR. For example, EPSA states that a |

generator rating derived from manufacturer's equipment rating is not appropriate for use in the operation of the bulk electric system, and indeed presents a risk to the reliability of the BES as the correct rating of a generator can only be obtained by testing and/or actual operating experience. Even for planning purposes, FAC-008-2 is technically sound only for networked connection of static components of transmission equipment, and not for generators. Finally EPSA's conclusion that use of a calculated facility rating for a generator, where real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes is absolutely spot on.

No Additional Comments

Electric Power Supply Association

Jack Cashin

Electric Power Supply Association

Yes

No

We have questions regarding the applicability of the standard for generators. Please see response to question 3.

No

EPSA feels that the reliability objectives of Draft Standard FAC-008-2 are achieved even if Generators Owners or operators are not required to comply with the standard. The purpose of the standard is: "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." System operators through the Energy Management System (EMS) have the needed information for operational purposes to operate the system in a reliable manner. Moreover, for operational purposes numerous other standards require that Generators provide updated capabilities for their units which would reflect ambient temperatures, upgrades or temporary degradations of any elements of the generator circuit, etc. Consequently, system operators and owners have an abundance of information at the ready to maintain reliability. The questions that need to be answered to determine if the applicability and purpose of the standard is being met are: 1. Are the values contemplated by the Standard's Facilities Rating Methodology needed above and beyond the current EMS system information to materially preserve reliability in the operating time frame; and, 2. Does the documentation of a Facilities Rating Methodology ensure reliability through the planning process and is the process under FAC-008 superior to that contained within existing standards MOD-024-1 and MOD-025-1? If it can be shown that reliability is bolstered in a material way making the answers of the two questions above an unequivocal, yes, and FAC-008-2 is necessary for Generator Owners to comply with, then EPSA suggests an alternative approach for moving forward with this standard. Previously EPSA members have experienced problems when standards have been developed for Transmission Owners or Operators but end up including Generator Owners or Operators. This was recognized at the recent NERC Board of Trustees meeting when the formation of a Task Force was approved to resolve generator and transmission facility interface issues. The formation of the Task Force demonstrates a need to better understand the physical, informational and ownership distinctions that exist at the generation and transmission interface. A standard FAC-008-1 is already identified as a standard that the task force will need to look at. In this Facilities Rating Standard R1.2 is particularly illustrative by calling for, among other things, an identification of the methodology by which an emergency rating for a generator is developed. Particularly for planning purposes (which is part of the purpose of this standard) such a rating would not exist. EPSA asserts that the most appropriate means to go forward with the Facility Ratings is to create separate standards for Generator Owner/Operators and Transmission Owner/Operators. In that way, the language of each standard can be appropriately targeted to deal with the facilities in question. We expect that the Generation and Transmission Interface Task Force can consider this issue and that the Facilities Ratings project should await the recommendations of the task force. If it is not possible for this project team to await the outcome of the Task Force, we would propose that the following should be considered as an alternative. In developing FAC-008-2, the Standard Drafting Team has gone some way to addressing the concerns raised above. In Requirement 1 (R1) which is applicable to generators only, the draft standard calls for Generator Owners to have a Facilities Rating Methodology for its generating unit that meets certain criteria. For R2, both Generator Owners and Transmission Owners are required to have a Facilities Rating Methodology. Under that requirement, R2.4 includes the previously mentioned emergency rating, but then excludes the generator. What is still lacking in the case of a Generator Owner however, is an appropriate clarification of the boundary between facilities included in R1 and those remaining to be covered by R2. In our opinion it is not just the generator itself that needs to develop its Facilities Rating Methodology differently, but all of the equipment on the generator side of the switchyard. We would agree that the equipment contained within the switchyard is analogous to equipment that might elsewhere be owned by Transmission Owners and can be treated, for the purposes of this standard, in a manner analogous to the treatment afforded Transmission Owners. Finally, if NERC does continue to include an obligation on generators in FAC-008-2, MOD-024-1 and MOD-025-1 should be reviewed to ensure that overlaps are eliminated.

No Additional Comments

James H. Sorrels, Jr.

American Electric Power

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| Yes |
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| No |
| The limited scope of the SAR does not take advantage of the opportunity for continuous improvement. There are areas in the standard where additional clarity is necessary and the standard could also be more explicit as to applicability of requirements. |
| Yes |
| |
| AEP has identified a few areas for the SDT to consider as the team reviews the scope and content of the current draft standard. Other stakeholders will likely have issues as well that warrant expanding the scope of the SAR. For example, we believe that it should be the responsibility of the owner to provide ratings. In the case where generators own facilities that could be considered transmission facilities, the generator should be able to defer to the 'host' transmission owner to determine ratings for transmission equipment owned by the associated generator (provided the 'host' transmission owner agrees). This arrangement could be addressed administratively by letter of understanding. Also, there seems to have been an omission by not including performance history in part of R2, as performance history is included in R1. The ratings documentation for some older facilities may not be available and there may also not be an effective manner in which to obtain such documentation. However, performance history may well provide the necessary support for the existing ratings. |
| Kirit Shah |
| Ameren |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| As responded to questions above, we agree with the scope and applicability of the SAR and do not see any issues in meeting the requirements. However, we believe that SDT's response up front to the following two questions would provide further clarification, consistency and possibly would avoid future interpretation requests: 1) R1 requires to "consider" five sub-requirements, R1.1 through R1.5. What does "consider" mean? For example, assuming that data/information is available for R1.2 through R1.5, but the commissioning data is not available for a 50+ years old generator. Would a statement to that effect be adequate to meet "consideration" criteria for R1.1? If not, could you provide any guidance for such cases? 2) Since R1 and R2 both apply to generating facilities, (a) How far "out" from the generator should the R1 requirements apply? Specifically, do the iso-phase bus duct, GSU transformer, GSU disconnect switches, synchronizing breaker, any other facility up to the interconnection point belong in (i) R1, (ii) R2, (iii) some of them belong in R1 and some of them in R2, or (iv) does not matter as long as they are covered either in R1 and R2? (b) Do the R2 requirements "start" where the R1 requirements "end"? Can you please provide guidance and/or examples to ensure that GO continues to meet R1 and R2 requirements on a consistent basis |
| Catherine Koch |
| Puget Sound Energy |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| PSE requests clarity of R6 as it relates to the words "as scheduled by such requesting entities" and the added time horizon of Same-day Operations and Real time Operations. Same-day Operations would imply that an entity needs to provide facility ratings within a required timeframe of a day and Real Time Operations would imply that an entity needs to provide facility rating within one hour or less to preserve the reliability of the bulk electric system. We recognize that the words were in the previous version, but find the addition of the time horizon to create confusion and question. |
| Dale Fredrickson |
| Wisconsin Electric Power Company dba We Energies |
| Yes |
| |
| Yes |
| |
| No |

There are no explicit requirements given to allow the Generator Owner to determine which generating facilities are subject to the proposed standard. Does it apply to generators above 20 MVA single and 75 MVA aggregate connected to the BES ?

1. Section B, R1: Generating Unit Facilities: the Violation Risk Factor is listed as MEDIUM. We maintain the VSL should be revised to LOWER to reflect the fact that generators are radial elements which do not have the potential to limit area power flows like transmission lines do. 2. Section D, Compliance, 2. Violation Severity Levels: Similar to the comments for R1 above, the Violation Severity Levels for R1.1 through R1.5 should be lower than shown in the draft. The maximum level for generating facilities should be changed from SEVERE to MODERATE to adequately distinguish between a radial generator and a network transmission line.

Allegheny Energy Supply Company, LLC

Robert Loy

Allegheny Energy

Yes

Yes

Yes

We believe that "Generator Owner" should be removed from the applicability of this reliability standard. Including generation facilities in this standard does not increase the reliability of the bulk electric system. Requiring generator owners to comply with FAC-008-02 will only expose the generators to additional compliance burden without any reliability benefit. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment. However, a calculated facility rating for generators should never be used for operational or planning purposes, as the real capability and not the calculated capability should be considered. The following standards mandate the reporting of generator capability: FAC 001 – Facility Connection Requirements FAC 002 – Coordination of Plans for New Facilities MOD 011 – Steady-state Data Requirements and Reporting Procedures MOD 024 – Verification of Generator Gross and Net Real Power Capability MOD 025 - Verification of Generator Gross and Net Reactive Power Capability TOP 002 – Normal Operations Planning The verification of the key generator ratings (real and reactive) as required by Standards MOD-024 & MOD-025 is by far more relevant to BES reliability than documenting the generating facility ratings methodology. FAC 008-02 should not duplicate the above mentioned or any other applicable standards. Multiple standards should not exist in parallel to accomplish what would ultimately be the same end result.

Alice Murdock

Xcel Energy

No

Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners). See details in our response to question 3.

No

NERC Standards MOD-024 and MOD-025 require verification of the real and reactive output capabilities of generating units.* This verification is a determination of the Facility Rating. FAC-008-2 R1 requires the Generator Owner to have a methodology to determine the Facility Rating of its generating units and R5 requires the Generator Owner to perform the determination. Xcel Energy considers this a duplication of the requirements contained in MOD-024 and MOD-025. Another concern is the acceptability of the use of manufacturers' ratings and calculations in determining a Facility Rating. This would lead to a Rating that would, in most cases, be different than the Rating determined by MOD-024 and MOD-025 verification testing. Having two rating numbers can lead to confusion and would be detrimental to grid reliability. To point, one of the root causes of the widespread 1996 blackout in the WECC region was the use of manufacturers' ratings for generator reactive power to determine stability limits. This led to the development of NERC standards that have evolved into the current MOD-025. The FAC Standards Drafting Team previously justified the inclusion of Generator Owners as follows: Capability verification testing under a specific set of conditions is not the same as a Facility Rating – realizing that a generator's capability is a family of data. The approved definition for Facility Rating is: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." At best, a single verification by itself following what is required in MOD-024-1 and MOD-025-1 would be a subset of what is required in complying with FAC-008-2. FAC-008-2 covers associated transmission facilities owned by (or considered part of) the generator, as well as the peer review concepts and the requirement to provide the ratings to interested parties. Xcel Energy disagrees with this viewpoint. The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value. Even the rating of planned facilities is normally based on the expected limits from the

equipment behind the generator. In summary, Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners). *Additionally, we recognize that FERC has not approved MOD-024-1 or MOD-025-1. However, we feel strongly that developing duplicative requirements is not the correct solution. Therefore, we would recommend that either MOD-024-1 & MOD-025-1 be repealed, or FAC-008-2 needs to make accommodations for their existence.

ISSUE #1: Xcel Energy is requesting clarification on the proposed FAC-008-2 standard for transmission and substation equipment. The definition of an Equipment Rating in NERC's glossary of terms is: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner." FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'. We'd like clarification that the standard applies only to the ampacity portion of the Equipment Rating and not the full definition as noted above. The standard seems to be setup that way, but internally we've had some questions related to the full definition of Equipment Rating and how it applies to the standard. Our facilities have always been constructed to conform to applicable IEEE and ANSI standards at the time of installation. If this doesn't cover the intent of the standard, would you please provide an example of ratings to be included for voltage, frequency, and transient conditions for a facility? An example would assist us in determining what is required to be reported, especially about the requirement of transient condition and duration. An example of what we've done to comply with FAC-009 is also attached for your review/comments. (It doesn't include the spreadsheets that combine T-Lines and Sub ratings.) In addition, the short circuit information is kept by all utilities in a separate database (CAPE, ASPEN, etc.) and ran periodically to address breakers short circuit ratings. Is it the intent of this standard to add these reports to this Facility Ratings data? ISSUE #2: The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction—and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The original drafting team for FAC-008 considered this issue when drafting the current standard. In response to a request to add the requirement that the methodology be . . . "consistent with and based on credible and recognized standards/criteria . . .", the drafting team responded: "The Drafting Team did not adopt the change because there are many Facilities in place with ratings that were established many years ago and it would be very costly to go back and re-establish ratings based on a set of industry standards." The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs (which Xcel Energy anticipates could run into the 100's of millions—and potentially billions—of dollars industry-wide) would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Xcel Energy recommends that Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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 R2.1.4. In the case of Equipment placed in service prior to the effective date of this requirement, readily available records or data or operational experience. 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, if readily available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). If the intent of this requirement is to force entities to collect this information, then an extended implementation plan should be developed that will allow industry participants sufficient time to gather the required data before the revisions take effect.

Rick White

Northeast Utilities

Yes

Yes

Yes

No Additional Comments

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| Richard Kafka |
| Pepco Holdings, Inc. |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| No Additional Comments |
| |
| Bonneville Power Administration |
| Denise Koehn |
| Transmission Reliability Program |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| BPA is in support of the SAR/standard as written. |
| Michael Sonnelitter |
| FPL Energy |
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| |
| No |
| It is the opinion of FPL Energy (a.k.a. NextEra Energy Resources) that the proposed standard should not be applicable to the Generator Owner (GO). We base this opinion on the fact that there are other standards currently in place (i.e. MOD-010/011, MOD-024/025, etc...) that require the same, and in some cases more detailed information, regarding Facility Ratings and Capabilities as is being proposed in FAC-008-2. This duplication of information seems to be an unnecessary burden placed on the Generator Owners. In addition, FERC Order 693 in the discussion on FAC-008-02 identifies that the standard creates ambiguity in terms of acceptable forms of compliance for Generators. Therefore, we respectfully request that the SAR team remove the Generator Owner applicability requirements from FAC-008-2 at this time. |
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| Edward Davis |
| Entergy Services, Inc |
| Yes |
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| Yes |
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| Yes |
| |
| No Additional Comments |
| |
| Dan Rochester |
| Independent Electricity System Operator |
| Yes |
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| Yes |
| |
| Yes |
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| The IESO would like to reiterate two of its previous comments (on R4 and R5) which we feel have not been |

satisfactorily addressed by the SDT. Our previous comments on R4: We do not think this rises to the level of a reliability standard. This is an administrative process. Further, the TO and the GO own their facilities and they provide these facilities for the GOP and TOP and other applicable entities to operate. The ratings they determine provide the upper bound that their facilities may be operated to, and hence should be decided totally at their own discretion. We do not believe other entities have the right to challenge the methods used or the level of the rating determined by the facility owners. Any such challenges, even applicable, should be addressed in the agreements among the owners and the users and outside of the reliability standard process. We suggest that this requirement be removed. The SDT's Response: The intent of R4 is to provide peer review. This is an important concept in ensuring the technical accuracy of the rating methodology. Peers are more likely to have detailed knowledge of methodologies than auditors – and finding errors or questionable practices before the use of an unsound methodology results in inappropriate ratings is better than the alternative – which is to discover incorrect ratings during a system disturbance IESO's view is that this response does not recognize that the decision authority rests solely with the facility owners (as so indicated by the SDT in its response to our comments on R5, as detailed below). Providing a response to comments on the rating is an administrative procedure that does not contribute to reliability whatsoever. We request the SDT to re-consider our comment and proposal to drop this requirement. Our previous comments on R5: R5 holds the facility owners responsible for determining the ratings for their solely and jointly owned facilities. The standard is silent on which methodology to use and how ratings of jointly owned facilities are determined. For example, there is no requirement on which method to choose among joint owners if their methods are different, and on using the more conservative of the two ratings where different. This needs to be provided. SDT's Response R5 – the Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision. This response does not address which facility owner, among the joint owners, has the final say. Further, while the rating itself may be a commercially-based decision, the decision on which method to choose from among those provided by the joint owners to develop the final rating is not specified in the requirement, which can lead to confusing ratings to the users and operators of jointly own facilities and result in adverse impact on reliability. We urge the SDT to consider strengthening R5 to fill this void.

Vlad Stanisic

OPG

No

REQUIREMENT R1 DOES NOT ADDRESS THE DIRECTIVES. Directive 1: (document underlying assumptions and methods used to determine normal and emergency facility ratings) - There is no requirement to document underlying assumptions - There is no mention of normal and emergency ratings Directive 2: (develop facility ratings consistent with industry standards developed through an open, transparent and validated process) - Only one sub-requirement refers to industry standards. Even that one does not specifically call for consistency with "industry standards developed through an open, transparent and validated process". R1 calls for methodology that must identify how all 5 sub-requirements were "considered". This is ambiguous to start with since the sub-requirements are essentially mutually exclusive. There seems to be no correlation between R1 and directive (2)

No

The proposed SAR and the standard eliminate only one of the contentious requirements identified during previous stakeholders' reviews and do not take into account a number of other issues. One of the most contested, second only to R7, has been applicability of FAC008-02 to GOs. Further comments on this are provided in the question on applicability. Other issues include: - The requirements R1, R2 are burdened with a comprehensive set of sub-requirements that tend to be confusing, mutually exclusive or superfluous. The distinction between facility and equipment ratings is blurred. It is not clear whether it is necessary to document methodologies for each major element of a generating facility (boiler, turbine, generator, auxiliaries). There is also ambiguity about the scope; R1 talks about generating unit Facilities, R2 about other solely and jointly owned Facilities? Main output transformers and other HV connection equipment of a generating station may be subject to R1 or R2, depending on the equipment location, etc. - The requirements R3, R4 relate to peer review of Facility Ratings Methodologies (not the actual facility ratings?). The need for these requirements has been questioned by the RCs, PCs, TOPs, TPs (represented through ISO/RTO Council). These entities, although given the right to review GOs and TOs facility ratings methodology, recognize futility of such an exercise. During previous comment periods, the Council acknowledged that facility ratings methodology and the ratings were up to GOs and TOs discretion and cannot be challenged by other entities. They pointed out that any disagreements with respect to the ratings should be addressed outside the NERCs reliability standards process.

No

THERE IS NO RELIABILITY NEED FOR FAC 008-02 TO BE APPLICABLE TO GENERATOR OWNERS: * VARIOUS STANDARDS ALREADY ADDRESS CRITICAL ASPECTS OF GENERATION FACILITY RATINGS AND ARE SUFFICIENT FOR RELIABLE PLANNING AND OPERATION OF THE BES FAC 001 – Facility Connection Requirements FAC 002 – Coordination of Plans for New Facilities MOD 011 – Steady-state Data Requirements and Reporting Procedures MOD 024 – Verification of Generator Gross and Net Real Power Capability MOD 025 - Verification of Generator Gross and Net Reactive Power Capability TOP 002 – Normal Operations Planning These standards address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short-term deratings, verification of generator capabilities. FAC 008-02 should not duplicate the above mentioned or any other applicable standards. Multiple standards should not exist in parallel to accomplish what would ultimately be the same end result. * ENSURING THE QUALITY OF FACILITY RATINGS INFORMATION THROUGH VERIFICATION IS SUPERIOR TO

DOCUMENTING THE FACILITY RATING METHODOLOGY AS REQUIRED BY FAC 008-02 The verification of the key generator ratings (MW, MX) as required by Standards MOD-024 & MOD-025 is by far more efficient and relevant to BES reliability than documenting the generating facility ratings methodology. As several entities noted during previous comment periods, documenting the methodology as per FAC-008-02, would be just an administrative nuisance with little substance. Worth noting is that FERC order 693 (March 2007) acknowledges the relevance of MOD-024, 025 and directs the ERO (ie FRSDT) to consider them during the standard's development process. * FAC 008-02 WOULD NOT ADD VALUE TO THE CURRENT PRACTICES FOR DETERMINING GENERATOR FACILITY RATINGS Requiring generator owners to comply with the proposed FAC-008-02 will just expose the generators and auditors to additional compliance burden without any reliability benefit. The design of generating facilities and determination of Facility Ratings is a complex, yet mature, process involving coordinated effort of GOs, Equipment suppliers (vendors), Engineering and Consulting firms. It is in GOs ultimate interest to design their facilities such that applicable equipment warranties and life expectancy are not jeopardized. At the same time, the GOs have intrinsic goal to optimize utilization of their facilities within the given regulatory framework. All this influences the determination of Generating Facility Ratings. In practical terms, there is no point requesting the GOs to document these established processes and engineering practices, including the details, as required by FAC-008-02.

References related to major system disturbances, including the NERC's 2003 Blackout Report, do not indicate GENERATING Facility Rating Methodologies as a source of problems. On the other hand, NERC's 2003 Blackout report, recommendation 13c, talks about the need to evaluate TRANSMISSION facility rating methodologies and sharing of consistent ratings information. This was driven by cases where planners and operators from different areas used different ratings for the same facility (ie. HV transmission lines). This implies that the main focus of FAC 008-02 should be on major TRANSMISSION facilities.

NPCC RSC

Guy Zito

NPCC Regional Standards Committee

Yes

No

NPCC understands that this comment period is aimed specifically at the removal of requirement R7 from the failed ballot and we agree with this modification; however we have additional comments regarding the scope of this standard which are included as comments in response to Question 4.

Yes

Various existing standards already address critical aspects of Generation Facility ratings and are sufficient for the reliable planning and operation requirements of the BES. Included among these are: FAC001-Facility Connection Requirements FAC002-Coordination of Plans for New Facilities MOD011-Steady-state Data Requirements and Reporting Procedures MOD024-Verification of Generator Gross and Net Real Power Capability MOD025-Verification of Generator Gross and Net Reactive Power Capability TOP002-Normal Operations Planning These existing standards currently address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short term de-ratings, and verification of generator facility capabilities. Standards should not exist in parallel and FAC-008-02 should not duplicate requirements as they pertain to generation facilities.

Roger Champagne

Hydro-Québec TransÉnergie (HQT)

Yes

Yes

Yes

Various existing standards address critical aspects of Generation Facility ratings and could be sufficient for the reliable planning and operation requirements of the BES. Included among these are: FAC001-Facility Connection Requirements FAC002-Coordination of Plans for New Facilities MOD011-Steady-state Data Requirements and Reporting Procedures MOD024-Verification of Generator Gross and Net Real Power Capability MOD025-Verification of Generator Gross and Net Reactive Power Capability TOP002-Normal Operations Planning These existing standards currently address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short term de-ratings, and verification of generator facility capabilities. These standards and FAC-008-02 should be reviewed eventually to eliminate duplication of requirements.

Jason Shaver

American Transmission Company

| |
|---|
| Yes |
| |
| Yes |
| |
| Yes |
| |
| FERC has the ability, through its market oversight authority, to require the reporting of the limiting component and the theoretical increase in rating of the limiting component is disregarded. |
| MRO NERC STandards Review Subcommittee |
| Michael Brytowski |
| MRO |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment', the NSRS would like to have clarification of this term. Is it a type-o, should it state "Equipment Rating" |
| Kansas City Power & Light |
| Tim Hinken |
| Kansas City Power & Light |
| Yes |
| We agree with the Drafting Team regarding the deletion of the previously proposed requirement R7. |
| Yes |
| |
| Yes |
| |
| R1 is fundamentally a duplication of the requirements contained in standards MOD-024-1 and MOD-025-1 for determination and verification of generator real and reactive capabilities. Any additional requirements language that may be deemed necessary to establish the methodology for generator power capabilities should be directed there. This would also require the removal of M1 and the VSL's for R1 in this proposed standard. In addition, for either generating stations or transmission stations, there can be equipment that is of such an age as there is no nameplate information, no historical record of establishment of an equipment rating with the owner or the manufacturer, and/or the manufacturer of the equipment no longer exists to obtain rating data. It is recommended the Drafting Team consider this in the requirements for FAC-008-2. Especially consider revising R6 in the proposed standard. R2.2 requires an explanation for how each of the possible methods utilized to establish equipment ratings could be used. This does not contribute to maintaining the reliability of the BES. There are hundreds of different pieces of equipment in the field. It is recommended to remove the sub-requirements of R2.2 and to delete, "including identification of how each of the following were considered:", from requirement R2.2. |

Consideration of Comments on the Proposed SAR for Modifications to the Facility Ratings Standards and for the Revisions to FAC-008-2 — Project 2009-06

The Facility Ratings Standard Drafting Team thanks all commenters who submitted comments on the proposed SAR for modifications to the Facility Ratings standards and for the revisions to FAC-008-2. This SAR and draft standard was posted for a 45-day public comment period from January 20, 2009 through March 5, 2009. The stakeholders were asked to provide feedback on the SAR and standard through a special Electronic Comment Form. There were 38 sets of comments, including comments from more than 85 different people from over 50 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

In this document the comments have been sorted to make it easier to see where there is stakeholder consensus. All comments can be viewed in the original format at the following site:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

The vast majority of responding entities agreed with the scope of the SAR and agreed that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1. Several commenters who did agree with the removal of R7 expressed concern with the limited scope of the SAR. The FR SDT explained that proposed changes to FAC-008 and FAC-009 (FAC-008-02) have been through stakeholder review and consensus appeared to have been reached on all requirements except R7, which this SAR proposed to remove. Several entities expressed concerns that R1 was overly broad or that FAC-008-2 should not apply to generating facilities.

The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning.

For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows "performance history or rating verification supplemented by engineering analysis". MOD-024 and MOD 025 validation processes (neither MOD 024 nor MOD 025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters. FAC 008 "only" requires this Methodology be documented and followed. Therefore FAC 008 need not be redundant with MOD 024 and/or MOD 025.

Several other commenters suggested that the standard should not be applicable to Generator Owners for various reasons, including the requirements being vague and burdensome. The SDT feels strongly that the standard applies to generation Owners and has revised the Generator Owner requirements for this draft Standard (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities and options for developing facility rating documentation. The FR SDT made conforming changes to the associated measures and compliance elements.

Two commenters suggested revising the VRF from "Medium" to "Lower". The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to "Lower".

Other commenters questioned the Violation Severity Levels, indicating that they should not be severe. Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post- violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement. Following the initial posting, the FR SDT did make some additional changes to the VSLs to line up with the work of the VSL DT.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. Do you agree that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1? If not, please explain in the comment area.10

2. Do you agree with the scope of the SAR? If not, please explain in the comment area.14

3. Do you agree with the applicability of the SAR? If not, please explain in the comment area.21

4. If you have any other comments on this standard or its implementation plan that you have not already submitted above, please provide them here.39

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | Group | Phillip R. Kleckley | SERC Engineering Committee Planning Standards Subcommittee | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Additional Member</th> <th>Additional Organization</th> <th>Region</th> <th>Segment</th> <th>Selection</th> </tr> </thead> <tbody> <tr> <td>1. John Sullivan</td> <td>Ameren</td> <td>SERC</td> <td>1</td> <td></td> </tr> <tr> <td>2. Charles Long</td> <td>Entergy</td> <td>SERC</td> <td>1</td> <td></td> </tr> <tr> <td>3. Scott Goodwin</td> <td>Midwest ISO</td> <td>SERC</td> <td>2</td> <td></td> </tr> <tr> <td>4. Pat Huntley</td> <td>SERC Reliability Corp</td> <td>SERC</td> <td>10</td> <td></td> </tr> <tr> <td>5. Carter Edge</td> <td>SERC Reliability Corp</td> <td>SERC</td> <td>10</td> <td></td> </tr> <tr> <td>6. Bob Jones</td> <td>Southern Co. Services</td> <td>SERC</td> <td>1</td> <td></td> </tr> <tr> <td>7. David Marler</td> <td>TVA</td> <td>SERC</td> <td>1</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | | | | | | | Additional Member | Additional Organization | Region | Segment | Selection | 1. John Sullivan | Ameren | SERC | 1 | | 2. Charles Long | Entergy | SERC | 1 | | 3. Scott Goodwin | Midwest ISO | SERC | 2 | | 4. Pat Huntley | SERC Reliability Corp | SERC | 10 | | 5. Carter Edge | SERC Reliability Corp | SERC | 10 | | 6. Bob Jones | Southern Co. Services | SERC | 1 | | 7. David Marler | TVA | SERC | 1 | |
| Additional Member | Additional Organization | Region | Segment | Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. John Sullivan | Ameren | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Charles Long | Entergy | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Scott Goodwin | Midwest ISO | SERC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Pat Huntley | SERC Reliability Corp | SERC | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Carter Edge | SERC Reliability Corp | SERC | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Bob Jones | Southern Co. Services | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. David Marler | TVA | SERC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Group | Sandra Shaffer | PacifiCorp | X | | X | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Group | Douglas Selin | APS - Technical Projects Engineering | X | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment | Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | |
|---|----------------|--------------------------------------|---|---------------|---|---|---|---|---|---|---|----|--|--|--|--|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 1. | Baj Agrawal | Arizona Public Service Co. WECC | 1, 3, 5 | | | | | | | | | | | | | | | | | |
| 2. | Dave Simonton | Arizona Public Service Co. WECC | 1, 3, 5 | | | | | | | | | | | | | | | | | |
| 4. | Group | Thomas J. Bradish | Reliant Energy Inc and Gila River Power | | | | | X | | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Ken Parker | Gila Rivere Power | WECC | 5 | | | | | | | | | | | | | | | | |
| 5. | Group | Jim Busbin | Southern Company | | | | | X | | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Tom Sims | Southern Company Services | SERC | 1 | | | | | | | | | | | | | | | | |
| 2. | Andrew Neal | Southern Nuclear Company | SERC | 5 | | | | | | | | | | | | | | | | |
| 3. | Marc Butts | Southern Company Services | SERC | 1 | | | | | | | | | | | | | | | | |
| 4. | Jim Viikinsalo | Southern Company Services | SERC | 1 | | | | | | | | | | | | | | | | |
| 6. | Group | Jalal Babik | Dominion Resources Inc. | | X | | X | | X | X | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Louis Slade | | SERC | 5 | | | | | | | | | | | | | | | | |
| 2. | Mike Garton | | NPCC | 6 | | | | | | | | | | | | | | | | |
| 7. | Group | Sam Ciccone | FirstEnergy | | X | | X | X | X | X | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Doug Hohlbaugh | FirstEnergy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | | | | | | | | |
| 2. | Dave Folk | FirstEnergy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | | | | | | | | |
| 3. | Dick Kovacs | FirstEnergy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | | | | | | | | |
| 8. | Group | Jeffrey P. Mueller | Public Service Enterprise Group | | X | | X | | | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | James Hebson | PSEG Energy Resources and Trade, LLC | ERCOT | 6 | | | | | | | | | | | | | | | | |
| 4. | Gary Grysko | PSEG Fossil, LLC | RFC | 5 | | | | | | | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | |
|---|-------------------------|------------------------|--|------------------|---|---|---|---|---|---|---|---|----|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 9. | Group | Jack Cashin | Electric Power Supply Association | | | | | X | X | | | | | |
| 10. | Group | Robert Loy | Allegheny Energy Supply Company, LLC | | | | | X | | | | | | |
| 11. | Group | Denise Koehn | Bonneville Power Administration | X | | X | | X | X | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | |
| | 1. Dean Freel | Substation Engineering | WECC | 1 | | | | | | | | | | |
| 12. | Group | Guy Zito | NPCC RSC | | | | | | | | | | | X |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | |
| | 1. Greg Campoli | NYISO | NPCC | 2 | | | | | | | | | | |
| | 2. Mike Gildea | Constellation | NPCC | 5 | | | | | | | | | | |
| | 3. Ralph Rufrano | NYPA | NPCC | 1 | | | | | | | | | | |
| | 4. Chris de Graffenried | Con Ed | NPCC | 1 | | | | | | | | | | |
| | 5. Ted Dahill | National Grid | NPCC | 3 | | | | | | | | | | |
| | 6. Mike Garton | Dominion | NPCC | 5 | | | | | | | | | | |
| | 8. Rick White | NU | | 1 | | | | | | | | | | |
| | 9. Guy Zito | NPCC | NPCC | 10 | | | | | | | | | | |
| | 10. Lee Pedowicz | NPCC | NPCC | 10 | | | | | | | | | | |
| | 11. Gerry Dunbar | NPCC | NPCC | 10 | | | | | | | | | | |
| 13. | Group | Michael Brytowski | MRO NERC Standards Review Subcommittee | | | | | | | | | | | X |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | |
| | 1. Carol Gerou | MP | MRO | 1, 3, 5, 6 | | | | | | | | | | |
| | 2. Neal Balu | WPS | MRO | 3, 4, 5, 6 | | | | | | | | | | |
| | 3. Terry Bilke | MISO | MRO | 2 | | | | | | | | | | |
| | 4. Joe DePoorter | MGE | MRO | 3, 4, 5, 6 | | | | | | | | | | |
| | 5. Ken Goldsmith | ALTW | MRO | 4 | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 6. | Jim Haigh | WAPA | MRO | 1, 6 | | | | | | | | | | | | | | | | |
| 7. | Terry Harbour | MEC | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 8. | Joseph Knight | GRE | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 9. | Scott Nickels | RPU | MRO | 3, 4, 5, 6 | | | | | | | | | | | | | | | | |
| 10. | Dave Rudolph | BEPC | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 11. | Eric Ruskamp | LES | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 12. | Pam Sorted | XCEL | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 14. | Group | Tim Hinken | Kansas City Power & Light | | X | | X | | X | X | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | |
| 1. | Michael Gammon | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 2. | Harold Wyble | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 3. | Dennis Greashaber | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 4. | Nick McCarty | KCPL | SPP | 1, 3, 5, 6 | | | | | | | | | | | | | | | | |
| 15. | Individual | Scott Berry | Indiana Municipal Power Agency | | | | | X | | | | | | | | | | | | |
| 16. | Individual | Greg Mason | Dynergy | | | | | | X | | | | | | | | | | | |
| 17. | Individual | Greg Rowland | Duke Energy | | X | | X | | X | X | | | | | | | | | | |
| 18. | Individual | Russell A. Noble | Cowlitz County PUD | | | | X | | | | | | | | | | | | | |
| 19. | Individual | Alan Gale | City of Tallahassee (TAL) | | X | | X | | X | | | | | | | | | | | |
| 20. | Individual | Mark Kuras | PJM | | | X | | | | | | | | | | | | | | |
| 21. | Individual | Jianmei Chai | Consumers Energy Company | | | | X | X | X | | | | | | | | | | | |
| 22. | Individual | David Kiguel | Hydro One Networks Inc. | | X | | X | | | | | | | | | | | | | |
| 23. | Individual | Kris Manchur | Manitoba Hydro | | X | | X | | X | X | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 24. | Individual | Steve Myers | ERCOT ISO | | X | | | | | | | | | | |
| 25. | Individual | James H. Sorrels, Jr. | American Electric Power | X | | X | | X | X | | | | | | |
| 26. | Individual | Kirit Shah | Ameren | X | | X | | X | X | | | | | | |
| 27. | Individual | Catherine Koch | Puget Sound Energy | X | | | | | | | | | | | |
| 28. | Individual | Dale Fredrickson | Wisconsin Electric Power Company dba We Energies | | | X | X | X | | | | | | | |
| 29. | Individual | Alice Murdock | Xcel Energy | X | | X | | X | X | | | | | | |
| 30. | Individual | Rick White | Northeast Utilities | X | | | | | | | | | | | |
| 31. | Individual | Richard Kafka | Pepco Holdings, Inc. | X | | X | | X | X | | | | | | |
| 32. | Individual | Michael Sonnelitter | FPL Energy | | | | | X | | | | | | | |
| 33. | Individual | Edward Davis | Entergy Services, Inc | X | | X | | X | X | | | | | | |
| 34. | Individual | Dan Rochester | Independent Electricity System Operator | | X | | | | | | | | | | |
| 35. | Individual | Vlad Stanisic | OPG | | | | | X | X | | | | | | |
| 36. | Individual | Roger Champagne | Hydro-Québec Transenergie (HQT) | X | | | | | | | | | | | |
| 37. | Individual | Jason Shaver | American Transmission Company | X | | | | | | | | | | | |
| 38. | Group | Ben Li | IRC Standards Review Committee | | | | | | | | | | | | |
| Additional Member | | | | Additional Organization | Region | Segment Selection | | | | | | | | | |
| 1. | Anita Lee | AESO | WECC | 2 | | | | | | | | | | | |
| 2. | Patrick Brown | PJM | RFC | 2 | | | | | | | | | | | |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| | Commenter | Organization | | Industry Segment | | | | | | | | | | | | | | | | |
|-----------------------------|-----------|--------------|---|------------------|---|---|---|---|---|---|---|---|----|--|--|--|--|--|--|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | |
| 3. Lourdes Estrada-Salineró | CAISO | WECC | 2 | | | | | | | | | | | | | | | | | |
| 4. Steve Myers | ERCOT | ERCOT | 2 | | | | | | | | | | | | | | | | | |
| 5. Jim Castle | NYISO | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 6. Matt Goldberg | ISO NE | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 7. Bill Phillips | MISO | RFC | 2 | | | | | | | | | | | | | | | | | |
| 8. Charles Yeung | SPP | SPP | 2 | | | | | | | | | | | | | | | | | |

1. Do you agree that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1? If not, please explain in the comment area.

Summary Consideration: The vast majority of responding entities agreed that the proposed FAC-008-2 addresses the first two of the three FERC directives issued in Order 693 relative to FAC-008-1. One entity expressed a concern that R1 did not address directive 1 or 2. The FR SDT modified the standard so that both directives are more fully addressed. The FR SDT modified the standard so that the new Requirement R2, which is for Generator Owners, does address the intent of directive 1 – to identify the underlying assumptions used to determine equipment ratings. The FR SDT does not believe that there is a significant reliability-related benefit to having the Generator Owner develop both normal and emergency ratings for its generator facilities and will solicit feedback on this issue when it posts the revised standard for comment.

The revised standard does fully address directive 2 for both Generator Owners and Transmission Owners. The two new requirements for Generator Owners, Requirements R1 and R2 both include language linking the Facility Rating Methodology to “industry standards” or to “industry standards developed through an open process.” The SDT believes these modifications support the intent of the associated directive.

The process for determining both normal and emergency ratings needs to be addressed for transmission facilities (Requirement R3, Part 4.2), but not for generating unit facilities as they do not have emergency ratings.

One entity stated that the SAR should have included VRFs and VSLs. The new draft standard contains both VRFs and VSLs.

| Organization | Yes or No | Question 1 Comment |
|--|-----------|--|
| Hydro One Networks Inc. | No | We believe that VRFs and VSLs are an integral part of a Standard and should be developed, commented and balloted with it. The SAR should have included these. |
| <p>Response: The FR SDT thanks you for your comment. The draft standard that was posted for comment contained the VRFs and VSLs that were developed and posted for comment during the original attempt to combine FAC-008 and FAC-009. Since stakeholders have indicated that they want additional modifications to the requirements assigned to the Generator Owner, the SDT is going to solicit comments on associated changes to these compliance elements during the next comment period.</p> | | |
| OPG | No | <p>REQUIREMENT R1 DOES NOT ADDRESS THE DIRECTIVES. Directive 1: (document underlying assumptions and methods used to determine normal and emergency facility ratings) - There is no requirement to document underlying assumptions- There is no mention of normal and emergency ratings Directive 2: (develop facility ratings consistent with industry standards developed through an open, transparent and validated</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 1 Comment |
|---|-----------|---|
| | | <p>process)- Only one sub-requirement refers to industry standards. Even that one does not specifically call for consistency with "industry standards developed through an open, transparent and validated process". R1 calls for methodology that must identify how all 5 sub-requirements were "considered". This is ambiguous to start with since the sub-requirements are essentially mutually exclusive. There seems to be no correlation between R1 and directive (2)</p> |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT modified the standard so that the new Requirement R2, which is for Generator Owners, does address the intent of directive 1 – to identify the underlying assumptions used to determine equipment ratings. The FR SDT does not believe that there is a significant reliability-related benefit to having the Generator Owner develop both normal and emergency ratings for its generator facilities and will solicit feedback on this issue when it posts the revised standard for comment.</p> <p>The revised standard does fully address directive 2 for both Generator Owners and Transmission Owners. The two new requirements for Generator Owners, Requirements R1 and R2 both include language linking the Facility Rating Methodology to "industry standards" or to "industry standards developed through an open process." The SDT believes these modifications support the intent of the associated directive.</p> <p>The process for determining both normal and emergency ratings needs to be addressed for transmission facilities (Requirement R3, Part 4.2), but not for generating unit facilities as they do not have emergency ratings.</p> <p>The Generator Owner requirements for this draft Standard has been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Kansas City Power & Light | Yes | We agree with the Drafting Team regarding the deletion of the previously proposed requirement R7. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| SERC Engineering Committee Planning Standards Subcommittee | Yes | |
| APS - Technical Projects Engineering | Yes | |
| Southern Company | Yes | |
| Dominion Resources Inc. | Yes | |

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| Organization | Yes or No | Question 1 Comment |
|--|-----------|--------------------|
| FirstEnergy | Yes | |
| Electric Power Supply Association | Yes | |
| Allegheny Energy Supply Company, LLC | Yes | |
| Bonneville Power Administration | Yes | |
| NPCC RSC | Yes | |
| MRO NERC Standards Review Subcommittee | Yes | |
| Dynegy | Yes | |
| Duke Energy | Yes | |
| Cowlitz County PUD | Yes | |
| City of Tallahassee (TAL) | Yes | |
| PJM | Yes | |
| Manitoba Hydro | Yes | |
| ERCOT ISO | Yes | |
| American Electric Power | Yes | |
| Ameren | Yes | |
| Puget Sound Energy | Yes | |
| Wisconsin Electric Power Company dba We Energies | Yes | |

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| Organization | Yes or No | Question 1 Comment |
|---|------------------|---------------------------|
| Northeast Utilities | Yes | |
| Pepco Holdings, Inc. | Yes | |
| Entergy Services, Inc | Yes | |
| Independent Electricity System Operator | Yes | |
| Hydro-Québec Transenergie (HQT) | Yes | |
| American Transmission Company | Yes | |
| IRC Standards Review Committee | Yes | |

2. Do you agree with the scope of the SAR? If not, please explain in the comment area.

Summary Consideration: The vast majority of responding entities agreed with the scope of the SAR. Several entities did agree with the removal of R7, but expressed concern with the limited scope of the SAR. The FR SDT explained that proposed changes to FAC-008 and FAC-009 (FAC-008-02) have been through stakeholder review and consensus was reached on all requirements except R7, which this SAR proposes to remove. Additionally, several entities expressed concerns that R1 was overly broad or that FAC-008-2 is applicable to generating facilities at all. The FRS DT modified R1 (now R1 and R2) to provide greater clarity to the Generator Owner responsibility. In response to these comments, the SDT modified the scope of the SAR to include modifications to the requirements assigned to the Generator Owner and will post a set of revised Generator Owner requirements for additional stakeholder comment.

| Organization | Yes or No | Question 2 Comment |
|--------------------------------------|-----------|---|
| APS - Technical Projects Engineering | No | <p>1.) The scope of Requirement R1 is overly broad and vague. A statement similar to R2.4.1 that narrows the scope down to specific pieces of equipment is needed for the generator data. Requirement R1 Specifies that the generator owner shall document the methodology determining the Facility Ratings of its generating unit facilities. However, it does not cite what specific generating unit facilities it is talking about (the generator? The exciter? The governor? The various fans, pumps, motors and auxiliaries that are all part of generating unit facilities?) Also, it is unclear exactly what ratings are being addressed (voltage, current, MW, MVAR, temperature, vibration)? There are so many breakers, transformers, motors, switches, etc in a generating facility that it would be impossible to document every single rating and how that rating was developed unless the scope of the ratings referred to in R1 is very focused.</p> <p>2.) R1.1 indicates that the facility rating methodology should specify how it uses commissioning data in its methodology. Again, this is too vague unless specific identification of what equipment and what commissioning data is being addressed is included. There are so many systems that get commissioned in the generating plant that a vague requirement is impossible to comply with.</p> <p>3.)It is not clear in the wording of FAC-008-2 exactly what type of rating is to be documented. Different entities use different ratings and those ratings don't necessarily agree because they are used for different purposes. Comments from our generation management discuss a generator rating reported on FERC Form 1 which is not necessarily the generator owner's nameplate rating on the generator. Unless the exact type of rating for the generator is defined by the Standard (FAC-008-2), the generator owners are left to choose what ever type of rating to use and the results are not consistent. One rating might be used to ensure that you never exceed equipment capability, while</p> |

Consideration of Comments on Proposed SAR of FAC-008-2 — Project 2009-06

| Organization | Yes or No | Question 2 Comment |
|--|-----------|---|
| | | <p>another rating might be used by someone else to define what the generator is normally capable of producing and those two ratings may be very different.</p> <p>4.) Rule R1.2 includes performance history in the rating methodology but it can be shown that full load tests in the winter and/or summer corrected to standard conditions will give different results and will be different from the FERC Form 1 reported rating for the generator. This goes back to point #3 above that the generator portion is too vague.</p> <p>5.) Inclusion of rules R1.3, R1.4, and R1.5 can also lead to different ratings depending on what the specific rating that is being desired. Is the intended rating actual demonstrated generator capability, theoretical generator capability, a rating that shouldn't be exceeded, exactly what?</p> |
| <p>Response: The FR SDT thanks you for your comment. The NERC Glossary defines Facility Rating as follows: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." The Generator Owner is expected to establish the generator facility ratings consistent with this definition. The primary goal is to establish a methodology that identifies any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). Obvious examples are generator bus conductors, breakers, and step-up transformers that limit a generating unit's thermal output (MVA or MW+jMVAR) to a value less than the prime mover's MW rating and/or the electrical generator's MVA rating which can be identified by either historical performance tracking or documentation review. It is expected that during the process of developing their Facility Ratings methodologies, Generator Owners will work with their respective Transmission Owners and others as necessary to define and establish the specific types of ratings that need to be addressed. However, The Generation Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generation Owner responsibilities.</p> | | |
| Public Service Enterprise Group | No | The SAR should specify deleting generators from this standard. Please see comments to Question 3, below. |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 3.</p> | | |
| Electric Power Supply Association | No | We have questions regarding the applicability of the standard for generators. Please see response to question 3. |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 3.</p> | | |
| NPCC RSC | No | NPCC understands that this comment period is aimed specifically at the removal of requirement R7 from the failed ballot and we agree with this modification; however we have additional comments regarding the scope of this standard which are included as comments in response to Question 4. |

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| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 4. There were several commenters, however, who indicated that the Generator Owner requirements need further clarity – in response to these comments, the SDT modified the scope of the SAR to include these modifications and will post a set of revised Generator Owner requirements for additional stakeholder comment.</p> | | |
| Dynergy | No | <p>The SDT received several negative comments from Generator Owners related to the provisions of R1.2 and R1.3. Regardless of whether the "radial facilities" that connect the generator to the grid are considered part of the generating facility or "transmission facilities", unit testing verifies that the rating of these "radial facilities" is greater than or equal to the tested capability of the unit and verifies that the tested rating of the generator is the most limiting element of these "radial facilities". The SAR should consider this issue.</p> |
| <p>Response: The FR SDT thanks you for your comment. The standard does not attempt to define a common point of interconnection between "generation facilities" and "transmission facilities". Generator owned transmission facilities are included in R2. Regarding your comments on unit testing, R1.2 and R1.3 (of the previous draft) addressed the need to establish generator Facility Ratings prior to a generator being placed in service ("Facility Ratings" for a generator are required for BES planning). For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. Also, unit testing alone may not verify the actual Generating Facility's overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) unless it is "supplemented by engineering analysis" as specified in R1. This engineering analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters and may identify the real limit (ex: generator voltage limit) that may not occur during a test, due to other system conditions or constraints. However, The Generator Owner requirements for this draft Standard have been revised (now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| PJM | No | <p>A full reconsideration of all aspects of the standard should be encouraged. We agree with the reproposal of the Standard with R7 removed because R7 has no reliability benefit.</p> |
| <p>Response: The FR SDT thanks you for your comments. 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. There were several commenters, however, who indicated that the Generator Owner requirements need further clarity – in response to these comments, the SDT modified the scope of the SAR to include these modifications and will post a set of revised Generator Owner requirements for additional stakeholder comment.</p> | | |
| Hydro One Networks | No | <p>Please see response to question 1.</p> |

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| Organization | Yes or No | Question 2 Comment |
|---|-----------|---|
| Inc. | | |
| <p>Response: The FR SDT thanks you for your comment. Please see response to question 1.</p> | | |
| American Electric Power | No | <p>The limited scope of the SAR does not take advantage of the opportunity for continuous improvement. There are areas in the standard where additional clarity is necessary and the standard could also be more explicit as to applicability of requirements.</p> |
| <p>Response: The FR SDT thanks you for your comment. 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. There were several commenters, however, who indicated that the Generator Owner requirements need further clarity – in response to these comments, the SDT modified the scope of the SAR to include these modifications and will post a set of revised Generator Owner requirements for additional stakeholder comment.</p> | | |
| Xcel Energy | No | <p>Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners). See details in our response to question 3.</p> |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to comments in Question 3.</p> | | |
| OPG | No | <p>The proposed SAR and the standard eliminate only one of the contentious requirements identified during previous stakeholders? Reviews and do not take into account a number of other issues. One of the most contested, second only to R7, has been applicability of FAC008-02 to GOs. Further comments on this are provided in the question on applicability. Other issues include: - The requirements R1, R2 are burdened with a comprehensive set of sub-requirements that tend to be confusing, mutually exclusive or superfluous. The distinction between facility and equipment ratings is blurred. It is not clear whether it is necessary to document methodologies for each major element of a generating facility (boiler, turbine, generator, auxiliaries). There is also ambiguity about the scope; R1 talks about generating unit Facilities, R2 about other solely and jointly owned Facilities? Main output transformers and other HV connection equipment of a generating station may be subject to R1 or R2, depending on the equipment location, etc. - The requirements R3, R4 relate to peer review of Facility Ratings Methodologies (not the actual facility ratings?). The need for these requirements has been questioned by the RCs, PCs, TOPs, and TPs (represented through ISO/RTO Council). These entities, although given the right to review GOs and TOs facility ratings methodology, recognize futility of such an exercise. During previous comment periods, the Council acknowledged</p> |

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| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| | | that facility ratings methodology and the ratings were up to GOs and TOs discretion and cannot be challenged by other entities. They pointed out that any disagreements with respect to the ratings should be addressed outside the NERCs reliability standards process. |
| <p>Response: The FR SDT thanks you for your comment. Please see the FR SDT responses to Question 3 comments on applicability to Generator Owners.</p> <p>The subrequirements in R1 (previous draft) were applicable to generating unit facilities and were intended to address equipment up to and including the generator step-up (GSU) transformer. The subrequirements in R2 (previous draft) were applicable to transmission facilities and were intended to address equipment from the generator step-up (GSU) transformer to the transmission system and beyond. The GSU transformer could be addressed within R1 or R2 based upon who owns the equipment. Radial transmission facilities from the GSU transformer to the transmission system can be owned by the GO, the TO or both. The R2 subrequirements (previous draft) were applicable in this case, because this is transmission equipment.</p> <p>Please refer to the NERC Glossary for the definitions and distinctions between Facility Ratings and Equipment Ratings. The use of these terms in this standard is consistent with these definitions.</p> <p>R3 and R4 (R4 and R5 in the current draft) provide a means for other entities to question or challenge one's Facility Ratings Methodology. However, the Facility owner has the responsibility and obligation to determine the actual ratings and margins to ensure its facilities and equipment are not damaged. Since this can involve legal and liability issues, disagreements about the ratings themselves may have to be resolved outside the NERCs reliability standards process as you stated.</p> <p>However, The Generator Owner requirements for this draft Standard have been revised (now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| FirstEnergy | Yes | |
| SERC Engineering Committee Planning Standards Subcommittee | Yes | |
| PacifiCorp | Yes | |
| Southern Company | Yes | |
| Dominion Resources Inc. | Yes | |

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| Organization | Yes or No | Question 2 Comment |
|--|-----------|--------------------|
| Allegheny Energy Supply Company, LLC | Yes | |
| Bonneville Power Administration | Yes | |
| MRO NERC Standards Review Subcommittee | Yes | |
| Kansas City Power & Light | Yes | |
| Duke Energy | Yes | |
| Cowlitz County PUD | Yes | |
| City of Tallahassee (TAL) | Yes | |
| Manitoba Hydro | Yes | |
| ERCOT ISO | Yes | |
| Ameren | Yes | |
| Puget Sound Energy | Yes | |
| Wisconsin Electric Power Company dba We Energies | Yes | |
| Northeast Utilities | Yes | |
| Pepeco Holdings, Inc. | Yes | |

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| Organization | Yes or No | Question 2 Comment |
|---|-----------|--------------------|
| Entergy Services, Inc | Yes | |
| Independent Electricity System Operator | Yes | |
| Hydro-Québec Transenergie (HQT) | Yes | |
| American Transmission Company | Yes | |
| IRC Standards Review Committee | Yes | |

3. Do you agree with the applicability of the SAR? If not, please explain in the comment area.

Summary Consideration: The majority of the comments support the application of the SAR. Out of the 37 responses received (from 94 individual commenters), 27 responses (from 79 commenters) support the SAR, and 10 responses (from 15 commenters) oppose with the SAR.

All the responses that oppose the SAR suggested removing the applicability of FAC-008 to Generator Owners. The reasons cited are:

- The SAR is redundant with FAC-001, FAC-001, FAC-002, IRO-004, MOD-010, MOD-011, MOD-024, MOD-025 and/or TOP-002.
- FAC-008-2 should not apply to Generator owners
- The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value.
- Actual operating performance today has no correlation with the commissioning data for a unit that has been in service for a long time.
- Ratings provided by equipment manufacturers are not appropriate for use in the operation of the bulk electric system.
- It is inappropriate to Transfer a rating methodology used for predominately static networked components of a transmission system and apply the same basic methodology to generating facilities.
- In most cases, the rating from FAC-008-2 may be different from the ones from MOD-024 and MOD-025. Having two rating numbers can lead to confusion and would be detrimental to grid reliability.

The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning.

For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows "performance history or rating verification supplemented by engineering analysis". MOD-024 and MOD 025 validation processes (note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters. FAC 008 "only"

requires this Methodology be documented and followed. Therefore the FR SDT does not feel that FAC 008 is redundant with MOD-024 and/or MOD-025.

Several commenters also expressed concerns that FAC-008 is duplicative with FAC-001, FAC-002, IRO-004, MOD-010, MOD-011 or TOP-002 as the commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. IRO-004-1 requires conducting next-day reliability and requires Generator Owners, among others, to provide information (such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for the analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.

Likewise, FAC-008 is not redundant with FAC-001, FAC-002, IRO-004, MOD-010, MOD-011 or TOP-002 as one commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. IRO-004-1 requires conducting next-day reliability analyses and requires Generator Owners, among others, to provide information (such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.

The SDT agrees that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating facility. However, the SDT believes that a Facility Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Facility Ratings Methodology).

The proposed FAC-008-2 offers a variety of ways to comply. For example, R1 allows the use of:

Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice having a successful implementation record.

Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.

The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, the SDT disagrees with the commenters that this situation creates “having two numbers can lead to confusion....” An appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of Transmission Facilities typically include: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, and the SDT is NOT aware of any occurrences where having two ratings numbers for Transmission Facilities resulted in confusion or became detrimental to reliability.

| Organization | Yes or No | Question 3 Comment |
|--------------|-----------|---|
| PacifiCorp | No | <p>NERC Standards MOD-024 and MOD-025 require verification of the real and reactive output capabilities of generating units. This verification is a determination of the Facility Rating. FAC-008-2 R1 requires the Generator Owner to have a methodology to determine the Facility Rating of its generating units and R5 require the Generator Owner to perform the determination. Xcel Energy considers this a duplication of the requirements contained in MOD-024 and MOD-025.</p> <p>Another concern is the acceptability of the use of manufacturers’ Ratings and calculations in determining a Facility Rating. This would lead to a Rating that would, in most cases, be different than the Rating determined by MOD-024 and MOD-025 verification testing. Having two rating numbers can lead to confusion and would be detrimental to grid reliability. To point, one of the root causes of the widespread 1996 blackout in the WECC region was the use of manufacturers - ratings for generator reactive power to determine stability limits. This led to the development of NERC standards that have evolved into the current MOD-025. The FAC Standards Drafting Team previously justified the inclusion of Generator Owners as follows: Capability verification testing under a specific set of conditions is not the same as a Facility Rating - realizing that a generator’s capability is a family of data.</p> <p>The approved definition for Facility Rating is: ?The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility.? At best, a single verification by itself following what is required in MOD-024-1 and MOD-025-1 would be a subset of what is required in complying with FAC-008-2. FAC-008-2 covers associated transmission facilities owned by (or considered part of) the generator, as well as the peer review concepts and the requirement to provide the ratings to interested parties. Xcel Energy disagrees with this viewpoint.</p> |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| | | <p>The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value. Even the rating of planned facilities is normally based on the expected limits from the equipment behind the generator. In summary, Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners).</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, the SDT disagrees with the commenter that this situation creates “having two numbers can lead to confusion....” An appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of transmission Facilities typically include: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, and the SDT is NOT aware of any occurrences where having two ratings for Transmission Facilities resulted in confusion or became detrimental to reliability.</p> <p>The SDT does not disagree with the commenter’s assertion that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating facility. However, the SDT believes that a Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Ratings Methodology).</p> | | |

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| Organization | Yes or No | Question 3 Comment |
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| <p>Also, the SDT recognizes that the limitation on a Generating Facility’s overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) can be due to factors other than the electrical generator thermal ratings. Examples are auxiliary bus voltages, exciter limiter settings, and GSU transformer MVA ratings. While these types of limitations would be addressed in the MOD-025 validation processes, equipment design ratings (ex: voltage, ampere, and MVA) can be useful in identifying obvious limitations prior to performance of the validations under MOD-025. For example, replacement of a GSU transformer with a spare GSU transformer of a smaller MVA rating can and should be reviewed to prior to installation to determine if the thermal capability of the Generating Facility could be limited by the smaller GSU. If so, the Generator should coordinate with the Transmission Planner and Reliability Coordinator to assess the impacts of limitations on real and reactive power capabilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| <p>APS - Technical Projects Engineering</p> | <p>No</p> | <p>1) With regard to R1.1? The value of using commissioning data for older units is not understood. Actual operating performance today has no correlation with the commissioning data for a unit that is 20? 50 years old. Commissioning data is primarily used to prove OEM guarantee of rated output at certain contract conditions and test results do not necessarily correspond to the generator owner’s rating.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent was to provide use of commissioning data for situations where, for a new facility, the commissioning data may be the best source of data for use in developing a rating. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generation Owner responsibilities.</p> | | |
| <p>Reliant Energy Inc and Gila River Power</p> | <p>No</p> | <p>We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, ?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.? The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from “ratings provided by equipment manufacturers” is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility.</p> |

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| | | <p>However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004.</p> <p>A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is re-mediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards.</p> <p>FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient temperature and humidity. This data is certainly available but it is a sheet or two from a vendor manual and not a facility rating methodology. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment but the requirements are misapplied and a threat to reliability when imposed and used to calculate a generator rating. That the Standard was intended for transmission equipment rather than generators is in part illustrated by Requirement 2.4.2 The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings. Generating stations may have the ability to increase their output for a limited period of time but the Generators themselves do not have emergency ratings that should be used for modeling purposes by system planners. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. As radial components, no one is seriously questioning the ability of the elements of the generating stations to deliver power to the BES. However, generating owners are expending significant time, effort, and resources to acquire and develop documentation to meet the requirements of Facility Ratings for stations that have multiple decades of successful operation. Try to think of one disturbance or blackout that was traced to the facility rating documentation of a generating facility as the culprit. Yet the standard applies the same violation risk factors and penalties to the radial components of a small generating facility as it does to the networked components of the transmission grid. To date, the FAC-008-1 Standard is one in which</p> |

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| | | <p>generator owners are most vulnerable for non-compliance, in spite of the considerable efforts of the generator-owning industry to make sense of a set of requirements which make little sense, and which no operating entity is actually requesting of them. The individuals showing the most interest in Facility Rating documentation are the auditors or the RROs. The reason the standard it is so often violated is not because the industry is inattentive, but it is for documentation errors of successfully operating generating facilities that in reality are imposing no threat to the reliability of the Bulk Electric System.</p> <p>Not only are the standard requirements flawed in their application to generator owners, but the documentation burden of proof, as it is being imposed, is unwarranted. Generator Owner applicability should be stripped from FAC-008-2 and any further reliability needs pursuant to generator performance and capability should be referred to the Generator Verification Project 2007-09. (Note on another point: Does anyone comprehend where the dividing line between R1 and R2 start and stop for generator owners and do the requirements of R.2 cover all of the same elements covered by R.1. This is very confusing and ambiguous.)</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with IRO-004, MOD-010, or TOP-002, Requirement 3 as the commenter asserts. IRO-004-1 requires conducting next-day reliability analyses and requires Generator Owners, among others, to provide information (such as critical Facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for the analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. TOP-002, Requirement 3 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider. None of these Standards cited requires that the Methodology for determining Facility Ratings be documented and followed.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’</p> | | |

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| | | <p>parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, an appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of transmission Facilities typically includes: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, therefore the SDT disagree with the commenter’s assertion that Transmission Facility Ratings are static. In addition, proposed FAC-008-2 does not require “transferring” the rating methodology between Transmission Facilities and generation Facilities as claimed by the commenter.</p> <p>The SDT does not disagree with the commenter’s assertion that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating Facility. However, the SDT believes that a Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Ratings Methodology).</p> <p>Also, the SDT recognizes that the limitation on a Generating Facility’s overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) can be due to factors other than the electrical generator thermal ratings. Examples are auxiliary bus voltages, exciter limiter settings, and GSU transformer MVA ratings. While these types of limitations would be addressed in the MOD-025 validation processes, equipment design ratings (ex: voltage, ampere, and MVA) can be useful in identifying obvious limitations prior to performance of the validations under MOD-025. For example, replacement of a GSU transformer with a spare GSU transformer of a smaller MVA rating can and should be reviewed prior to installation to determine if the thermal capability of the Generating Facility could be limited by the smaller GSU. If so, the Generator should coordinate with the Transmission Planner and Reliability Coordinator to assess the impacts of limitations on real and reactive power capabilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| Public Service Enterprise Group | No | <p>The SAR (and Standard) should not apply to Generator Owners. Facility rating methodologies and listings of limiting components do not make sense for generators from an ensuring reliability standpoint. The capability of a generator determined through testing and/or generation data derived from actual operation is what accurately determines a generator’s rating, and what both markets and system operators depend upon. The Public Service Enterprise Group companies wish to call NERC’s attention to the many cogent and compelling points contained in the comments filed by the Electric Power Supply Association (EPSA) in this matter. EPSA correctly points out that generators should not be subject to FAC-008-2 as it is presently drafted and proposed for change in the SAR. For example, EPSA states that a generator rating derived from manufacturer’s equipment rating is not appropriate for use in the operation of the bulk electric system, and indeed presents a risk to the reliability of the BES as the correct rating of a generator can only be obtained by testing and/or actual operating experience. Even for planning purposes, FAC-008-2 is technically sound only for networked connection of static components of transmission equipment, and not for generators. Finally EPSA’s conclusion that use of a calculated facility rating for a generator, where real facility</p> |

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| | | <p>capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes is absolutely spot on.</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator and transmission equipment. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, an appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of transmission Facilities typically includes: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature).</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Electric Power Supply Association | No | <p>EPSA feels that the reliability objectives of Draft Standard FAC-008-2 are achieved even if Generators Owners or operators are not required to comply with the standard. The purpose of the standard is: 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. System operators through the Energy Management System (EMS) have the needed information for operational purposes to operate the system in a reliable manner. Moreover, for operational purposes numerous other standards require that Generators provide updated capabilities for their units which would reflect ambient temperatures, upgrades or temporary degradations of any elements of the generator circuit, etc. Consequently, system operators and owners have an abundance of information at the ready to maintain reliability. The questions that need to be answered to determine if the applicability and</p> |

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| | | <p>purpose of the standard is being met are: 1. Are the values contemplated by the Standard’s Facilities Rating Methodology needed above and beyond the current EMS system information to materially preserve reliability in the operating time frame; and, 2. Does the documentation of a Facilities Rating Methodology ensure reliability through the planning process and is the process under FAC-008 superior to that contained within existing standards MOD-024-1 and MOD-025-1? If it can be shown that reliability is bolstered in a material way making the answers of the two questions above an unequivocal, yes, and FAC-008-2 is necessary for Generator Owners to comply with, then EPSA suggests an alternative approach for moving forward with this standard. Previously EPSA members have experienced problems when standards have been developed for Transmission Owners or Operators but end up including Generator Owners or Operators. This was recognized at the recent NERC Board of Trustees meeting when the formation of a Task Force was approved to resolve generator and transmission facility interface issues. The formation of the Task Force demonstrates a need to better understand the physical, informational and ownership distinctions that exist at the generation and transmission interface. A standard FAC-008-1 is already identified as a standard that the task force will need to look at. In this Facilities Rating Standard R1.2 is particularly illustrative by calling for, among other things, an identification of the methodology by which an emergency rating for a generator is developed. Particularly for planning purposes (which is part of the purpose of this standard) such a rating would not exist. EPSA asserts that the most appropriate means to go forward with the Facility Ratings is to create separate standards for Generator Owner/Operators and Transmission Owner/Operators. In that way, the language of each standard can be appropriately targeted to deal with the facilities in question. We expect that the Generation and Transmission Interface Task Force can consider this issue and that the Facilities Ratings project should await the recommendations of the task force. If it is not possible for this project team to await the outcome of the Task Force, we would propose that the following should be considered as an alternative. In developing FAC-008-2, the Standard Drafting Team has gone some way to addressing the concerns raised above. In Requirement 1 (R1) which is applicable to generators only, the draft standard calls for Generator Owners to have a Facilities Rating Methodology for its generating unit that meets certain criteria. For R2, both Generator Owners and Transmission Owners are required to have a Facilities Rating Methodology. Under that requirement, R2.4 includes the previously mentioned emergency rating, but then excludes the generator. What is still lacking in the case of a Generator Owner however is an appropriate clarification of the boundary between facilities included in R1 and those remaining to be covered by R2? In our opinion it is not just the generator itself that needs to develop its Facilities Rating Methodology differently, but all of the equipment on the generator side of the switchyard. We would agree that the equipment contained within the switchyard is analogous to equipment that might elsewhere be owned by Transmission Owners and can be treated, for the purposes of this standard, in a manner analogous to the treatment afforded Transmission Owners. Finally, if NERC does continue to include an obligation on generators in FAC-008-2, MOD-024-1 and MOD-025-1 should be reviewed to ensure that overlaps are eliminated.</p> |

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| <p>Response: The FR SDT thanks you for your comment. The existing Standard FAC-008-1, R1 applies to both Generator Owners and Transmission Owners. This SAR proposes to clarify the existing standard by separating the “generation facilities” and “transmission facilities”. The standard does not attempt to define a common point of interconnection between “generation facilities” and “transmission facilities”. Generator owned transmission facilities not included in the “generation facilities” in R1 will be captured under R2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. R1.2 (previous draft) allows for the use of “Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating”.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators that are already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>There is a current NERC Standards development project (Project 2007-09) that includes revisions to MOD-024 and MOD-025. That team will work to eliminate any redundancies between standards.</p> | | |
| <p>Indiana Municipal Power Agency</p> | <p>No</p> | <p>This standard is an exercise in paperwork for Generator Owners and does not increase the reliability of the bulk power system. The standard seems to be intended more for transmission equipment rather than generators, which is evident when asking for Normal and Emergency Ratings of equipment (R2.4.2). Generators do not have emergency ratings that should be used for modeling purposes. The generator capability and verification of capability is covered by other standards (MOD-010, IRO-004, MOD-024, and MOD-025). Any generator temporary limitations will be taken into account for operational purposes by using TOP-002-2; requirement 3. There is no advantage to using a calculated facility rating for planning purposes when a real facility rating is available and certainly mandated by other standards. The main focus of a standard should be to increase the reliability of the bulk power system. The application of this standard to Generator Owners does not increase the reliability of the bulk power system. Therefore, we believe this standard should not apply to Generator Owners.</p> |
| <p>Response: The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft)</p> | | |

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| | | <p>allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC 008 “only” requires this Methodology be documented and followed. Therefore, the SDT does not believe that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with IRO-004, MOD-010 or TOP-002, Requirement 3 as the commenter asserts. IRO-004-1 requires conducting next-day reliability and requires Generator Owners, among others, to provide information (such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions) for the analysis by the Reliability Coordinator. MOD-010 requires the submittal of steady state data to a Regional Entity. TOP-002, Requirement 3 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| Wisconsin Electric Power Company dba We Energies | No | There are no explicit requirements given to allow the Generator Owner to determine which generating facilities are subject to the proposed standard. Does it apply to generators above 20 MVA single and 75 MVA aggregate connected to the BES? |
| <p>Response: The FR SDT thanks you for your comment. The standard applies to registered Generator Owners. Regional Reliability Organization BES definitions may include additional details regarding generator size.</p> | | |
| Xcel Energy | No | <p>NERC Standards MOD-024 and MOD-025 require verification of the real and reactive output capabilities of generating units.* This verification is a determination of the Facility Rating.FAC-008-2 R1 requires the Generator Owner to have a methodology to determine the Facility Rating of its generating units and R5 requires the Generator Owner to perform the determination. Xcel Energy considers this a duplication of the requirements contained in MOD-024 and MOD-025.</p> <p>Another concern is the acceptability of the use of manufacturers? Ratings and calculations in determining a Facility Rating. This would lead to a Rating that would, in most cases, be different than the Rating determined by MOD-024 and MOD-025 verification testing. Having two rating numbers can lead to confusion and would be detrimental to grid reliability. To point, one of the root causes of the widespread 1996 blackout in the WECC region was the use of manufacturers? ratings for generator reactive power to determine stability limits. This led to the development of NERC standards that have evolved into the current MOD-025.The FAC Standards Drafting Team previously justified the inclusion of Generator Owners as follows: Capability verification testing under a specific set of conditions is not the same as a Facility Rating - realizing that a generator’s capability is a family of data. The approved definition for Facility Rating is: ?The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the</p> |

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| | | <p>applicable equipment rating of any equipment comprising the facility.? At best, a single verification by itself following what is required in MOD-024-1 and MOD-025-1 would be a subset of what is required in complying with FAC-008-2.</p> <p>FAC-008-2 covers associated transmission facilities owned by (or considered part of) the generator, as well as the peer review concepts and the requirement to provide the ratings to interested parties. Xcel Energy disagrees with this viewpoint. The equipment behind the prime mover is most often what determines the limits to the real power output of a generating facility. This is not part of the scope of the standard, so presenting a facility rating based strictly on the characteristics of the generator, transformer, buswork, and connection to a substation is of no apparent reliability value. Even the rating of planned facilities is normally based on the expected limits from the equipment behind the generator.</p> <p>In summary, Xcel Energy suggests that the SAR be modified to remove R1 and remove Generator Owners from R5 (except for transmission facilities that are owned by entities registered as Generator Owners but not as Transmission Owners). *Additionally, we recognize that FERC has not approved MOD-024-1 or MOD-025-1. However, we feel strongly that developing duplicative requirements is not the correct solution. Therefore, we would recommend that either MOD-024-1 & MOD-025-1 be repealed, or FAC-008-2 needs to make accommodations for their existence.</p> |
| <p>Response: The FR SDT thanks you for your comment. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2.</p> <p>The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC 008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>The SDT recognizes that generator ratings vary based on ambient conditions as well as various plant equipment conditions. The intent of FAC-008 is to provide nominal ratings for the generator. The SDT recognizes that the projected generator’s real power (MW) ‘capability’ parameters for the near-term horizon (i.e. next day) are assessed and reported to various entities – often the host Transmission Operator and appropriate Reliability Coordinator, among others. However, an appropriate Facility Rating based upon owner’s nominal parameters for all parts of the BES (transmission and generation) is necessary for reliable planning and operation of the BES. (Nominal parameters of</p> | | |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>transmission Facilities typically includes: ambient temperature, wind direction, wind speed, where for a generation Facility typical nominal parameters may include system voltage, ambient temperature, water temperature). The SDT notes that Transmission Facilities also have Facility Ratings that can and do change based upon ambient temperature, therefore the SDT disagree with the commenter’s assertion that transmission facility ratings are static. In addition, proposed FAC-008-2 does not require “transferring” the rating methodology between transmission facilities and generation facilities as claimed by the commenter.</p> <p>The SDT does not disagree with the commenter’s assertion that the equipment behind the prime mover is most often what determines the limits of real power (MW) output of a generating facility. However, the SDT believes that a Rating Methodology would capture output limitations caused by the prime mover (especially if the owner chose to use operating experience data or verification testing as part of the Ratings Methodology).</p> <p>Also, the SDT recognizes that the limitation on a Generating Facility’s overall thermal capability (measured in amps, MVA, and/or MW +jMVAR) can be due to factors other than the electrical generator thermal ratings. Examples are auxiliary bus voltages, exciter limiter settings, and GSU transformer MVA ratings. While these types of limitations would be addressed in the MOD-025 validation processes, equipment design ratings (ex: voltage, ampere, and MVA) can be useful in identifying obvious limitations prior to performance of the validations under MOD-025. For example, replacement of a GSU transformer with a spare GSU transformer of a smaller MVA rating can and should be reviewed to prior to installation to determine if the thermal capability of the Generating Facility could be limited by the smaller GSU. If so, the Generator should coordinate with the Transmission Planner and Reliability Coordinator to assess the impacts of limitations on real and reactive power capabilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| FPL Energy | No | <p>It is the opinion of FPL Energy (a.k.a. NextEra Energy Resources) that the proposed standard should not be applicable to the Generator Owner (GO). We base this opinion on the fact that there are other standards currently in place (i.e. MOD-010/011, MOD-024/025, etc?) that require the same, and in some cases more detailed information, regarding Facility Ratings and Capabilities as is being proposed in FAC-008-2. This duplication of information seems to be an unnecessary burden placed on the Generator Owners. In addition, FERC Order 693 in the discussion on FAC-008-02 identifies that the standard creates ambiguity in terms of acceptable forms of compliance for Generators. Therefore, we respectfully request that the SAR team remove the Generator Owner applicability requirements from FAC-008-2 at this time.</p> |
| <p>Response: The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented</p> | | |

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| Organization | Yes or No | Question 3 Comment |
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| | | <p>by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore FAC-008 need not be redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with MOD-010 or MOD-011 as the commenter asserts. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. Neither one of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>FERC Order 693, Paragraph 765, states that “an actual test could be used as a substitute for a mathematical calculation of capability, and we ask the ERO to consider these comments in its Reliability Standards development process”. As stated above, MOD-024 and MOD-025 validation processes could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. In addition, in Paragraph 739, FERC “directs the ERO to submit a modification to FAC-008-1 that requires transmission and generation facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings”. This also supports the applicability of FAC-008-2 to both Generation and Transmission Facilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> |
| OPG | No | <p>THERE IS NO RELIABILITY NEED FOR FAC 008-02 TO BE APPLICABLE TO GENERATOR OWNERS: * VARIOUS STANDARDS ALREADY ADDRESS CRITICAL ASPECTS OF GENERATION FACILITY RATINGS AND ARE SUFFICIENT FOR RELIABLE PLANNING AND OPERATION OF THE BESFAC 001? Facility Connection Requirements FAC 002? Coordination of Plans for New Facilities MOD 011? Steady-state Data Requirements and Reporting Procedures MOD 024? Verification of Generator Gross and Net Real Power Capability MOD 025 - Verification of Generator Gross and Net Reactive Power Capability TOP 002? Normal Operations Planning These standards address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short-term deratings, verification of generator capabilities. FAC 008-02 should not duplicate the above mentioned or any other applicable standards. Multiple standards should not exist in parallel to accomplish what would ultimately be the same end result. * ENSURING THE QUALITY OF FACILITY RATINGS INFORMATION THROUGH VERIFICATION IS SUPERIOR TO DOCUMENTING THE FACILITY RATING METHODOLOGY AS REQUIRED BY FAC 008-02The verification of the key generator ratings (MW, MX) as required by Standards MOD-024 & MOD-025 is by far more efficient and relevant to BES reliability than documenting the generating facility ratings methodology. As several entities noted during previous comment periods, documenting the methodology as per FAC-008-02, would be just an administrative nuisance with little substance. Worth noting is that FERC order 693 (March 2007) acknowledges the relevance of MOD-024, 025 and directs the ERO (i.e. FR SDT) to consider them during the standard’s development process.* FAC 008-02 WOULD NOT ADD VALUE TO THE CURRENT PRACTICES FOR DETERMINING GENERATOR FACILITY RATINGS Requiring generator owners to comply with the</p> |

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| | | <p>proposed FAC-008-02 will just expose the generators and auditors to additional compliance burden without any reliability benefit. The design of generating facilities and determination of Facility Ratings is a complex, yet mature, process involving coordinated effort of GOs, Equipment suppliers (vendors), Engineering and Consulting firms. It is in GOs ultimate interest to design their facilities such that applicable equipment warranties and life expectancy are not jeopardized. At the same time, the GOs have intrinsic goal to optimize utilization of their facilities within the given regulatory framework. All this influences the determination of Generating Facility Ratings. In practical terms, there is no point requesting the GOs to document these established processes and engineering practices, including the details, as required by FAC-008-02.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD 025 validation processes (please note that neither MOD 024 nor MOD 025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC 008 “only” requires this Methodology be documented and followed. Therefore the FR SDT does not feel that FAC 008 is redundant with MOD 024 and/or MOD 025.</p> <p>Likewise, FAC-008 is not redundant with MOD-010 or MOD-011 as the commenter asserts. MOD-010 requires the submittal of steady state data to a Regional Entity. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. Neither one of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>FERC Order 693, Paragraph 765, states that “an actual test could be used as a substitute for a mathematical calculation of capability, and we ask the ERO to consider these comments in its Reliability Standards development process”. As stated above, MOD-024 and MOD 025 validation processes could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. In addition, in Paragraph 739, FERC “directs the ERO to submit a modification to FAC-008-1 that requires transmission and generation facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings”. This also supports the applicability of FAC-008-2 to both Generation and Transmission Facilities.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| SERC Engineering Committee Planning Standards | Yes | |

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| Organization | Yes or No | Question 3 Comment |
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| Subcommittee | | |
| Southern Company | Yes | |
| Dominion Resources Inc. | Yes | |
| FirstEnergy | Yes | |
| Allegheny Energy Supply Company, LLC | Yes | |
| Bonneville Power Administration | Yes | |
| NPCC RSC | Yes | |
| MRO NERC Standards Review Subcommittee | Yes | |
| Kansas City Power & Light | Yes | |
| Dynergy | Yes | |
| Duke Energy | Yes | |
| Cowlitz County PUD | Yes | |
| City of Tallahassee (TAL) | Yes | |
| PJM | Yes | |

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| Organization | Yes or No | Question 3 Comment |
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| Hydro One Networks Inc. | Yes | |
| Manitoba Hydro | Yes | |
| ERCOT ISO | Yes | |
| American Electric Power | Yes | |
| Ameren | Yes | |
| Puget Sound Energy | Yes | |
| Northeast Utilities | Yes | |
| Pepco Holdings, Inc. | Yes | |
| Entergy Services, Inc | Yes | |
| Independent Electricity System Operator | Yes | |
| Hydro-Québec Transenergie (HQT) | Yes | |
| American Transmission Company | Yes | |
| IRC Standards Review Committee | Yes | |

4. If you have any other comments on this standard or its implementation plan that you have not already submitted above, please provide them here.

Summary Consideration: Several commenters stated their belief that the standard FAC-008 should not apply to Generator Owners and that they are duplicative with MOD-024 and MOD-025. The SDT feels strongly that the standard applies to Generator Owners and has revised the Generator Owner requirements for this draft Standard (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities and options for developing facility rating documentation. The SDT does not believe that FAC-008 is duplicative with MOD-024 and MOD-025 because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

Three commenters disagreed that a technical review of the rating calculation methodologies and obligation to respond to comments should be required as stated in R3 and R4 (previous draft). The SDT notes that standard FAC-008-2 does not, nor was it the intent, to require the asset owner to change its ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions. R4 (previous draft) recognizes that the Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision.

Two commenters suggested revising the VRF from “Medium” to “Lower”. The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. Other commenters questioned the Violation Severity Levels, indicating that they should not be severe. Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such, VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement.

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| PacifiCorp | | ISSUE #1: Clarification on the proposed FAC-008-2 standard for transmission and substation equipment should be provided. The definition of an Equipment Rating in NERC's glossary of terms is: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as |

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| Organization | No Comments | Question 4 Comment |
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| | | <p>permitted or assigned by the equipment owner." FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'. We'd like clarification that the standard applies only to the ampacity portion of the Equipment Rating and not the full definition as noted above. The standard seems to be setup that way, but there are some questions related to the full definition of Equipment Rating and how it applies to the standard. Our facilities have always been constructed to conform to applicable IEEE and ANSI standards at the time of installation. If this doesn't cover the intent of the standard, would you please provide an example of ratings to be included for voltage, frequency, and transient conditions for a facility? An example would assist us in determining what is required to be reported, especially about the requirement of transient condition and duration. An example of what we've done to comply with FAC-009 is also attached for your review/comments. (It doesn't include the spreadsheets that combine T-Lines and Sub ratings.) In addition, the short circuit information is kept by all utilities in a separate databases and run periodically to address breakers short circuit ratings. Is it the intent of this standard to add these reports to this Facility Ratings data? ISSUE #2: The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction - and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The original drafting team for FAC-008 considered this issue when drafting the current standard. In response to a request to add the requirement that the methodology be . . . "consistent with and based on credible and recognized standards/criteria . . . ", the drafting team responded: "The Drafting Team did not adopt the change because there are many Facilities in place with ratings that were established many years ago and it would be very costly to go back and re-establish ratings based on a set of industry standards." The current proposal requires that the methodology indentify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs (which could run into the 100's of millions, and potentially billions, of dollars industry-wide) would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost</p> |

| Organization | No Comments | Question 4 Comment |
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| | | <p>data.</p> <p>Example-Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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. R2.1.4. In the case of Equipment placed in service prior to the effective date of this requirement, readily available records or data or operational experience. 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, if readily available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). If the intent of this requirement is to force entities to collect this information, then an extended implementation plan should be developed that will allow industry participants sufficient time to gather the required data before the revisions take effect.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>Issue #1: “Facility”, “Facility Rating”, “Element”, “Rating” and “Equipment Rating” are all NERC defined terms. A Facility is a set of electrical equipment that operates as a single BES Element. To determine a “Facility Rating” the Ratings of the individual equipment comprising that Facility must be considered and the most limiting applicable Equipment Rating governs the rating of the Facility (R2.3 of previous draft). R 3.4.2 requires that “as a minimum, both Normal and Emergency Ratings” shall be addressed. “Normal Rating” and “Emergency Rating” are NERC defined terms. Both of these definitions include the words “usually expressed in megawatts, or other appropriate units”.</p> <p>Issue #2: This Standard does not require the recreation of data that is no longer available or no longer accessible for any reason. R3.1 allows for multiple methods for determining facility ratings which include the items that you propose above. However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| <p>APS - Technical Projects Engineering</p> | | <p>With regard to R1.2 - Performance history will most likely give different values from engineering analysis or rating verification. Unless the specific desired rating is defined, many different interpretations of the rating can be made (FERC Form 1, net demonstrated seasonal</p> |

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| | | capability, maximum unit capability, etc). |
| <p>Response: The FR SDT thanks you for your comment. We agree with your comment regarding performance history and engineering analysis or rating verification. Ratings specified need to be based upon assumed ambient conditions.</p> | | |
| FirstEnergy | | <p>FirstEnergy appreciates the efforts of the drafting team in developing this SAR as a result of industry objections to Requirement R7. We recognize that this requirement was included at the direction of FERC Order 693, but believe that this requirement did not add a reliability benefit. Without this requirement in the standard, the reliability goal as stated in the purpose statement, "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.", is still maintained. When explaining the technical substantiation to FERC that this requirement does not add a reliability benefit and is outside the scope of the reliability standards arena, the SDT may offer that determination of the next most limiting equipment rating would be more efficiently and appropriately addressed in the transmission tariff and RTO market processes. The opinion of the drafting team and stakeholders is vitally important in the standards development process, and we applaud NERC staff and the Standards Committee for respecting these opinions and moving forward with this SAR.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| Allegheny Energy Supply Company, LLC | | <p>We believe that "Generator Owner" should be removed from the applicability of this reliability standard. Including generation facilities in this standard does not increase the reliability of the bulk electric system. Requiring generator owners to comply with FAC-008-02 will only expose the generators to additional compliance burden without any reliability benefit. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment. However, a calculated facility rating for generators should never be used for operational or planning purposes, as the real capability and not the calculated capability should be considered. The following standards mandate the reporting of generator capability: FAC 001? Facility Connection Requirements FAC 002? Coordination of Plans for New Facilities MOD 011? Steady-state Data Requirements and Reporting Procedures MOD 024? Verification of Generator Gross and Net Real Power Capability MOD 025 - Verification of Generator Gross and Net Reactive Power Capability TOP 002? Normal Operations Planning The verification of the key generator ratings (real and reactive) as required by Standards MOD-024 & MOD-025 is by far more relevant to BES reliability than documenting the generating facility ratings methodology. FAC 008-02 should not duplicate the above mentioned or any other applicable standards. Multiple standards should not exist in parallel to</p> |

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| Organization | No Comments | Question 4 Comment |
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| | | accomplish what would ultimately be the same end result. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with FAC-001, FAC-002, MOD-011 or TOP-002 as the commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Bonneville Power Administration | | BPA is in support of the SAR/standard as written. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| NPCC RSC | | <p>Various existing standards already address critical aspects of Generation Facility ratings and are sufficient for the reliable planning and operation requirements of the BES. Included among these are: FAC001-Facility Connection RequirementsFAC002-Coordination of Plans for New FacilitiesMOD011-Steady-state Data Requirements and Reporting ProceduresMOD024-Verification of Generator Gross and Net Real Power CapabilityMOD025-Verification of Generator Gross and Net Reactive Power CapabilityTOP002-Normal Operations Planning These existing standards currently address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short term de-ratings, and verification of generator facility capabilities. Standards should not exist in parallel and FAC-008-02 should not duplicate</p> |

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| Organization | No Comments | Question 4 Comment |
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| | | requirements as they pertain to generation facilities. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>Likewise, FAC-008 is not redundant with FAC-001, FAC-002, MOD-011 or TOP-002 as the commenter asserts. FAC-001 requires that the TO establish interconnection requirements. FAC-002 requires the coordination of assessments when interconnecting new facilities to the BES. MOD-011 (which has not been approved by FERC) requires that the RRO establish data requirements, reporting procedures, and system Models for steady state data. TOP-002 requires the Generator Operator, among others, to coordinate its operation with its host Balancing Authority and Transmission Service Provider, and provide information and verification as requested by the Balancing Authority or Transmission Operator. None of these Standards cited requires that the Methodology for determining Facility Rating be documented and followed.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| MRO NERC Standards Review Subcommittee | | FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'; the NSRS would like to have clarification of this term. Is it a type-o, should it state "Equipment Rating" |
| <p>Response: The FR SDT thanks you for your comment. The phrase ‘Ratings of Equipment’ in R3.1 is correct and is meant to imply the multiple ratings associated with the various pieces of equipment that comprises a Transmission Facility.</p> | | |
| Kansas City Power & Light | | R1 is fundamentally a duplication of the requirements contained in standards MOD-024-1 and MOD-025-1 for determination and verification of generator real and reactive capabilities. Any additional requirements language that may be deemed necessary to establish the methodology for generator power capabilities should be directed there. This would also require the removal of M1 and the VSL’s for R1 in this proposed standard. In addition, for either generating stations or transmission stations, there can be equipment that is of such an age as there is no nameplate information, no historical record of establishment of an equipment rating with the owner or the manufacturer, and/or the manufacturer of the equipment no longer exists to |

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| Organization | No Comments | Question 4 Comment |
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| | | <p>obtain rating data. It is recommended the Drafting Team consider this in the requirements for FAC-008-2. Especially consider revising R6 in the proposed standard. R2.2 requires an explanation for how each of the possible methods utilized to establish equipment ratings could be used. This does not contribute to maintaining the reliability of the BES. There are hundreds of different pieces of equipment in the field. It is recommended to remove the sub-requirements of R2.2 and to delete, including identification of how each of the following were considered: ?, from requirement R2.2.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC 008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| PJM | | <p>Requirement R1 should be removed because similar requirements to determine a generator's real and reactive capability by verification exist in MOD-024 and MOD-025. Additionally MOD-010 requires submittal of generating unit capability to the Regional Council for modeling purposes.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> <p>For the Operating Horizon, similar information is necessary, and is often supplemented or modified, as the period being studied (next season or next day for example) approaches. For generators already in service, and have an operational history, R1.2 (previous draft) allows “performance history or rating verification supplemented by engineering analysis”. MOD-024 and MOD-025 validation processes (please note that neither MOD-024 nor MOD-025 are FERC approved) could be used to satisfy R1.2 provided these data are supplemented by engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner’s nominal parameters. FAC-008 “only” requires this Methodology be documented and followed. Therefore, the FR SDT does not feel that FAC-008 is redundant with MOD-024 and/or MOD-025. FAC-008 relates to documentation for</p> | | |

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| Organization | No Comments | Question 4 Comment |
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| <p>determining Facility Ratings, not the submittal of information to a Regional Entity as required in MOD-010.</p> <p>However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| Consumers Energy Company | | <p>Many generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available as required by R1. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. R1.4 - Further discussion/clarification of "Ambient conditions" needs to be contained in the Standard.</p> |
| <p>Response: The FR SDT thanks you for your comment. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities. The requirements include provisions to use performance tracking (actual test data) as a determination for Facility Ratings. The drafting team believes that most entities understand the term, "ambient conditions."</p> | | |
| Hydro One Networks Inc. | | <p>In the current version of the standard and in the proposed draft, Requirements R3 and R4 obligate TOs to subject their rating calculation methodologies to inspection and review by their RC, TOP, TP or PC. While we agree that TOs could share this material, we do not consider that a technical review and obligation to respond to comments should take place. Ratings are the sole prerogative of the asset owners and the decision on how to manage the life cycle of their assets and how they are going to be operated cannot be taken away from them. The overriding principle is that asset owners must have the final say on the ratings of the equipment they own. In response to this very comment submitted in the past, the SDT has stated that the intent of the requirement is to subject the methodology to a "peer review." Our view is that if it is a peer review, such requirement does not belong in the standard.</p> |
| <p>Response: The FR SDT thanks you for your comment. The standard does not, nor was it the intent, to require the asset owner to change their ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions.</p> | | |
| Manitoba Hydro | | <p>Manitoba Hydro does not agree with the Violation Risk Factors assigned to requirements R1 and R2. The requirement that the Transmission and Generator Owner each have a documented methodology for determining Facility Ratings should not be assigned a Medium VRF. Manitoba Hydro currently has a methodology that is used to determine Facility Ratings. If Manitoba Hydro does not clearly document this methodology, system reliability will not be negatively affected, as long as the appropriate ratings have been provided to the operators. Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not</p> |

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| | | <p>provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3 or R4. A Severe Violation Severity Level should be limited to situations where rating data is not provided (i.e. a violation of R6). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R3) jeopardize the reliability of the system. The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturer's ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data.</p> <p>Manitoba Hydro recommends that Requirements 2.1 and 2.2 be revised as follows to clearly address this issue:</p> <p>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:</p> <p>R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers (IEEE) or IEC.</p> <p>R2.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3.</p> <p>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</p> |

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| | | <p>considered:</p> <p>R2.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> |
| <p>Response: The FR SDT thanks you for your comment. We have reviewed the VRF guidelines and agree with your suggested revision. We have changed the VRF to Lower. Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post- violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement.</p> <p>For generating units covered under R.1 the word “consider” with respect to R1 does not equate with “included”. The intent of the requirement is to indicate whether a sub-requirement was considered and if so, how it was incorporated into the methodology. For a generating facility that has been in service for a number of years, “performance history” is one of the options that can be utilized for the facility ratings methodology.</p> <p>Regarding the recommendation to modify R2.1.4 to read: “Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3. R2.2”.</p> <p>Existence of records, data or operational experience for an equipment rating would normally not be an acceptable substitute for a documented rating methodology. The existence of the records, data or operational experience does not confirm that the equipment can actually withstand the loading as prescribed by the documented rating for the specified time period. The fact that time and work are required to establish a methodology is not a reason for not having a documented methodology. If this argument was valid, then entities that never experienced a stability event could argue that they do not need to run stability studies because they require time and work.</p> | | |
| American Electric Power | | <p>AEP has identified a few areas for the SDT to consider as the team reviews the scope and content of the current draft standard. Other stakeholders will likely have issues as well that warrant expanding the scope of the SAR. For example, we believe that it should be the responsibility of the owner to provide ratings. In the case where generators own facilities that could be considered transmission facilities, the generator should be able to defer to the “host” transmission owner to determine ratings for transmission equipment owned by the associated generator (provided the “host” transmission owner agrees). This arrangement could be addressed administratively by letter of understanding. Also, there seems to have been an omission by not including performance history in part of R2, as performance history is included in R1. The ratings documentation for some older facilities may not be available and there may also not be an effective manner in which to obtain such documentation. However,</p> |

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| | | performance history may well provide the necessary support for the existing ratings. |
| <p>Response: The FR SDT thanks you for your comment. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities. The requirements do not preclude the type of arrangement that you mention above to determine for Facility Ratings.</p> <p>Performance history R2: This could be covered under 3.1.3 which states: "A practice that has been verified by testing or engineering analysis."</p> | | |
| Ameren | | <p>As responded to questions above, we agree with the scope and applicability of the SAR and do not see any issues in meeting the requirements. However, we believe that SDT's response up front to the following two questions would provide further clarification, consistency and possibly would avoid future interpretation requests:</p> <p>1) R1 requires to "consider" five sub-requirements, R1.1 through R1.5. What does "consider" mean? For example, assuming that data/information is available for R1.2 through R1.5, but the commissioning data is not available for a 50+ years old generator. Would a statement to that effect be adequate to meet "consideration" criteria for R1.1? If not, could you provide any guidance for such cases</p> <p>2) Since R1 and R2 both apply to generating facilities, (a) How far "out" from the generator should the R1 requirements apply? Specifically, do the iso-phase bus duct, GSU transformer, GSU disconnect switches, synchronizing breaker, any other facility up to the interconnection point belong in (i) R1, (ii) R2, (iii) some of them belong in R1 and some of them in R2, or (iv) does not matter as long as they are covered either in R1 and R2? (b) Do the R2 requirements "start" where the R1 requirements "end"? Can you please provide guidance and/or examples to ensure that GO continues to meet R1 and R2 requirements on a consistent basis</p> |
| <p>Response: The FR SDT thanks you for your comment. The Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). <i>[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]</i></p> <p>1.1. The documentation shall contain at least one of the following:</p> <p>Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an</p> | | |

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| | | <p>established engineering practice having a successful implementation record.</p> <p>Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.</p> <p>1.2. The documentation shall be capable of demonstrating consistency with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned equipment connected between the generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer (consistent with location specified in R1 by the Generator Owner) and the point of interconnection with the Transmission Owner that contains all of the following. <i>[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]</i></p> <p>2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p>Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <p>A practice that has been verified by testing or engineering analysis.</p> <p>2.2. 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:</p> <p>Equipment Rating standard(s) used in development of this methodology.</p> <p>Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.</p> <p>Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>Operating limitations.²</p> <p>2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> |

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

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| <p>2.4.</p> | | <p>The scope of equipment addressed shall include, but not limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.</p> <p>R2 requires the owner to “consider” five sub-requirements in the development of the methodology in R2.1, The term “consider” means, just that “consider” and a statement, for example, that “the commissioning data is not available for a 50+ years old generator” and therefore not used in developing Generator ratings.</p> |
| <p>Puget Sound Energy</p> | | <p>PSE requests clarity of R6 as it relates to the words “as scheduled by such requesting entities” and the added time horizon of Same-day Operations and Real time Operations. Same-day Operations would imply that an entity needs to provide facility ratings within a required timeframe of a day and Real Time Operations would imply that an entity needs to provide facility rating within one hour or less to preserve the reliability of the bulk electric system. We recognize that the words were in the previous version, but find the addition of the time horizon to create confusion and question.</p> |
| <p>Response: The FR SDT thanks you for your comment. We agree with your comment and feel that the appropriate Time Horizon in Operations Planning. We have removed the Same-Day Operations and Real-Time Operations time horizons from new R6 and R7.</p> | | |
| <p>Wisconsin Electric Power Company dba We Energies</p> | | <p>1. Section B, R1: Generating Unit Facilities: the Violation Risk Factor is listed as MEDIUM. We maintain the VSL should be revised to LOWER to reflect the fact that generators are radial elements which do not have the potential to limit area power flows like transmission lines do. 2. Section D, Compliance, 2. Violation Severity Levels: Similar to the comments for R1 above, the Violation Severity Levels for R1.1 through R1.5 should be lower than shown in the draft. The maximum level for generating facilities should be changed from SEVERE to MODERATE to adequately distinguish between a radial generator and a network transmission line.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have reviewed the VRF guidelines and agree with your suggested revision. We have changed the VRF to Lower.</p> <p>Regarding the VSL issue, violation severity levels (VSLs) are defined measurements of the degree to which or how severely a violator violated a requirement of a reliability standard and is assessed post- violation; whereas violation risk factors indicate the relative potential impacts that violations of each standard could pose to the reliability of the bulk power system. As such VSLs may have a “severe level” either as the only VSL level or in connection with 1, 2 or 3 other levels as stated in the draft standard. VSLs are not relative to impact on the BES but a measurement of meeting the requirement.</p> | | |
| <p>Xcel Energy</p> | | <p>ISSUE #1: Xcel Energy is requesting clarification on the proposed FAC-008-2 standard for transmission and substation equipment. The definition of an Equipment Rating in NERC’s glossary of terms is: “The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient</p> |

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| | | <p>conditions, as permitted or assigned by the equipment owner." FAC-008-2 requires that all facilities must include equipment ratings in the development of a facility rating. R2.1 includes the phrase 'Ratings of the Equipment'. We'd like clarification that the standard applies only to the ampacity portion of the Equipment Rating and not the full definition as noted above. The standard seems to be setup that way, but internally we've had some questions related to the full definition of Equipment Rating and how it applies to the standard. Our facilities have always been constructed to conform to applicable IEEE and ANSI standards at the time of installation. If this doesn't cover the intent of the standard, would you please provide an example of ratings to be included for voltage, frequency, and transient conditions for a facility? An example would assist us in determining what is required to be reported, especially about the requirement of transient condition and duration. An example of what we've done to comply with FAC-009 is also attached for your review/comments. (It doesn't include the spreadsheets that combine T-Lines and Sub ratings.) In addition, the short circuit information is kept by all utilities in a separate database (CAPE, ASPEN, etc.) and ran periodically to address breakers short circuit ratings. Is it the intent of this standard to add these reports to this Facility Ratings data?</p> <p>ISSUE #2: The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction? and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The original drafting team for FAC-008 considered this issue when drafting the current standard. In response to a request to add the requirement that the methodology be ?consistent with and based on credible and recognized standards/criteria ?, the drafting team responded: " The Drafting Team did not adopt the change because there are many Facilities in place with ratings that were established many years ago and it would be very costly to go back and re-establish ratings based on a set of industry standards." The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs (which Xcel Energy anticipates could run into the 100's of millions, and potentially billions, of dollars industry-wide) would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to</p> |

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| | | <p>justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Xcel Energy recommends that Requirements 2.1 and 2.2 be revised as follows to clearly address this issue: 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: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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 R2.1.4. In the case of Equipment placed in service prior to the effective date of this requirement, readily available records or data or operational experience. 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, if readily available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). If the intent of this requirement is to force entities to collect this information, then an extended implementation plan should be developed that will allow industry participants sufficient time to gather the required data before the revisions take effect.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>Issue #1: “Facility”, “Facility Rating”, “Element”, “Rating” and “Equipment Rating” are all NERC defined terms. A Facility is a set of electrical equipment that operates as a single BES Element. To determine a “Facility Rating” the Ratings of the individual equipment comprising that Facility must be considered and the most limiting applicable Equipment Rating governs the rating of the Facility (R2.3 of previous draft). R 3.4.2 requires that “as a minimum, both Normal and Emergency Ratings” shall be addressed. “Normal Rating” and “Emergency Rating” are NERC defined terms. Both of these definitions include the words “usually expressed in megawatts, or other appropriate units”.</p> <p>Issue #2: This Standard does not require the recreation of data that is no longer available or no longer accessible for any reason. R3.1 allows for multiple methods for determining facility ratings which include the items that you propose above. However, the Generator Owner requirements for this draft Standard have been revised (Now R1 and R2 in the current draft) to provide greater clarity of the Generator Owner responsibilities.</p> | | |
| <p>Independent Electricity System Operator</p> | | <p>The IESO would like to reiterate two of its previous comments (on R4 and R5) which we feel have not been satisfactorily addressed by the SDT. Our previous comments on R4: We do not think this rises to the level of a reliability standard. This is an administrative process. Further, the TO and the GO own their facilities and they provide these facilities for the GOP and TOP and other applicable entities to operate. The ratings they determine provide the upper bound that their facilities may be operated to, and hence should be decided totally at their own</p> |

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| | | <p>discretion. We do not believe other entities have the right to challenge the methods used or the level of the rating determined by the facility owners. Any such challenges, even applicable, should be addressed in the agreements among the owners and the users and outside of the reliability standard process. We suggest that this requirement be removed. The SDT's Response: The intent of R4 is to provide peer review. This is an important concept in ensuring the technical accuracy of the rating methodology. Peers are more likely to have detailed knowledge of methodologies than auditors - and finding errors or questionable practices before the use of an unsound methodology results in inappropriate ratings is better than the alternative which is to discover incorrect ratings during a system disturbance IESO's view is that this response does not recognize that the decision authority rests solely with the facility owners (as so indicated by the SDT in its response to our comments on R5, as detailed below). Providing a response to comments on the rating is an administrative procedure that does not contribute to reliability whatsoever. We request the SDT to re-consider our comment and proposal to drop this requirement. Our previous comments on R5: R5 holds the facility owners responsible for determining the ratings for their solely and jointly owned facilities. The standard is silent on which methodology to use and how ratings of jointly owned facilities are determined. For example, there is no requirement on which method to choose among joint owners if their methods are different, and on using the more conservative of the two ratings where different. This needs to be provided. SDT's Response R5 the Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision. This response does not address which facility owner, among the joint owners, has the final say. Further, while the rating itself may be a commercially-based decision, the decision on which method to choose from among those provided by the joint owners to develop the final rating is not specified in the requirement, which can lead to confusing ratings to the users and operators of jointly own facilities and result in adverse impact on reliability. We urge the SDT to consider strengthening R5 to fill this void.</p> |
| <p>Response: The FR SDT thanks you for your comment. The standard does not, nor was it the intent, to require the asset owner to change their ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions.</p> <p>Which ratings methodology should be utilized to determine the ratings of jointly owned facilities should be addressed in the agreements among the owners. The intent of this standard is to have a documented rating methodology, not to dictate what methodology is used to determine ratings on a jointly owned facility.</p> | | |
| OPG | | <p>References related to major system disturbances, including the NERC's 2003 Blackout Report; do not indicate GENERATING Facility Rating Methodologies as a source of problems. On the other hand, NERC's 2003 Blackout report, recommendation 13c, talks about the need to evaluate TRANSMISSION facility rating methodologies and sharing of consistent ratings information. This was driven by cases where planners and operators from different areas used</p> |

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| | | different ratings for the same facility (i.e. HV transmission lines). This implies that the main focus of FAC 008-02 should be on major TRANSMISSION facilities. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of the standard is: “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.”</p> <p>This applies to Generation as well as Transmission Facilities. In addition, FERC Order 693, Paragraph 739, FERC “directs the ERO to submit a modification to FAC-008-1 that requires transmission and generation facility owners to document underlying assumptions and methods used to determine normal and emergency facility ratings”. This also supports the applicability of FAC-008-2 to both Generation and Transmission Facilities.</p> | | |
| Hydro-Québec Transenergie (HQT) | | Various existing standards address critical aspects of Generation Facility ratings and could be sufficient for the reliable planning and operation requirements of the BES. Included among these are: FAC001-Facility Connection RequirementsFAC002-Coordination of Plans for New FacilitiesMOD011-Steady-state Data Requirements and Reporting ProceduresMOD024-Verification of Generator Gross and Net Real Power CapabilityMOD025-Verification of Generator Gross and Net Reactive Power CapabilityTOP002-Normal Operations Planning These existing standards currently address connection and performance requirements, consistency of modeling data and reporting procedures, information exchange process for operations planning including notifications of short term de-ratings, and verification of generator facility capabilities. These standards and FAC-008-02 should be reviewed eventually to eliminate duplication of requirements. |
| <p>Response: The FR SDT thanks you for you comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” The other standards that you mention require reporting of data and ratings. The FR SDT agrees that redundancy between standards should be eliminated.</p> | | |
| American Transmission Company | | FERC has the ability, through its market oversight authority, to require the reporting of the limiting component and the theoretical increase in rating of the limiting component is disregarded. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| IRC Standards Review Committee | | <p>The SRC would like to reiterate two of its previous comments (on R4 and R5) which we feel have not been satisfactorily addressed by the SDT.</p> <p>R4: If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner’s</p> |

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| | | <p>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.</p> <p><u>Our previous comments on R4:</u></p> <p>We do not think this rises to the level of a reliability standard. This is an administrative process. Further, the TO and the GO own their facilities and they provide these facilities for the GOP and TOP and other applicable entities to operate. The ratings they determine provide the upper bound that their facilities may be operated to, and hence should be decided totally at their own discretion. We do not believe other entities have the right to challenge the methods used or the level of the rating determined by the facility owners. Any such challenges, even applicable, should be addressed in the agreements among the owners and the users and outside of the reliability standard process. We suggest that this requirement be removed.</p> <p>SRC’s view is that this response does not recognize that the decision authority rests solely with the facility owners (as so indicated by the SDT in its response to our comments on R5, as detailed below). Providing a response to comments on the rating is an administrative procedure that does not contribute to reliability whatsoever. We request the SDT to re-consider our comment and proposal to drop this requirement.</p> <p>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.</p> <p><u>Our previous comments on R5:</u></p> <p>R5 holds the facility owners responsible for determining the ratings for their solely and jointly owned facilities. The standard is silent on which methodology to use and how ratings of jointly owned facilities are determined. For example, there is no requirement on which method to choose among joint owners if their methods are different, and on using the more conservative of the two ratings where different. This needs to be provided.</p> <p>This response does not address which facility owner, among the joint owners, has the final say. Further, while the rating itself may be a commercially-based decision, the decision on which method to choose from among those provided by the joint owners to develop the final rating is not specified in the requirement, which can lead to confusing ratings to the users and operators of jointly own facilities and result in adverse impact on reliability.</p> <p>We urge the SDT to consider strengthening R5 to fill this void.</p> |

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| <p>Response: The FR SDT thanks you for your comment. The standard does not, nor was it the intent, to require the asset owner to change their ratings based on an inquiry, but simply to submit the ratings methodology document and respond to any questions.</p> <p>R4: The intent of R4 is to provide peer review. This is an important concept in ensuring the technical accuracy of the rating methodology. Peers are more likely to have detailed knowledge of methodologies than auditors – and finding errors or questionable practices before the use of an unsound methodology results in inappropriate ratings is better than the alternative – which is to discover incorrect ratings during a system disturbance</p> <p>R5: The Facility Owner needs to have the final say on how its Facilities are rated as this is an economically-based decision.</p> | | |
| Electric Power Supply Association | No Additional Comments | |
| Dynegy | No Additional Comments | |
| Duke Energy | No Additional Comments | |
| Cowlitz County PUD | No Additional Comments | |
| City of Tallahassee (TAL) | No Additional Comments | |
| SERC Engineering Committee Planning Standards Subcommittee | No Additional Comments | |
| Reliant Energy Inc and Gila River Power | No Additional Comments | |
| Southern Company | No Additional Comments | |

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| Dominion Resources Inc. | No Additional Comments | |
| Public Service Enterprise Group | No Additional Comments | |
| Northeast Utilities | No Additional Comments | |
| Pepco Holdings, Inc. | No Additional Comments | |
| Entergy Services, Inc | No Additional Comments | |
| ERCOT ISO | No Additional Comments | |

Implementation Plan for FAC-008-02 — Facility Ratings

Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before this standard can be implemented.

Modified Standards

FAC-008-01 — Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings should both be retired when FAC-008-02 becomes effective.

Compliance with Standards

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Proposed Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before the new standard becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

Unofficial Comment Form for Facility Ratings — Project 2009-06

Please **DO NOT** use this comment form. Please use the [electronic form](#) located at the link below to submit comments on the SAR and proposed revisions to FAC-008 — Facility Ratings. Comments must be submitted by **September 9, 2009**. If you have questions, please contact Stephen Crutchfield at stephen.crutchfield@nerc.net or by telephone at 609-651-9455.

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Background Information:

The requestors are members of the drafting team that had been working on revisions to FAC-008-1 and FAC-009-1 that resulted in a failed ballot in December 2008. The team had been working to modify FAC-008-1 and FAC-009-1 to merge the two standards into a single standard, to add Violation Risk Factors, Time Horizons, and Violation Severity Levels, and to address two of the three directives for FAC-008-1 in Order 693. An expanded discussion of these directives is elsewhere in this document.

Responders' comments in the first posting of this SAR appeared to achieve consensus on addressing these two FERC directives. However, in the course of responding to the draft SAR, several Generator Owners commented that the Generator Owner requirements were unnecessary, onerous, and/or duplicative to other Standards – including MOD-024 and MOD-025, as well as other standards.

The purpose of FAC-008 is 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." (Emphasis added.) The SDT also notes that FAC-008-1 is FERC approved and enforceable, while neither MOD-024 nor MOD-025 has been approved by FERC. Therefore, the SDT is of the opinion that Generator Owners cannot be 'exempted' from the Requirements, or the intent, of FAC-008 regardless of the views of being possibly duplicative to other standards (either MOD-024 or MOD-025). That is, the SDT believes that the Generator Owner's Facility Ratings, which are used in the reliable planning and operation of the BES, must be based on technically sound principles. Therefore appropriate requirements to document the basis for the Generator Owner's ratings must be included in FAC-008. While existing FERC approved standards (ex: FAC-001 and MOD-010) require the Generator Owner to provide certain plant data and ratings information, none require the Generator Owner to demonstrate the documented basis for these ratings. Thus, the FAC-008 requirements are not redundant to other FERC approved standards. Once MOD-024 and MOD-025 validation processes reach industry consensus and are approved by FERC, these could be used to demonstrate a satisfactory basis for MW and MVAR ratings under FAC-008. In fact, Requirement R1, Part 1.1.2 in the revised proposed draft standard allows these types of processes to be used in the interim, provided these data are supplemented by appropriate engineering analysis. This analysis could include the rationalization of the validation test or operational data (i.e. system voltage, ambient temperature) to the owner's nominal parameters.

To address apparent ambiguity for Generator Owners in the prior draft standard version, the SDT is proposing Requirements R1 and R2 to address Facility Ratings for Generator Owners

– allowing (but not requiring) that generating unit Facilities be treated as a “black-box” to determine the Facility Rating of the generating unit Facilities. The revised focus of the proposed Requirement R1 is on making sure the Generator Owner can demonstrate that its Facility Ratings are supported by the “documentation” normally developed and used in designing, constructing, and operating a power plant. This documentation includes ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or other information that demonstrates an established engineering practice having a successful implementation record (see proposed Requirement R1, Part 1.1.1.).

It also allows use of operational information such as commissioning test results, performance testing, or historical performance records, any of which may be supplemented by engineering analyses (see Requirement R1, Part 1.1.2). Proposed Requirement R1, Part 1.2 requires that this documentation support the objective that the determined Facility Ratings do not exceed the most limiting Equipment Rating of the generating unit Facility (of the ‘black-box’). The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). Examples are excitation equipment, generator bus conductors, breakers, and step-up transformers that limit a generating unit’s thermal output (MVA or MW + jMVAR) to a value less than the prime mover’s MW rating and/or the electrical generator’s MVA rating.

Requirement R1 also allows latitude for the Generator Owner to define the ‘boundary’ of the generating unit Facility (“black-box”) as either the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer – presumably chosen by the Generator Owner to be consistent with the change in ownership point between the Generator and Transmission Owners.

The SDT believes, and that opinion has been supported by previous industry responders, that all Facilities must be ‘rated’ and the rating of each Facility is the responsibility of the respective Owner. Requirement R2 is intended to address the presumably few incidents, where the Generator Owner owns Transmission Facilities beyond the generator step-up transformer to the transmission switchyard. Requirement R2 addresses the Facility Ratings not addressed by Requirement R1, and not owned by the corresponding Transmission Owner. The SDT believes that for the vast majority of generating unit Facilities, the tasks involved in meeting the expectation of Requirement R2 are negligible (if the point of interconnection is, for example, the high side of the generator step-up transformer, and the Generator Owner also chooses this point as allowed in Requirement R1) or very minor – perhaps only covering the conductors between the high-side of the generator step-up transformer and the switchyard owned by the Transmission Owner. However, if the Generator Owner owns, for example, the adjacent switchyard through which ‘bi-directional Transmission flows’ may appear, then the rating obligation for the switchyard Facilities is analogous to the Transmission Owner Facilities addressed in Requirement R3.

The SDT believes that this version of the draft SAR removes the ambiguity that some believe placed an onerous and unnecessary burden on the Generator Owner, and the requirements of FAC-008 (as contained in the attached draft) are compatible with the MOD-024 and MOD-025 and other standards. In addition, the current draft standard does require

the Generator Owner to develop and provide Facility Ratings at an accuracy level needed to be “used in the reliable planning and operation of the Bulk Electric System...”.

The Violation Severity Levels Standard Drafting Team (VSLDT) — Project 2007-23 has posted proposed Violation Severity Levels (VSLs) for FAC-008-1 and FAC-009-1. The SDT used the 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 VSL guidelines. The revised VSLs for R1-R3 are consistent with the VSLs developed for other FAC-008-2 requirements.

***Please use the [electronic comment form](#) to submit your final responses to NERC.**

1. Do you agree that Requirement R1 removes the ambiguity of and simplifies the Generator Owner obligations for generator Facility Ratings?

Yes

No

Comments:

2. Do you agree that Requirement R1 allows more latitude for the Generator Owner in how he supports the technical basis for his generator Facility Ratings?

Yes

No

Comments:

3. Do you agree that the 'black-box' approach (please refer to the background material above) for providing generating unit Facility Ratings provides the Facility ratings that can be "...used in the reliable planning and operation of the Bulk Electric System...?"

Yes

No

Comments:

4. Do you agree that the selection of "generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer" in Requirement R1 provides sufficient latitude to the Generator Owner? If not, please suggest other or additional locations.

Yes

No

Comments:

5. Do you agree that Requirement R2 properly addresses the rating responsibilities of generator owned Facilities outside the 'black box' that are not addressed (or not able to be addressed) in Requirement R1?

Yes

No

Comments:

6. If you have any other comments on this standard that you have not already submitted above, please provide them here.

Comments:

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**
 - Transmission Owner.
 - Generator Owner.
5. **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. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
 - 1.1. The documentation shall contain at least one of the following:
 - 1.1.1. Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice having a successful implementation record.
 - 1.1.2. Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2. The documentation shall be capable of demonstrating consistency with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned equipment connected between the generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer (consistent with location specified in R1 by the Generator Owner) and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
 - 2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - 2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- 2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - 2.1.3. A practice that has been verified by testing or engineering analysis.
 - 2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
 - 2.2.1. Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4. Operating limitations.¹
 - 2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 2.4. The scope of equipment addressed shall include, but not limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
- R3. Each Transmission 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*]
 - 3.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility shall be consistent with at least one of the following:
 - 3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 3.1.2. 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).
 - 3.1.3. A practice that has been verified by testing or engineering analysis.
 - 3.2. 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:
 - 3.2.1. Equipment Rating standard(s) used in development of this methodology.
 - 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²

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

- 3.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 3.4.** The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1.** 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.
 - 3.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4.** Each Transmission Owner shall make its Facility Ratings Methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings 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]*
- R5.** If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings Methodology or Generator Owner's documentation for determining its Facility Ratings, 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] [Time Horizon: Operations Planning]*
- R6.** Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7.** Each Transmission Owner and Generator Owner shall 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]*

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall each have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each 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

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Methodology available for inspection within 21 calendar days of a request in accordance with Requirement 34.

- M5.** 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 5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation used to develop its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 6).
- M7.** Each Transmission Owner and Generator Owner shall 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 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 documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings Methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6. The Transmission Owner shall keep its current, in force Facility Ratings Methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, Measure M5, and Measure M7 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 | N/A | <p>The Generator Owner’s Facility Rating documentation did not address either of the following:</p> <ul style="list-style-type: none"> • Requirement R1, Part 1.1.1 • Requirement R1, Part 1.1.2. | <p>The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2.</p> | <p>The Generator Owner failed to provide documentation for determining its Facility Ratings.</p> |
| R2 | <p>The Generator Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner’s Facility Rating Methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 |

Standard FAC-008-2 — Facility Ratings

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| R3 | <p>The Transmission Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner’s Facility Rating Methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.4.1 • 3.4.2 <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner’s Facility Rating Methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R3 | <p>The responsible entity made its Facility Ratings Methodology available within more than 21 calendar days but less than or equal to 31 calendar days after a request. (R3)</p> | <p>The responsible entity made its Facility Ratings Methodology available within 31 calendar days but less than or equal to 41 calendar days after a request.</p> | <p>The responsible entity made its Facility Rating Methodology available within more than 41 calendar days but less than or equal to 51 calendar days after a request.</p> | <p>The responsible entity failed to make its Facility Ratings Methodology available in more than 51 calendar days after a request. (R3)</p> |

Standard FAC-008-2 — Facility Ratings

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings Methodology but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings Methodology. (R5)</p> | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) |

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**
 - Transmission Owner.
 - Generator Owner.
5. **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. ~~Each~~The Generator Owner shall have a documented methodology for determining the Facility Ratings (~~Facility Ratings Methodology~~) of its solely and jointly owned ~~turbine-generator unit~~ Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner) ~~that identifies how each of the following were considered:~~ [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]
 - 1.1. The documentation shall contain at least one of the following:
 - 1.1.1. Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice having a successful implementation record.
 - ~~1.1.1.2.~~ Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.~~Facility commissioning data.~~
 - R2. 1.2. The documentation shall be capable of demonstrating consistency with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility. ~~Either performance history or rating verification supplemented by engineering analysis.~~
 - ~~2.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.~~
 - ~~R3. Ambient conditions.~~
 - ~~R1.5. Equipment Rating industry standard(s) used in development of this methodology.~~
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned equipment connected between the generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer (consistent with location specified in R1 by the Generator Owner) and

the point of interconnection with the Transmission Owner that contains all of the following. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

- 2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - 2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - 2.1.3. A practice that has been verified by testing or engineering analysis.
- 2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
 - 2.2.1. Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4. Operating limitations.¹
- 2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4. The scope of equipment addressed shall include, but not limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.

~~R2.R3.~~ EachThe 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]*

- ~~R2.1.3.1.~~ _____ The methodology used to establish the Ratings of the Equipment that comprises the Facility shall be consistent with at least one of the following:
 - ~~R2.1.3.1.1.~~ _____ Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - ~~R2.1.3.1.2.~~ _____ 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).
 - ~~4.1.3.~~ _____ A practice that has been verified by testing or engineering analysis.

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

~~R2.2.3.1.3.~~

~~R2.2.1.3.2.~~ 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:

~~3.2.1.~~ Equipment Rating standard(s) used in development of this methodology.

~~R2.2.2.3.2.2.~~ Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.

~~R2.2.3.3.2.3.~~ Ambient conditions (for particular or average conditions or as they vary in real-time).

~~R2.2.4.3.2.4.~~ Operating limitations.²

~~R2.3.3.3.~~ A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.

~~4.4.~~ The process by which the Rating of equipment that comprises a Facility is determined.

~~3.4.~~

~~4.2.~~ 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.

~~3.4.1.~~

~~1.3.3.4.2.~~ The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.

~~R3-R4.~~ ~~Each~~The Transmission Owner shall ~~make its Facility Ratings Methodology~~ and ~~each~~ Generator Owner shall each make its ~~documentation for determining its Facility Ratings~~ ~~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*]

~~2-R5.~~ If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's ~~Facility Ratings Methodology~~ or Generator Owner's ~~documentation for determining its Facility Ratings~~ ~~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*]

~~3-R6.~~ ~~The~~ ~~Each~~ 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 ~~or documentation for determining its Facility Ratings~~. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning, Same-day Operations, Real-time Operations*]

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

~~4.R7.~~ ~~The Each~~ 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~~]

C. Measures

- M1. ~~Each~~The Generator Owner shall have a ~~documented Facility Ratings Methodology~~ that shows how ~~its Facility Ratings were determined as identified in each of the items identified in Requirement 1.1 through Requirement 1.5 were considered.~~
- M2. Each Generator Owner shall have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3. ~~Each~~The Transmission Owner ~~and Generator Owner~~ shall each have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 3, ~~Parts 3.1 through 3.4.~~
- M4. ~~The Each~~ 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 ~~34.~~
- M5. 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 ~~45.~~
- M6. ~~The Each~~ Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with ~~its the documentation used to develop its Facility Ratings as specified in Requirement R1 or consistent with its~~ Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement ~~56.~~).
- M7. ~~The Each~~ 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 ~~67.~~

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 [documentation](#), ~~in force Facility Rating Methodology~~ (for R1) and any modifications to the ~~methodology~~ [documentation](#) that were in force since last compliance audit period for Measure [M1](#) and Measure [M6](#).

[The Generator Owner shall keep its current, in force Facility Ratings Methodology \(for R2\) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.](#)

The Transmission Owner ~~and Generator Owner~~ shall keep its current, in force Facility Ratings Methodology (for [R3](#)) and any modifications to the methodology that were in force since the last compliance audit for Measure [M3](#) and Measure [M6](#).

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 [M6](#).

The Generator Owner and Transmission Owner shall each keep evidence for Measure [M4](#), Measure [M5](#), and Measure [M7](#) 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|---|---|
| R1 | <p>The Generator Owner's Facility Ratings Methodology for generating unit Facilities, does not identify how ambient conditions were considered. (R1.4)<u>N/A</u></p> | <p>The Generator Owner's Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: Ratings provided by equipment manufacturers (R1.3) Equipment Rating standard(s) (R1.5)<u>The Generator Owner's Facility Rating documentation did not address either of the following:</u></p> <ul style="list-style-type: none"> <u>Requirement R1, Part 1.1.1</u> <u>Requirement R1, Part 1.1.2.</u> | <p>The Generator Owner's Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: Facility commissioning data. (R1.1) Performance history or rating verification accompanied by engineering analysis. (R1.2)<u>The Generator Owner's Facility Rating documentation did not address Requirement R1, Part 1.2.</u></p> | <p>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) 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) <u>The Generator Owner failed to provide documentation for determining its Facility Ratings.</u></p> |
| R2 | <p><u>The Generator Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R2:</u></p> <ul style="list-style-type: none"> <u>2.1.1</u> <u>2.1.2</u> <u>2.1.3</u> <u>2.2.1</u> <u>2.2.2</u> <u>2.2.3</u> <u>2.2.4</u> | <p><u>The Generator Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement R2:</u></p> <ul style="list-style-type: none"> <u>2.1.1</u> <u>2.1.2</u> <u>2.1.3</u> <u>2.2.1</u> <u>2.2.2</u> <u>2.2.3</u> <u>2.2.4</u> | <p><u>The Generator Owner's Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</u></p> <p><u>OR</u></p> <p><u>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</u></p> | <p><u>The Generator Owner's Facility Rating Methodology failed to recognize a facility's rating based on the most limiting component rating as required in Requirement R2, Part 2.3</u></p> <p><u>OR</u></p> <p><u>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of</u></p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----------------------------|--|---|--|---|
| | | | <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 |
| <p>R2R3</p> | <p>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 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</p> | <p>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 methodology does not identify whether it is consistent with the methods identified in R2.1.1, R2.1.2, or R2.1.3. The Transmission Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement</p> | <p>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 The scope of equipment 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) The Transmission Owner's Facility Rating Methodology</p> | <p>The Transmission Owner or Generator Owner has no Facility Rating Methodology. (R2) The Transmission Owner's Facility Rating Methodology failed to recognize a Facility's rating based on the most limiting component rating as required in Requirement R3, Part 3.3 OR -The Transmission Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|---|--|
| | <p>Equipment Rating of the individual equipment that comprises that Facility. (R2.3)</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.4.1 • 3.4.2 <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R3 | <p>The Transmission Owner or Generator Ownerresponsible entity made its Facility Ratings Methodology available to requesting entities for inspection, but within a time period that was greater within more than 21 calendar days but less than or equal to 30-31 calendar days of receipt of after</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Transmission Planners or its Planning Coordinators. (R3)</p> <p>OR</p> <p>The Transmission Owner or Generator Ownerresponsible</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Reliability Coordinators or its Transmission Operators. (R3)</p> <p>The Transmission Owner or Generator Ownerresponsible entity made its Facility Rating Methodology available for</p> | <p>The Transmission Owner or Generator Ownerresponsible entity received requests, but did not failed to make its Facility Ratings Methodology available to any of the requesting entities for inspection within in more than 60-51 calendar days of a receipt of after a request. (R3)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|--------------------|--|---|---|---|
| | <p>a request— (R3)</p> | <p>entity made its <u>Facility Ratings Methodology</u> available for inspection, but within a time period that was greater than within 30 <u>31</u> calendar days but less than or equal to 45 <u>41</u> calendar days of receipt of a <u>after a</u> request.</p> | <p>inspection, but within a time period that was greater <u>within more</u> than 45 <u>41</u> calendar days but less than or equal to 60 <u>51</u> calendar days of receipt of <u>after</u> a request.</p> | |
| <p><u>R4R5</u></p> | <p>The Transmission Owner or Generator Owner <u>responsible entity</u> provided a <u>complete</u> response to comments on its Facility Ratings Methodology, but the response was provided in more than 45 <u>calendar</u> days but less than or equal to <u>960</u> <u>calendar</u> days after the comments were received a <u>request</u>. (R4R5)</p> | <p><u>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</u></p> <p><u>OR</u></p> <p>The Transmission Owner or Generator Owner <u>responsible entity</u> provided <u>an on-time</u> a response to comments on its Facility Ratings Methodology <u>within 45 calendar days, and</u> but the response <u>indicated that a change will not be made to the Facility Ratings Methodology but did not indicate why no change will be made.</u> was missing one of the following: An indication of whether changes will be made <u>OR</u> If no change will be made, the reason why no change will be</p> | <p>The Transmission Owner or Generator Owner <u>responsible entity</u> provided a response to comments on its Facility Ratings Methodology, but the response was provided in more than 45 <u>70</u> <u>calendar</u> days but less than ore equal to <u>980</u> <u>calendar</u> days after <u>a request</u>, the comments were received, and the response was missing one of the following: An indication of whether changes will be made</p> <p><u>OR</u></p> <p><u>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings Methodology.</u> (R5) If no change will be made, the reason why no change will be made. (R4)</p> | <p>The Transmission Owner or Generator Owner <u>responsible entity</u> did not <u>failed to</u> provide any a response <u>as required in more than</u> to comments on its Facility Ratings Methodology <u>within 90</u> <u>80</u> calendar days <u>after the comments were received.</u> (R4R5)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|----------|--|---|---|---|
| | | made. (R4R5) | | |
| R5R 6 | The Transmission Owner or Generator Owner responsible entity developed failed to <u>establish</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for and at least one rating, but less than 5% or less of its solely owned and jointly owned Facilities.</u> , of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) | The Transmission Owner or Generator Owner responsible entity <u>failed to establish developed</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for more than but 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities.</u> of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) | The Transmission Owner or Generator Owner responsible entity <u>failed to establish developed</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for but more than 10% or more, but less than up to (and including) 15% of its solely owned and jointly owned Facilities.</u> of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) | The Transmission Owner or Generator Owner responsible entity <u>failed to establish developed</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for but more than 15% of its solely owned and jointly owned Facilities.</u> or more of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) |
| R6R 7 | The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by up to, but less than, 15 calendar days. (R6R7) | The Transmission Owner or Generator Owner provided all of its Facility Ratings on schedule to all but one of the requesting entities but the Facility Ratings provided to one of the required entities were incomplete. OR The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by <u>more than</u> 15 calendar days or more but less than <u>or equal to</u> | The Transmission Owner or Generator Owner provided some Facility Ratings on schedule to all of the requesting entities but the Facility Ratings provided to the following entities were incomplete: –Planning Coordinators and Transmission Planners, or –Reliability Coordinators and Transmission Operators OR The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one | The Transmission Owner or Generator Owner did not provide any of its Facility Ratings to the following entities: –Planning Coordinators and Transmission Planners, or –Reliability Coordinators and Transmission Operators OR The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by <u>more than 35</u> 45 calendar days or |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|-----------|---|--|--------------------------------------|
| | | 25 30 calendar days. (R6 R7) | or more of the schedules by more than 25 30 calendar days or more but less than ore equal to 35 45 calendar days. (R6 R7) | more. (R6 R7) |

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 |

| SAR Requestor Information | SAR Type <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 |

| |
|--|
| <p>Purpose</p> <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
|--|

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

Standards Authorization Request Form

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.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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. |

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

| Standard No. | Explanation |
|---------------------|--------------------|
| | |
| | |
| | |
| | |

Related SARs

| SAR ID | Explanation |
|---------------|--------------------|
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Regional Differences

| Region | Explanation |
|---------------|--------------------|
| 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 |
|--|--|--|---|
| <p>Missing a minor element (or a small percentage) of the required performance</p> <p>The performance or product measured has significant value as it almost meets the full intent of the requirement.</p> | <p>Missing at least one significant element (or a moderate percentage) of the required performance.</p> <p>The performance or product measured still has significant value in meeting the intent of the requirement.</p> | <p>Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component.</p> <p>The performance or product has limited value in meeting the intent of the requirement.</p> | <p>Missing most or all of the significant elements (or a significant percentage) of the required performance.</p> <p>The performance measured does not meet the intent of the requirement or the product delivered cannot be used in meeting the intent of the requirement.</p> |

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

Associated Documents

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

Functional Model Version 3

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

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**
 - Transmission Owner.
 - Generator Owner.
5. **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. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
 - 1.1. The documentation shall contain at least one of the following:
 - 1.1.1. Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice having a successful implementation record.
 - 1.1.2. Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2. The documentation shall be capable of demonstrating consistency with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned equipment connected between the generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer (consistent with location specified in R1 by the Generator Owner) and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
 - 2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - 2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- 2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - 2.1.3. A practice that has been verified by testing or engineering analysis.
 - 2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
 - 2.2.1. Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4. Operating limitations.¹
 - 2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 2.4. The scope of equipment addressed shall include, but not limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - R3. Each Transmission 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*]
 - 3.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility shall be consistent with at least one of the following:
 - 3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 3.1.2. 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).
 - 3.1.3. A practice that has been verified by testing or engineering analysis.
 - 3.2. 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:
 - 3.2.1. Equipment Rating standard(s) used in development of this methodology.
 - 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²

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

- 3.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 3.4.** The process by which the Rating of equipment that comprises a Facility is determined.

 - 3.4.1.** 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.
 - 3.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4.** Each Transmission Owner shall make its Facility Ratings Methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings 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]*
- R5.** If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings Methodology or Generator Owner's documentation for determining its Facility Ratings, 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] [Time Horizon: Operations Planning]*
- R6.** Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings Methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7.** Each Transmission Owner and Generator Owner shall 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]*

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall each have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each 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

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Methodology available for inspection within 21 calendar days of a request in accordance with Requirement 34.

- M5.** 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 5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation used to develop its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 6).
- M7.** Each Transmission Owner and Generator Owner shall 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 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 documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings Methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6. The Transmission Owner shall keep its current, in force Facility Ratings Methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, Measure M5, and Measure M7 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|---|---|---|
| R1 | N/A | <p>The Generator Owner’s Facility Rating documentation did not address either of the following:</p> <ul style="list-style-type: none"> • Requirement R1, Part 1.1.1 • Requirement R1, Part 1.1.2. | <p>The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2.</p> | <p>The Generator Owner failed to provide documentation for determining its Facility Ratings.</p> |
| R2 | <p>The Generator Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner’s Facility Rating Methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| R3 | <p>The Transmission Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner’s Facility Rating Methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.4.1 • 3.4.2 <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner’s Facility Rating Methodology failed to recognize a Facility's rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R3 | <p>The responsible entity made its Facility Ratings Methodology available within more than 21 calendar days but less than or equal to 31 calendar days after a request. (R3)</p> | <p>The responsible entity made its Facility Ratings Methodology available within 31 calendar days but less than or equal to 41 calendar days after a request.</p> | <p>The responsible entity made its Facility Rating Methodology available within more than 41 calendar days but less than or equal to 51 calendar days after a request.</p> | <p>The responsible entity failed to make its Facility Ratings Methodology available in more than 51 calendar days after a request. (R3)</p> |
| R5 | <p>The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5)</p> | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than ore equal to 80 calendar days after a request.</p> | <p>The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| | | <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings Methodology but did not indicate why no change will be made. (R5)</p> | <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings Methodology. (R5)</p> | |
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) |

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 |
| <u>Revision Date</u> | <u>July 23, 2009</u> |

| SAR Requestor Information | SAR Type (<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 |

| |
|--|
| <p>Purpose</p> <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
|--|

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](#) reached 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 VSLs that the VSLDT developed for new requirements R4-R7 according to the mapping table below:](#)

Standards Authorization Request Form

| <u>Old Standard</u> | <u>Old Requirement</u> | <u>New Standard</u> | <u>New Requirement</u> |
|---------------------|------------------------|---------------------|------------------------|
| <u>FAC-008-1</u> | <u>R2</u> | <u>FAC-008-2</u> | <u>R4</u> |
| <u>FAC-008-1</u> | <u>R3</u> | <u>FAC-008-2</u> | <u>R5</u> |
| <u>FAC-009-1</u> | <u>R1</u> | <u>FAC-008-2</u> | <u>R6</u> |
| <u>FAC-009-1</u> | <u>R2</u> | <u>FAC-008-2</u> | <u>R7</u> |

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](#).

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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. |

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

| Standard No. | Explanation |
|---------------------|--------------------|
| | |
| | |
| | |
| | |

Related SARs

| SAR ID | Explanation |
|---------------|--------------------|
| | |
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Regional Differences

| Region | Explanation |
|---------------|--------------------|
| 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 |
|--|--|--|---|
| <p>Missing a minor element (or a small percentage) of the required performance</p> <p>The performance or product measured has significant value as it almost meets the full intent of the requirement.</p> | <p>Missing at least one significant element (or a moderate percentage) of the required performance.</p> <p>The performance or product measured still has significant value in meeting the intent of the requirement.</p> | <p>Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component.</p> <p>The performance or product has limited value in meeting the intent of the requirement.</p> | <p>Missing most or all of the significant elements (or a significant percentage) of the required performance.</p> <p>The performance measured does not meet the intent of the requirement or the product delivered cannot be used in meeting the intent of the requirement.</p> |

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

Associated Documents

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

Functional Model Version 3

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

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**
 - Transmission Owner.
 - Generator Owner.
5. **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. ~~Each~~The Generator Owner shall have a documented methodology for determining the Facility Ratings (~~Facility Ratings Methodology~~) of its solely and jointly owned ~~turbine-generator unit~~ Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner) ~~that identifies how each of the following were considered:~~ [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]
 - 1.1. The documentation shall contain at least one of the following:
 - 1.1.1. Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice having a successful implementation record.
 - 1.1.2. Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.~~Facility commissioning data.~~
 - ~~R2.~~ 1.2. The documentation shall be capable of demonstrating consistency with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility. ~~Either performance history or rating verification supplemented by engineering analysis.~~
 - ~~2.1.~~ ~~Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.~~
 - ~~R3.~~ ~~Ambient conditions.~~
 - ~~R1.5.~~ ~~Equipment Rating industry standard(s) used in development of this methodology.~~
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings Methodology) of its solely and jointly owned equipment connected between the generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer (consistent with location specified in R1 by the Generator Owner) and

the point of interconnection with the Transmission Owner that contains all of the following. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

- 2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - 2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - 2.1.3. A practice that has been verified by testing or engineering analysis.
- 2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
 - 2.2.1. Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4. Operating limitations.¹
- 2.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4. The scope of equipment addressed shall include, but not limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.

~~R2.R3.~~ Each~~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]*

- ~~R2.1.3.1.~~ _____ The methodology used to establish the Ratings of the Equipment that comprises the Facility shall be consistent with at least one of the following:
 - ~~R2.1.1.3.1.1.~~ _____ Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - ~~R2.1.3.3.1.2.~~ _____ 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).
 - ~~4.1.3.~~ _____ A practice that has been verified by testing or engineering analysis.

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

~~R2.2.3.1.3.~~

~~R2.2.1.3.2.~~ 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:

~~3.2.1.~~ Equipment Rating standard(s) used in development of this methodology.

~~R2.2.2.3.2.2.~~ Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.

~~R2.2.3.3.2.3.~~ Ambient conditions (for particular or average conditions or as they vary in real-time).

~~R2.2.4.3.2.4.~~ Operating limitations.²

~~R2.3.3.3.~~ A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.

~~4.4.~~ The process by which the Rating of equipment that comprises a Facility is determined.

~~3.4.~~

~~4.5.~~ 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.

~~3.4.1.~~

~~R2.4.2.3.4.2.~~ The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.

~~R3.R4.~~ ~~Each~~The Transmission Owner shall make its Facility Ratings Methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings ~~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.R5.~~ If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings Methodology or Generator Owner's documentation for determining its Facility Ratings ~~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.R6.~~ ~~The~~~~Each~~ 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 or documentation for determining its Facility Ratings. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning, ~~Same-day Operations, Real-time Operations~~*]

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

~~R6.R7.~~ ~~The Each~~ 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]~~*

C. Measures

- M1. ~~Each~~The Generator Owner shall have a ~~documented Facility Ratings Methodology~~ that shows how ~~its Facility Ratings were determined as identified in each of the items identified in Requirement 1.1 through Requirement 1.5 were considered.~~
- M2. Each Generator Owner shall have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3. ~~Each~~The Transmission Owner ~~and Generator Owner~~ shall each have a documented Facility Ratings Methodology that includes all of the items identified in Requirement 3, ~~Parts 3.1 through 3.4.~~
- M4. ~~The Each~~ 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 34.
- M5. 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 45.
- M6. ~~The Each~~ Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with ~~its the documentation used to develop its Facility Ratings as specified in Requirement R1 or consistent with its~~ Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 56).
- M7. ~~The Each~~ 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 67.

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 [documentation](#), ~~in force Facility Rating Methodology~~ (for R1) and any modifications to the ~~methodology~~ [documentation](#) that were in force since last compliance audit period for Measure [M1](#) and Measure [M6](#).

[The Generator Owner shall keep its current, in force Facility Ratings Methodology \(for R2\) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.](#)

The Transmission Owner ~~and Generator Owner~~ shall keep its current, in force Facility Ratings Methodology (for [R3](#)) and any modifications to the methodology that were in force since the last compliance audit for Measure [M3](#) and Measure [M6](#).

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 [M6](#).

The Generator Owner and Transmission Owner shall each keep evidence for Measure [M4](#), Measure [M5](#), and Measure [M7](#) 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|---|---|
| R1 | <p>The Generator Owner's Facility Ratings Methodology for generating unit Facilities, does not identify how ambient conditions were considered. (R1.4)<u>N/A</u></p> | <p>The Generator Owner's Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: Ratings provided by equipment manufacturers (R1.3) Equipment Rating standard(s) (R1.5)<u>The Generator Owner's Facility Rating documentation did not address either of the following:</u></p> <ul style="list-style-type: none"> • <u>Requirement R1, Part 1.1.1</u> • <u>Requirement R1, Part 1.1.2.</u> | <p>The Generator Owner's Facility Ratings Methodology for generating unit Facilities, is missing identification of how both of the following were considered: Facility commissioning data. (R1.1) Performance history or rating verification accompanied by engineering analysis. (R1.2)<u>The Generator Owner's Facility Rating documentation did not address Requirement R1, Part 1.2.</u></p> | <p>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) 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) <u>The Generator Owner failed to provide documentation for determining its Facility Ratings.</u></p> |
| R2 | <p><u>The Generator Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R2:</u></p> <ul style="list-style-type: none"> • <u>2.1.1</u> • <u>2.1.2</u> • <u>2.1.3</u> • <u>2.2.1</u> • <u>2.2.2</u> • <u>2.2.3</u> • <u>2.2.4</u> | <p><u>The Generator Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement R2:</u></p> <ul style="list-style-type: none"> • <u>2.1.1</u> • <u>2.1.2</u> • <u>2.1.3</u> • <u>2.2.1</u> • <u>2.2.2</u> • <u>2.2.3</u> • <u>2.2.4</u> | <p><u>The Generator Owner's Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</u></p> <p><u>OR</u></p> <p><u>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</u></p> | <p><u>The Generator Owner's Facility Rating Methodology failed to recognize a facility's rating based on the most limiting component rating as required in Requirement R2, Part 2.3</u></p> <p><u>OR</u></p> <p><u>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of</u></p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----------------------------|---|---|--|--|
| | | | <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.1 • 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 |
| <p>R2R3</p> | <p>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 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</p> | <p>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 methodology does not identify whether it is consistent with the methods identified in R2.1.1, R2.1.2, or R2.1.3. The Transmission Owner failed to include in its Facility Rating Methodology two of the following Parts of Requirement</p> | <p>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 The scope of equipment 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) The Transmission Owner's Facility Rating Methodology</p> | <p>The Transmission Owner or Generator Owner has no Facility Rating Methodology. (R2)</p> <p>The Transmission Owner's Facility Rating Methodology failed to recognize a Facility's rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|---|--|
| | <p>Equipment Rating of the individual equipment that comprises that Facility. (R2.3)</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.4.1 • 3.4.2 <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating Methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 • 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R3 | <p>The Transmission Owner or Generator Ownerresponsible entity made its Facility Ratings Methodology available to requesting entities for inspection, but within a time period that was greater within more than 21 calendar days but less than or equal to 30-31 calendar days of receipt of after</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Transmission Planners or its Planning Coordinators. (R3)</p> <p>OR</p> <p>The Transmission Owner or Generator Ownerresponsible</p> | <p>The Transmission Owner or Generator Owner did not make its methodology available to one of its requesting Reliability Coordinators or its Transmission Operators. (R3)</p> <p>The Transmission Owner or Generator Ownerresponsible entity made its Facility Rating Methodology available for</p> | <p>The Transmission Owner or Generator Ownerresponsible entity received requests, but did not failed to make its Facility Ratings Methodology available to any of the requesting entities for inspection within in more than 60-51 calendar days of a receipt of after a request. (R3)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|--------------------|--|--|---|---|
| | <p>a request— (R3)</p> | <p>entity made its <u>Facility Ratings Methodology</u> available for inspection, but within a time period that was greater than within 30 <u>31</u> calendar days but less than or equal to 45 <u>41</u> calendar days of receipt of a <u>after a</u> request.</p> | <p>inspection, but within a time period that was greater <u>within more</u> than 45 <u>41</u> calendar days but less than or equal to 60 <u>51</u> calendar days of receipt of <u>after</u> a request.</p> | |
| <p><u>R4R5</u></p> | <p>The Transmission Owner or Generator Owner <u>responsible entity</u> provided a <u>complete</u> response to comments on its Facility Ratings Methodology, but the response was provided in more than 45 <u>calendar</u> days but less than or equal to <u>960</u> <u>calendar</u> days after the comments were received a <u>request</u>. (R4R5)</p> | <p><u>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</u></p> <p><u>OR</u></p> <p>The Transmission Owner or Generator Owner <u>responsible entity</u> provided <u>an on-time</u> <u>a</u> response to comments on its Facility Ratings Methodology <u>within 45 calendar days, and</u> but the response <u>indicated that a change will not be made to the Facility Ratings Methodology but did not indicate why no change will be made.</u> was missing one of the following: An indication of whether changes will be made <u>OR</u> If no change will be made, the reason why no change will be</p> | <p>The Transmission Owner or Generator Owner <u>responsible entity</u> provided a response to comments on its Facility Ratings Methodology, but the response was provided in more than 45 <u>70</u> <u>calendar</u> days but less than ore equal to <u>980</u> <u>calendar</u> days after <u>a request</u>, the comments were received, and the response was missing one of the following: An indication of whether changes will be made</p> <p><u>OR</u></p> <p><u>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings Methodology.</u> (R5) If no change will be made, the reason why no change will be made. (R4)</p> | <p>The Transmission Owner or Generator Owner <u>responsible entity</u> did not <u>failed to</u> provide any a response <u>as required in more than</u> to comments on its Facility Ratings Methodology <u>within 90</u> <u>80</u> calendar days <u>after the comments were received.</u> (R4R5)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|----------|--|---|---|---|
| | | made. (R4R5) | | |
| R5R 6 | The Transmission Owner or Generator Owner responsible entity developed failed to <u>establish</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for and at least one rating, but less than 5% or less of its solely owned and jointly owned Facilities.</u> , of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) | The Transmission Owner or Generator Owner responsible entity <u>failed to establish developed</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for more than but 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities.</u> of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) | The Transmission Owner or Generator Owner responsible entity <u>failed to establish developed</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for but more than 10% or more, but less than up to (and including) 15% of its solely owned and jointly owned Facilities.</u> of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) | The Transmission Owner or Generator Owner responsible entity <u>failed to establish developed</u> Facility Ratings consistent with the associated <u>Facility Ratings Methodology for but more than 15% of its solely owned and jointly owned Facilities.</u> or more of the ratings reviewed were inconsistent with the associated Facility Rating Methodology. (R5R6) |
| R6R 7 | The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by up to, but less than, 15 calendar days. (R6R7) | The Transmission Owner or Generator Owner provided all of its Facility Ratings on schedule to all but one of the requesting entities but the Facility Ratings provided to one of the required entities were incomplete. OR The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by <u>more than</u> 15 calendar days or more but less than <u>or equal to</u> | The Transmission Owner or Generator Owner provided some Facility Ratings on schedule to all of the requesting entities but the Facility Ratings provided to the following entities were incomplete: – Planning Coordinators and Transmission Planners, or – Reliability Coordinators and Transmission Operators OR The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one | The Transmission Owner or Generator Owner did not provide any of its Facility Ratings to the following entities: – Planning Coordinators and Transmission Planners, or – Reliability Coordinators and Transmission Operators OR The Transmission Owner or Generator Owner responsible entity provided all of its Facility Ratings to all of the requesting entities but missed meeting one or more of the schedules by <u>more than 35</u> 45 calendar days or |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|-----------|---|---|--------------------------------------|
| | | 25 30 calendar days. (R6 R7) | or more of the schedules by <u>more than 25</u> 30 calendar days or more but less than <u>ore equal to 35</u> 45 calendar days. (R6 R7) | more. (R6 R7) |



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Comment Period Open

August 10–September 9, 2009

Now available at: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Project Name:

2009-06: Facility Ratings

Due Date and Submittal Information:

The comment period is open **until 8 p.m. EDT on September 9, 2009**. Please use this [electronic form](#) to submit comments. If you experience any difficulties in using the electronic form, please contact Lauren Koller at Lauren.Koller@nerc.net. An off-line, unofficial copy of the comment form is posted on the project page:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html.

Content for Comment Period:

The Facility Ratings Standard Drafting Team is seeking comments on its second draft of standard FAC-008-2 — Facility Ratings and its associated Standards Authorization Request (SAR).

The drafting team revised the standard and SAR to address stakeholder comments submitted during the first comment period.

Other Materials Posted:

- An associated implementation plan and
- The drafting team's consideration of industry comments received during the first comment period

Project Background:

The revisions to these two standards will result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines attached to this SAR and to two of the three applicable FERC directives in Order 693.

The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except 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 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 Requirement R7.

Applicability of Standards in Project:

Transmission Owner
Generator Owner

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*



Individual or group. (39 Responses)
Name (25 Responses)
Organization (25 Responses)
Group Name (14 Responses)
Lead Contact (14 Responses)
Question 1 (36 Responses)
Question 1 Comments (39 Responses)
Question 2 (36 Responses)
Question 2 Comments (39 Responses)
Question 3 (34 Responses)
Question 3 Comments (39 Responses)
Question 4 (35 Responses)
Question 4 Comments (39 Responses)
Question 5 (33 Responses)
Question 5 Comments (39 Responses)
Question 6 (0 Responses)
Question 6 Comments (39 Responses)

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|--|
| |
| Individual |
| Ed Stein |
| Self-retired |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Individual |
| James Starling |
| SCE&G |
| No |
| The wording in the standard still does not define the boundaries of the equipment to be evaluated in establishing the facility rating. Are we to assume that "the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer" means all equipment in the primary and secondary systems (for nuclear) and everything from the fuel source (or energy source for hydros) to the generator terminals, etc? Also, it is difficult to interpret in R1.1 whether "contain at least one of the following:" means one of the following elements in each subrequirement or one of the subrequirements as a whole. If the latter was the intent then R1.1 should be clarified to read: "The documentation shall contain design/construction information and/or Operational Information as follows:" |
| Yes |
| |
| Yes |
| The boundaries of the blackbox must be clearly defined |
| Yes |
| |

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|---|
| Yes |
| |
| Phil Kleckly: In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 state that the methodology shall be consistent with at least one of 2.1.1, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3. |
| Group |
| SERC Planning Standards Subcommittee |
| Phillip R. Kleckley |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 states that the methodology shall be consistent with at least one of 2.1.2, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3. |
| Group |
| NextEra Energy Resources |
| Benjamin Church |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| For clarification, NextEra Energy Resources (NextEra) would like to see the designation of “step up transformer” changed to “main step up transformer”. Wind turbine generator facilities have multiple step up transformers in the electrical system from a single generator to the point of interconnection. There is a small low voltage step up transformer at each wind turbine and there is a large high voltage main step up transformer which steps the voltage from all the wind turbines at the site voltage up to the transmission voltage level. At an individual wind turbine site, there may be >200 of the smaller step up transformers at the individual wind turbines which all connect to the larger main step up transformer. Wind turbine sites are an intermittent generating asset and the site load is not normally dispatchable. The individual generators are usually not dispatched, but the entire site is operated as a single generating asset. Our method is to rate the entire site as a single generator Facility with the black box boundary at the main step up transformer. By including this additional terminology, it would allow sites with multiple step up transformers in there electrical energy delivery system the latitude to identify the appropriate black box boundary for the generator Facility. |
| Yes |
| For clarification, NextEra would like to see the words “the point of interconnection” changed to “the point of interconnection or change in ownership”. We have some sites where the point of interconnection is defined separately from the point on change in ownership. Although it may be implied that the point of interconnection is actually a point of change in ownership, we think the clarification is warranted. |
| |
| Group |

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|--|
| Southern Company |
| Hugh Francis |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| The wording in R3 "(except for those generating unit Facilities addressed in R1)" should say (except for those generating unit Facilities addressed in R1 and R2)." The wording in R3.2 needs to be changed from "Equipment Ratings identified in R2.1" to "Equipment Ratings identified in R3.1." To make the wording in the requirements consistent, the wording in R3.2 should be changed from "Equipment Ratings identified in R2.1" to read "Equipment Ratings identified in Requirement R3, Part 3.1." Remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1 in the VSLs for R2. Requirement 2.1 states that the methodology shall with at least one of 2.1.1, 2.1.2, and 2.1.3. Remove 3.1.1, 3.1.2, and 3.1.3 and replace them with 3.1 in the VSLs for R3. Requirement 3.1 states that the methodology shall with at least one of 3.1.1, 3.1.2, and 3.1.3. The VSL table needs to be corrected to show R4 in the R# column rather than having two R3s. |
| Individual |
| Baj Agrawal |
| Arizona Public Service Co. |
| No |
| The term "Facility Rating" in R1 is still vague. It is still not clear whether it includes auxiliaries or not. If the turbine generator rating is of interest, it should simply say so. There are also additional issues that are not touched on with this rating requirement where the rating is not limited by the turbine generator or a component but by regulatory environmental issues. |
| Yes |
| But should also explicitly allow for the regulatory environmental constraints which may be long term vs. the identified short term derate as indicated by operational limitations. |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Group |
| Northeast Power Coordinating Council |
| Guy Zito |
| No |
| We disagree with the proposal in Requirement R1 that the selection of the point of demarcation between the Generator Owner and Transmission Owner be left up to the Generator Owner. Requirement R1 reads: "R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). (Highlighting added). NERC should leave this up to the Generator Owners and Transmission Owners to establish jointly, more specifically to decide the "boundary", because each situation is different in the way assets are divided up, and the |

| |
|---|
| ownership line drawn. |
| Yes |
| Yes |
| No |
| The rating of the generator should be at the generator terminals, with the requirement that the unit service load (if drawn between the generator terminals and the low side of the generator step-up transformer) and the generator step-up transformer impedances are explicitly shown. If measured at the high side of the generator step-up transformer, the rating is a net output rating that may not reflect the physical limits and characteristics of the generator, unit service load, and transformer losses. |
| Yes |
| On page 1, regarding paragraph 1.2 under R1., the words "do not exceed" should be replaced with "correspond to". On page 2, regarding paragraph 2.3 under R2., the word "respect" should be replaced with "correspond to". On page 2, regarding R3., the second "each" in the first line should be deleted. Also, in sub-paragraph 3.2 on p. 3, the reference to R2.1 should be a reference to R3.1. The sub-paragraphs under 2.2 and 3.2 repeat each other word for word with only one word of difference between Requirements R2 and R3: the use of "Generator" instead of "Transmission". Suggest that those two Requirements be reviewed to see if they can be combined to eliminate duplication. Sub-paragraph 3.4.1 on page 3 has no wording associated with it. |
| Individual |
| Alice Murdock |
| Xcel Energy |
| No |
| R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. We feel the draft standard is more ambiguous in this area than in the current version. The standard should specify if its scope includes only the electrical equipment from the generator out to the point of interconnection, or if it also includes the prime mover and all mechanical equipment behind it. We strongly feel that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, having the GO chose the boundary for the plant facility creates more ambiguity and inconsistency. Rating responsibility should be based on ownership and not the selection of any particular boundary. |
| No |
| Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO. |
| No |
| The location of the boundary of the Facility ("black-box") has no bearing on the reliability of the rating. |
| Yes |
| Xcel Energy did not see this as an issue (we have always used the high side of the GSU Transformer as the boundary in the past). |
| Yes |
| A. FERC approval aside, Xcel Energy believes that facility verification, as required under NERC-approved standards MOD-024 and MOD-025, provides a more accurate value for the purposes of planning and operation. Xcel Energy has been following the guidelines of the Regional Entities in its three operating regions (MRO, SPP, and WECC) for performing these verifications for multiple decades. It is the information obtained from the verification tests that is used for reporting to the |

NERC GADS system, to Transmission Planning for use in load flow studies, and to Transmission Operations for real-time operation. The nameplate design value that results from a FAC-008 analysis is of value only for long-range planning prior to construction or operation of a new facility. We fail to see how reliability is enhanced when there are two different numbers being reported that describe the same facility rating. Therefore, we feel R1 should be deleted from the standard. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008. B. If R1 is retained, R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says "The documentation shall contain at least one of the following". It doesn't say "the documentation shall contain BOTH of the following". Since compliance is evaluated at the requirement level, and both of these are NOT required, we feel they should be bulleted. C. If R2 is retained, we feel the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1 above. The corresponding measures should also be modified to correctly reflect that not "all of the items" in Parts 2.1 and 3.1 have to be included. D. Xcel previously expressed concerns about documentation of the basis for ratings of older facilities. We appreciate the drafting team's response which indicated that this "Standard does not require the recreation of data that is no longer available or no longer accessible for any reason." However, no modifications were made to the requirements to clarify this. We feel the standard should be clear about expectations. Since it is not understood how, or if, the drafting team's responses could be used to clarify the intent of the requirement during an audit, we feel it is critical that specific language be included. If R2 is retained, we recommend either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2. E. The phrase "Ratings of the Equipment" used in R2.1 and 3.1 should be modified, as there is no such term in the NERC glossary. "Rating" and "Equipment Rating" are both defined terms. Yet, "Equipment" and "Ratings of Equipment" are not. F. The reference to R2.1 in R3.2 should be changed to R3.1. G. In R7, recommend changing "as scheduled" to "as requested".

Group

PacifiCorp

Sandra Shaffer

Yes

Yes

Yes

Yes

Yes

Please explain 2.2.4 and the footnote below. This is unclear. 2.2.4. Operating limitations.1 1 Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Group

Electric Market Policy

Jalal Babik

No

1 – Requirement R1 - The wording in the parentheses should be revised to read: "consistent with the change in ownership between the Generator and Transmission Owners." This will ensure there are no gaps between GO and TO owned equipment and reinforces the SDT's stated view in paragraph 3 on page 2 of 5. 2 – Requirement R1.1.1 – The phrase "an established engineering practice having a successful implementation record" should be replaced, for clarity, with the language used in Requirements R2.1.3 and R3.1.3: "A practice that has been verified by testing or engineering analysis." 3 – Requirement R1.1.2 – It is not clear how testing could be used as a means of documentation for determining a Facility Rating. We don't agree that testing is an appropriate means to rate a facility. It may validate the rating, but then again may prove it wrong (failure). We don't see similar language in R3 and we assume it's because the SDT didn't believe it appropriate to develop

transmission ratings through a 'test to fail' methodology. Secondly, we disagree because testing will produce a unit capability that will vary season-to-season. Such tests should not be allowed to exceed the facility rating. Also, if a GO modifies the generator to increase its output, , we suggest that the Facility Rating methodology should be reviewed in advance of scheduling a performance test.

Yes

Yes

As noted in the background material in paragraph 3 on page 2 of 5, this approach “allows latitude for the Generator Owner to define the ‘boundary’ of the generating unit Facility (“black-box”) as either the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer – presumably chosen by the Generator Owner to be consistent with the change in ownership point between the Generator and Transmission Owners.”

No

As noted in Question 1, Requirement 1 should be expanded to include: “consistent with the change in ownership between the Generator and Transmission Owners.”

No

Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3.

1. Applicability – The bullets should be removed and the format should be consistent with the rest of the Standard.

Individual

Kasia Mihalchuk

Manitoba Hydro

Yes

Yes

Yes

Yes

Yes

Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3, R4 or R5. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R7). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R4) jeopardize the reliability of the system? The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction—and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 and Requirement 3.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate

documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Manitoba Hydro recommends that Requirements 2.1, 2.2, 3.1 and 3.2 be revised as follows: R2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following: R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. 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 R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3. R2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R2, Part 2.1 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, if available. R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time). R3.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following: R3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating. R3.1.2. 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). R3.1.3. A practice that has been verified by testing or engineering analysis R3.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R3.1.1, R3.2 or R3.1.3. R3.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R3, Part 3.1 including identification of how each of the following were considered: R3.2.1. Equipment Rating standard(s) used in development of this methodology. R3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available. R3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).

Individual

Chifong Thomas

Pacific Gas and Electric Co.

Yes

Yes

Yes

Yes

Yes

Individual

James Stanton

SPS Energy

No

The standard is flawed in its very purpose in that calculated, or "backed into" generator ratings as described in R1.1.1 should never be used in the operation horizon for the reliable operation of the BES. Using the backed into ratings for planning is less dangerous but equally useless since real ratings are readily available. The OPERATION of the BES should make use of the current capability information provided by IRO-004-1 R4, TOP-00202 R13&15, and TOP-003-0 R1. 1.2 "capable of demonstrating consistency..." is ambiguous. Performance testing and periodic capability tests will embody any applicable equipment rating, including the most limiting. 1.2 is a non-sensical statement

| |
|---|
| and should be removed. |
| No |
| Latitude cannot be confused with wider ambiguity. It remains unclear how a backed-into calculation can possibly be superior to actual operational data. |
| No |
| See answer to Question 2. |
| No |
| Seen answer to Question 2. |
| No |
| Assume 2.1.3 is a performance test? 2.2.3 This is unclear and should be revised. Ambient conditions for gas turbine powered generators are represented by an infinite number of points on a curve that plots temperature and humidity. How many of these would comprise an "average"? 2.3 Should be deleted. It does not contribute to reliability. 2.4 Should be split into transmission equipment and generator equipment. There is no need to perpetuate the confusion of the industry in attempting to sort out the NA from the applicable pieces of equipment that apply to Transmission Owners or Generator Owners. 2.4 Is the implication that only electrical equipment is to be considered limiting elements true? What about turbines, gearboxes, cooling systems, scrubber systems, fuel systems, etc? Also, R1 states that the Generator Owner has the option of choosing a scope for its facility that excludes the GSU. This is inconsistent with 2.4 that says transformers shall be included in the scope. Need to pick a direction. |
| Is the facility rating exercise considered an actual "event" that occurs at a certain time on a certain date, much like the RBA in CIP-002-2? Should it be performed periodically? Or is performing the exercise one time sufficient? There is no periodicity in the standard, which contributes to the ambiguity. How many instances of tests or backed-into calculations would satisfy the need to consider ambient conditions? In other words, over a twelve month period a facility can likely have 365 facility ratings depending on conditions. How many of these, if any, would be useful for planning or operations? Also, if it is an event, and the rating exercise took place on a day a cooling tower cell was out of service limiting the facility output by say 15%, then that would be the most limiting piece of equipment, on that day. But the cooling tower cell will be repaired. Would that repair then precipitate another facility rating exercise? In light of other standards requirements that mandate daily reporting of capability and periodic performance tests, the revised FAC-008-2 continues to be irrelevant to Generator Owners and dangerous to the BES if used for operational purposes. Generator Owners should be removed from the applicability for FAC-008-2. |
| Individual |
| Edward Davis |
| Entergy Services, Inc |
| |
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| |
| We note that the consideration of comments to the August comments stated that "The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to "Lower". " However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs. |
| Individual |
| Vladimir Stanisic |
| Ontario Power Generation |
| No |
| Our response to this question would be YES/NO but check boxes do not allow that. The SDT is commended for making a significant step in the right direction and changing the focus of the standard from "Documented Methodologies" towards actual documentation that supports the development of Facility Ratings. Nevertheless, R1 is still burdened with an ambiguous notion of what constitutes a |

"Generation Facility". For example, term "turbine-generator" may be interpreted to exclude hydro-generators. In addition, wording of R1 attempts to provide more flexibility and specificity regarding "Generation Facility" boundaries but in our view actually creates unnecessary confusion and complexity. Instead, we suggest that the SDT should consider using the term "...up to the Point of Interconnection". Here is the definition for Point of Interconnection. FERC Order 661 refers to Order 2003 for this definition so it is presumably the most current. From FERC Order 2003, APPENDIX C "STANDARD LARGE GENERATOR INTERCONNECTION PROCEDURES (LGIP)" including "STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT (LGIA)": Point of Interconnection shall mean the point, as set forth in Appendix A to the Standard Large Generator Interconnection Agreement, where the Interconnection Facilities connect to the Transmission Provider's Transmission System. By adopting the term "Point of Interconnection", FAC – 008-02 would have the boundaries of "Generating Facilities" clearly set and uniformly applied. This would also eliminate the need for R2. The language of the standard would also become consistent with the language of FAC-001-0 and FAC-002-0 that deal with the subject of Facility Connection requirements and plans.

Yes

Yes

No

Please see the response to Q1.

No

R2 is largely redundant as it may apply only to some rare ownership arrangements, few and far between. In our view there is little value in burdening the standard with such a complex set of requirements only to address few odd cases.

Group

Bonneville Power Administration

Denise Koehn

Yes

Yes

Yes

Yes

Yes

Group

Pepco Holdings, Inc. - Affiliates

Richard Kafka

Yes

Yes

Yes

Yes

Yes

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| |
| There are some typographical errors in the draft – Requirement R3.2 includes a reference to Equipment Ratings identified in R2.1. That should be R3.1. Measure M4 refers to a request made in accordance with Requirement 34. That should be Requirement 4. |
| Individual |
| Greg Mason |
| Dynegy Inc. |
| Yes |
| R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify. |
| Yes |
| However, the wording "do not exceed" in R1.2 needs to be replaced by "corresponds to". This is a critical wording change. The new suggested wording is required or the "black box" concept discussed in the Background Section is no longer valid. |
| Yes |
| |
| Yes |
| See Comment on response to Question #1. R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify. |
| No |
| 1. Section 2.2.3 needs to be eliminated. Conductor temperature rather than ambient conditions are typically considered when establishing equipment ratings. 2. The footnote to Section 2.2.4 should be eliminated. It is not practical to develop ratings that take into account the myriad of conditions that could result in "temporary de-ratings" of equipment. In addition, such "temporary de-rating" values would not be used in planning or operational studies. 3. The word "respect" in section R2.3 should be changed to "corresponds to". |
| 1. The word "respect" in Section R3.3 should be changed to "corresponds to". 2. R4 and R5 should require the GO to have both its "documentation" (related to R1) and its Facility Ratings Methodology (related to R2). 3. All of the wording in the "Background Information" section that refers to the facilities between the high side of the GSU and the Point of Interconnection with the utility that are owned by the GO as "Transmission Facilities" should be removed. NERC has not officially classified these "Generator Interconnection Facilities" as "Transmission Facilities". In addition, the recent recommendations of the GOTO NERC Ad Hoc Task Force state that these types of facilities should not be considered "transmission facilities". |
| Individual |
| John Sullivan |
| Ameren |
| No |
| The demarcation point should be the point of interconnection with the transmission system. For example, windfarms may have a 10 mile lead line that should also be included in their facilities. |
| Yes |
| It does provide options. |
| No |
| Typically the Generator facilities are not part of the BES so it is not clear how these ratings would impact reliability planning. |
| No |
| It seems there should be a common point of demarcation. It is not clear what the justification would be for selecting one point over another. It seems that common point should be the Point of Interconnection with the transmission system. |
| : It is difficult to provide a comment when you cannot interpret the question. R1 is about documentation and R2 is about the methodology. The Documentation should support the methodology. |

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| Individual |
| Mark Kuras |
| PJM |
| No |
| Requirement 1 needs to be removed. Other standards that require verification of real and reactive capability should suffice and this requirement is duplicative of those requirements. Even if you don't believe that MOD-024 and MOD-025 sufficiently cover this requirement, a GO should be able to rate it's generator any way it wants as long as it's consistent with its true capability. No methodology should be required. |
| No |
| The requirements of MOD-024 and MOD-025 for validation should be the only basis for rating generators. |
| No |
| R1 still requires ...documentation for determining the facility ratings... That's not a black box approach. R1.1 requires further details that also diverge from a black box approach. |
| Yes |
| |
| Yes |
| |
| This standard attempts to combine rating generators with rating transmission lines. They are two very different types of equipment that have distinctive characteristics which are not comparable and should not be grouped together in this way. The MOD standards handle generators sufficiently and generators should not be forced into the FAC transmission standards. |
| Individual |
| Brent Ingebrigtsen |
| E.ON U.S. |
| No |
| E.ON U.S. believes that in providing more choice R1 actually adds to the ambiguity. Additionally, E.ON U.S. questions whether this requirement will prompt NERC to reconsider past penalties for entities that had utilized actual performance tests to comply with FAC-008/009. |
| Yes |
| |
| Yes |
| |
| No |
| E.ON U.S. believes that this requirement is adequately addressed by R1 and therefore redundant |
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| |
| Group |
| Calpine Corporation |
| Duncan Brown |
| No |
| 1. The proposed limiting of the R1 to turbine-generator units raises the question as to why R1 should apply only to generators operated by a specific type of prime mover. Any generation source (such as diesel-generators), regardless of technology should be subject to the Facility Rating Standard. 2. More importantly, it's not clear what "Facility Ratings" are required by the proposed Standard. There appears to be significant confusion within the industry as to whether the Standard is proposed to require "capacity ratings" of a generating unit as a whole, or whether its scope is limited to the electrical ratings of the electrical equipment from the generator to the point of interconnection with the grid, as indicated by the current definitions of "Facility Ratings" and "Facility" in the NERC |

Glossary of Terms. Clarification is needed as to whether the drafting committee's intent is to require that Facility Ratings be provided that reflect the generating facility's overall electrical output capacity based on evaluation of the numerous non-electrical systems that comprise a generating facility and that may, depending on numerous variables, be the actual limiting factor of the output of the generation facility at any given time. The Drafting team's statement could be read to indicate either interpretation: "The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). If the intent of the proposed Standard is to encompass anything other than the electrical ratings of the equipment from the generator to the point of interconnection. Than a large amount of specific information to delineate the scope of the Requirements in a way that would allow consistent ratings and appropriate enforcement of the Standard would be needed before such a Standard should be submitted.

No

A clear statement of which equipment is to be rated (the electrical equipment from the generator to the point of interconnection?) is needed. If the intent is to require that ratings be required based on anything other than the nameplate or calculated limits of the electrical equipment comprising the generating facility, such intent needs to be clearly stated in the Standard.

No

There is no benefit to evaluating the generation facility as a "Black Box". Ratings of the electrical equipment from the generator to the point of interconnect should be evaluated and the most limiting element based on their electrical characteristics should provide the basis for the electrical rating of the facility. FAC-00802 should not be interpreted to require any non-electrical equipment ratings.

Yes

These points of interconnection are reasonable "cut points" for a generating unit's rating of electrical equipment.

No

R2 properly addresses appropriate ways all electrical components from the generator to the point of interconnection should be rated, which should be the entire scope of the Standard.

The NERC Glossary of Terms Used in Reliability Standards defines the following: Facility – A set of ELECTRICAL equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator, a shunt compensator, transformer, etc.) Facility Rating – The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility. It would seem clear from the above definitions that a Facility Rating would apply ONLY to electrical equipment. For a generation facility, this would exclude the prime mover or other energy source or ancillary equipment that could limit the actual real power output of the Facility. Requirement R 1.1.2 allows a Generator Owner the option of establishing the Facility Rating up to the generator terminals or low or high side terminals of the step up transformer by providing the following documentation: Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analysis. Testing or historical performance isn't sufficient to establish a Facility Rating without knowing the underlying Equipment Rating for each piece of Equipment which comprises the subject portion of the Facility. Since electrical equipment can be operated above its rating for an extended period of time without obvious damage, the fact that a Facility has demonstrated a particular real power flow does not establish that no individual piece of equipment is violating its rating, as required by the definition of Facility Rating. It's possible to upgrade or replace a prime mover such that its capability is above the nameplate rating of the generator. In this instance, running the prime mover at its full capability is above the rating of the generator, unless the generator rating has also been increased, which should then have accompanying documentation. Other than the generator itself, all Equipment that makes up a Generation Facility is included in Transmission Facilities. Since the generator is just another piece of electrical equipment, with ratings for voltage, frequency, current, etc., there's no reason to have separate requirements for Generation Facilities and Transmission Facilities. Based on comments received on the previous draft of the standard, there is a large body who believes that the Facility Rating for generation facilities is its capability to produce real or reactive power. There is also a contingent that believes the Facility Rating for generation facilities is the rating of the most limiting piece of electrical equipment. By inclusion of Requirements R 1.1.1 and R 1.1.2, the drafting team has allowed both definitions to be used at the Generator Owner's discretion. As has also been pointed out in previous comments, the

rating of the most limiting piece of electrical equipment and the capability of the prime mover are likely to be significantly different and are used for entirely different purposes. By allowing either to be provided to various entities as the Facility Rating, the end user does not know what they're being provided. This could lead to erroneous results in planning and subsequent impacts on reliability. It's recommended that the drafting team follow the NERC definition for Facility and Facility Rating and explicitly limit the scope to electrical equipment only. It's recommended that this be clearly described in an appendix attached to the standard to eliminate the confusion that exists today. In addition, the appendix should refer to MOD-024 and MOD-025 as the standards which demonstrate the real and reactive power capability of the Facility, but do not represent a generation facility's Facility Rating.

Individual

Martin Bauer

US Bureau of Reclamation

Yes

The text removed the ambiguity in what was to be included; however, the term "turbine" created a problem in the reference to "Turbine-Generators". To start with, this would only apply to generators that have a turbine as prime mover. Photovoltaic or other non rotary sources would be excluded. This term could be construed as eliminating the power output rating of the turbine and only requiring the generator itself. To remove the potential problem with the use of this term, it is suggested that the section be rewritten as: "Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned power train equipment up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner):"

Yes

Yes

Yes

Yes

The measure M6 needs to be revised to be consistent with the proposed changes in R1. The term "evidence to show its Facility Ratings are consistent" might imply that an independent assessment of consistency is needed. Revising the language as follows would clarify the issue: "Each Transmission Owner and Generator Owner shall have as evidence its Facility Ratings which were developed with the documentation used to determine its Facility Ratings as specified in Requirement R1 or Facility Ratings which were developed utilizing its Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 6)." The Violation Severity Table also needs to be adjusted to remain consistent with R1. The following changes should be incorporated into the R6 for all levels. "The responsible entity failed to establish Facility Ratings utilizing the documentation used to determine its Facility Ratings as specified in R1 or Facility Ratings utilizing Facility Ratings Methodology as specified in R2 for X% or less of its solely owned and jointly owned Facilities. (R6)"

Group

RRI Energy Inc

Tom Bradish

No

We do not feel that this standard should be applied to a generator. This standard clearly should be applied to transmission elements that transmit power and whose rating can be influence by other transmission elements both upstream and down stream of the element being rated. This is a key difference between the generator ratings and transmission system equipment ratings is that the generator only sees operating values that are under the operator's direct control. The generator cannot operate above where the operator tells it to. The transmission system, however, sees operating conditions that are influenced and impacted by so many outside forces that the transmission operator is in a reactionary mode to try to control loadings on elements in the system. Another difference is that if the generator overloads some element in its facility, the maximum impact

to the system is that the generator trips. This is no different an outcome to the transmission system than if the generator tripped for any other reason. A loss of transmission system elements, however, can lead to other issues and in the worst case result in cascading and system separations or blackouts.

No

We do not believe that this standard should be applicable to generators. Every unit is designed with the over sight of a responsible AE that has to hold proper credentials such as ASME boiler certification and must follow a host of regulations. They also must employ PE's that must sign off on the design. The unit must apply for an IA with it's TO so that the TO can do an impact study. The generator must comply with all the requirements mandated by the TO in order to get an IA. The generator will conduct unit commercial tests to insure that unit is capable of the output specified in the unit design contract. Once commercial the output of the generator is continuously monitored by the TOP/RC. This is also true if the generator decides to up grade the unit. It must follow the same path that it did when it built the unit. There can not be any surprises. In addition there are standards and market protocols that require a generator to communicate unit capabilities to the RC/BA or TOP. Most notably in TOP-002-2a requirement R3: Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Also in IRO-005 measure 9: The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1) In order for the RC to comply it will have to get unit capabilities from the generator. Note that this requires the generator to report actual capabilities not a calculated number based on a rating methodology. In areas where there are organized markets a generator must offer the unit to the market operator indicating what the unit is capable of producing for the next day market. Market rules require the generator to immediately report any unit de-rates.

No

See the comments to Question 2 and 3.

No

See the comments to Question 2 and 3.

In the background information the SDT states: "The SDT also notes that FAC-008-1 is FERC approved and enforceable, while neither MOD-024 nor MOD-025 has been approved by FERC. Therefore, the SDT is of the opinion that Generator Owners cannot be 'exempted' from the Requirements, or the intent, of FAC-008 regardless of the views of being possibly duplicative to other standards (either MOD-024 or MOD-025)." We do not agree with this opinion. Once submitted and approved by FERC won't this standard replace any existing FAC-008? Based on the SDT's logic the industry could never propose a change to a FERC approved standard. Standards that are cast in concrete will hinder improvements in reliability because they will not be able to change with technology and operating experience.

Group

FirstEnergy

Sam Ciccone

No

We agree that the new requirements R1 and R2 establish separation from traditional generation facilities and non-generator facilities for equipment owned (solely or jointly) by a generator owner. Furthermore, it appears consistent with the approach being recommended in the draft Generator Requirements at the Transmission Interface report which is presently out for industry comment. However, as written requirement R1 (and to a lesser extent R2) could lead to confusion and we believe that improvement is needed. See our comments in Questions 2 through 6 for further details.

Yes

While R1 provides more latitude, it could lead to unintentional problems. As written, it appears that

the generator owner can unilaterally choose the boundary of the generator facilities that may not align with agreements. We suggest that the requirement be re-written to require the generator owner simply rate all BES facilities that they own up to the point of their transmission interconnection with the host transmission owner. This boundary should be well understood via contracts or agreements between the two parties.

No

We do not agree with this approach because the intent of this standard is not clear with regard to the traditional generator facilities. Is the intent of this standard to ensure that electrical infrastructure owned by the generator owner is sufficiently sized to handle the maximum generation output, or is it to provide a generator rating for use in planning and operations? If it is the latter, the rating that is established may be overstated and not proper for use in planning and operations models, if the rating is based solely on electrical parameters. In R1, there is no consideration for operating limits that may occur due to mechanical limitations (i.e tube leak). The SDT should consider adding to R1 a similar requirement as stated in sub-part 2.2.4 of requirement R2 with regard to operating limitations. This issue could be a problem for an entity that would choose sub-part 1.1.1 over sub-part 1.1.2 in their facility rating determination. For an entity that chooses sub-part 1.1.2 of R1, it is not clear how sub-part 1.2 would be satisfied. The inclusion of 1.2 seems to force an entity to use 1.1.1. To resolve this, we suggest that a minimum timeframe for consecutive operating hours during testing or operational tracking be established that when used in 1.1.2 would also be understood to meet sub-part 1.2. Lastly, sub-part 1.1.2 is lacking in that the item says that operational information "may" be supplemented by engineering analysis. FE suggests that R1 should also mirror sub-parts 2.2.1 through 2.2.3 of requirement R2 to account for engineering analysis that should be required or expected.

No

See our comments in Question 2.

Yes

1. While R7 is similar to language in existing Requirement R2 of FAC-009-0, this requirement is somewhat duplicative of with requirements of MOD-010. Additionally, rather than potentially sending information to four different parties and four different schedules the team should consider a progression of information needed for operations being provided to the TOP and then the TOP updating the RC and for planning the information being provided to the TP and then the TP updating the PC. 2. Under section 4 (Applicability), replace bullets with 4.1 and 4.2 for consistency with other standards.

Individual

Greg Rowland

Duke Energy

Yes

Yes

Yes

Yes

Yes

1. The Background Information statement on the Comment Form describing the "black box" approach generally makes sense. But the references to other equipment limiting generator voltage rating or thermal output are confusing. Also the Implementation Plan should clearly reflect use of the "black box" approach. 2. Requirement R2.3 - change the word "respect" to "reflect". 3. Requirement R2.4 - Delete this requirement because the scope is already established in R2. Importantly, R2.4 could be interpreted to require an entity to provide a master checklist of every kind of device imaginable in order to prove that the scope of equipment addresses everything postulated by the phrase "shall

include, but not limited to". 4. The bulleting format under R3 is mangled. R3.1.3 should be "A practice that has been verified by testing or engineering analysis." 5. R3.3 - change the word "respect" to "reflect". Also strike the phrase "The process by which the Rating of equipment that comprises a Facility is determined." because this IS your Rating Methodology. 6. R3.4 – Strike the phrase "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." because the scope is already established in R3. 7. R3.4.2 should become the new R3.4 8. Measures – Change 2.4 to 2.3 under M2. Delete "3" under M4. Delete "4" under M5. 9. R1 VSLs – Delete the Moderate VSL, because if your documentation doesn't contain either 1.1.1 or 1.1.2 this is the same as not having documentation, which is the Severe VSL. 10. R2 VSLs – In all four VSLs, 2.1.1 through 2.1.3 should be replaced with just 2.1, because 2.1 says your methodology must be consistent with at least ONE of the following (i.e. 2.1.1, 2.1.2 or 2.1.3). Under the High VSL, reword the phrase "The Generator Owner's Facility Rating methodology did not address all the components of Requirement R2, Part 2.4" with this phrase "The Generator Owner's Facility Rating methodology did not all of its solely and jointly owned equipment as required by R2." 11. R3 VSLs – In all four VSLs, 3.1.1 through 3.1.3 should be replaced with just 3.1, because 3.1 says your methodology must be consistent with at least ONE of the following (i.e. 3.1.1, 3.1.2, or 3.1.3). Under the High VSL, 3.4.1 and 3.4.2 should be replaced with just 3.4, for consistency with our comment about R3.4 above. 12. R4 VSLs – Change R# to R4 from R3 (three places). The wording of all four VSLs should be revised to be consistent with the Requirement (Generator Owners may only have documentation and not a methodology). Moderate VSL – insert the phrase "more than" after the word "within" to eliminate the time overlap with the Lower VSL. 13. R7 VSLs – The Lower VSL should be eliminated because the requesting entities may request an unreasonable schedule (i.e. instantaneous request). Suggest moving the Moderate VSL to Lower, the High VSL to Moderate, the Severe VSL to High and cap it at 45 days, and create a new Severe VSL for more than 45 days late.

Individual

Daniel J. Hansen

RRI Energy

No

The requirement is improved, but on the whole, the standard requirements (and accompanying obligations) place equal or more burden upon generator owners for the predicable operation of radial connected facilities, than those imposed upon networked components of the transmission system, where the need for facility ratings is crucial for the ever changing operating conditions of the transmission system.

Yes

No

R2.2 documentation requirements are excessive and unjustifiable for the application of existing facilities that may have successfully and reliably operated for decades without the specific details formally documented on this level.

The primary basis given for maintaining the applicability of generator owners is that FAC-008-1 is a FERC approved standard, even though the standard was written at a time when few were paying attention to the requirements from a legally binding perspective. By this logic, the Standard requirements will last to infinity. There is no disagreement that Generator Owner facility ratings should be rated on a technically sound basis. The standard requirements are centered more on the excessive management of documentation rather than reliability of the BES. It is not justifiable to place the same level of documentation requirements to the radial components of a generator owner as those applied to the network components of a transmission system. The generator facilities are designed as projects by registered professional engineers and are connected to the transmission facility through an application process. Changes in unit output ratings must go through a similar process. Generator owner facilities are not subject to the dynamic and ever-changing conditions of a networked transmission system. Generating owners are expending unproductive resources to reverse engineer documentation of Facility Ratings at locations that have multiple decades of successful operation. No one is seriously questioning the ability of the generating units to deliver their specified

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| outputs except for regulators in an audit conditions, that are finding non-compliance on documentation technicalities that have no material impact on the reliability of the BES. |
| Individual |
| Scott Etnoyer, Director NERC Compliance |
| Constellation Power Source Generation, Inc. |
| No |
| See response to Question 6 below. |
| No |
| See response to Question 6 below. |
| No |
| See response to Question 6 below. |
| Yes |
| See response to Question 6 below. |
| No |
| See response to Question 6 below. |
| Constellation Power Source Generation, Inc. (CPSGI) agrees in principle with the comments filed by RRI Energy in response to questions 1 - 5 above. |
| Individual |
| Scott Barfield-McGinnis |
| Georgia System Operations Corporation |
| Yes |
| Gives the Generator Owner choice of methodology. |
| Yes |
| None. |
| Yes |
| Allows definition of the "Boundaries" of the plant ("Black-box"). |
| Yes |
| Allows for different ownership points. |
| Yes |
| Seems general enough with responsibility on the Generator Owner to fully include all such facilities. |
| None. |
| Group |
| Florida Municipal Power Agency, and its Member Cities, Fort Pierce Utilities Authority and Kissimmee Utility Authority |
| Frank Gaffney |
| No |
| It is still confusing to FMPA whether, for generators, the SDT intends the standard to apply to determining the electrical rating of the electrical equipment, or whether the SDT intends the standard to apply to determining the capability of the mechanical plant. The NERC Glossary of Terms defines a Rating as: The operational limits of a transmission system element under a set of specified conditions," and Equipment Rating as: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner." The mechanical plant has no "equipment" that is limited by "voltage, current, ... real and reactive power flows", but rather the equipment is limited by temperatures, pressures and emissions. The MW capability of the mechanical plant / prime mover is a result of operating to temperature, pressure and emission limits, and is not itself an operational limit; hence, there is no MW "rating" of a prime mover because MW is not the operational limit. So, it seems to FMPA that Facility Ratings are not applicable to the mechanical plant of a generator, but rather, only applicable to the electrical equipment. The only exception to this ought to be the frequency limits (RPM) of the turbine. Another question to ask oneself is: how would such a rating be used? For instance, in the summer, utilities typically use a summer rating to allow |

operators to operate within those ratings. Is the SDT suggesting that a MW rating of the prime mover would be created and operators would limit the output of the plant to that rating? That seems inappropriate since generator operators limit the output of the plant not by MWs, but by temperatures, pressures and emissions, and MW output can change from hour to hour depending on operating conditions. If it is for modeling in a summer peak load flow case, then it is really capability at a specific ambient temperature, specific fuel source, etc. that is desired, and is better handled in MOD-024 because that is not the rating of the facility. FMPA proposes that the Facility Rating of the generator ought to just consider electrical equipment (and the frequency limit of the turbine). Such a rating is a true "operational limit" to the capability of prime mover at any moment in time, such as are temperature, pressure and emission limits.

Yes

No

Not needed if the Facility Rating only applies to electrical equipment

No

If Facility Ratings only apply to electrical equipment of a power plant, then the "black box" is not needed, and the various boundaries to the "black box" are not needed.

Yes

Individual

James H. Sorrels, Jr.

AEP

No

There is additional clarification necessary in regard to whether the requirement references Real (MW) and Reactive (MVAR) Power.

Yes

Yes

Yes

No

Facility Ratings Methodology (FRM) is not a defined NERC term and should, therefore, be defined.

• Suggest adding additional alternative, i.e. "performance history," to R2.1.3. • Footnote 1 and 2 should be included in the requirement if it is to be applicable. • We believe "temporary de-rates" should not be included in the equipment rating for R2.2.4. • R3.2 typo – "R2.1" should be "R3.1." • R3.4.1 should read "thermal capability of relay protective devices" instead of just "relay protective devices", thus deferring to PRC-023 to address relay trip settings, since relay trip settings are not Facility Ratings. • We do not believe that the change shown in R4 was necessary. • R7 – Delete the phrase "modifications to existing Facilities and re-ratings of existing Facilities" since the term "existing Facilities" already covers the ratings that are there today or anything that may alter those ratings on those "existing Facilities" in the future. • How do M1 and M2 differ from one another?

Individual

Angela Battle

Georgia Transmission Corporation

Yes

Yes

Yes

| |
|--|
| |
| Yes |
| |
| Yes |
| |
| Individual |
| Catherine Koch |
| Puget Sound Energy |
| Yes |
| We understand R1 to be pertinent to the generating turbines up to the GSU transformer. R1 is utilized when the GO is the same entity as the TO. Please confirm we've interpreted this correctly. |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| No |
| We believe that Point of Interconnection is not the correct point of demarcation for R2. Point of Ownership seems more appropriate as R2 seems as if it would be utilized by a GO that is not the same as the TO. Point of interconnection is not the same as point of ownership and therefore could imply a GO must determine ratings for transmission facilities between point of ownership and point of interconnection that it doesn't own. |
| |
| Individual |
| Armin Klusman |
| CenterPoint Energy |
| |
| |
| |
| |
| CenterPoint Energy believes Requirement 7 should include Transmission Owner(s) in the listing of associated entities that should be provided with Facility Ratings; that is, a Generator Owner should provide ratings to the associated Transmission Owner. This is needed as a Transmission Owner cannot accurately develop ratings, which must be based on the most limiting series equipment, for its Transmission Line elements without knowing the ratings of series line equipment in an interconnecting switchyard owned by a Generator Owner. |
| Group |
| NERC Standards Review Subcommittee |
| Carol Gerou |
| No |
| A. R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. The MRO NSRS feels the draft standard is more ambiguous in this area than in the current version. The standard should specify that the scope includes only the electrical equipment from the generator out to the point of interconnection. The MRO NSRS strongly feels that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, rating responsibility should be |

based on ownership and not the selection of any particular boundary. B. There are many pieces of equipment that are "behind" the generator that ensure MWs and MVARs are available to the interconnection. R1 states all "turbine generator Facilities" shall have documentation to determine its Facility Ratings. This could be construed as all generators are "turbine" driven, except solar. Does this take into consideration the 20 MVA (individual unit) and 75 MVA (plant/ facility) as stated in the NERC Statement of Compliance Criteria? C. MRO NSRS agrees with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners' facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, the MRO NSRS believes that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners.

No

Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO.

No

A. The location of the boundary of the Facility ("black-box") has no bearing on the reliability of the rating. B. MRO NSRS believes some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach may not be appropriate if there are multiple circuits within the black box. C. Is the black-box approach intended to address instances with distributed generation (e.g. diesels and wind farms) where generators are aggregated through one breaker?

Yes

Yes

A. The MRO NSRS believes the ratings developed in accordance with MOD-024 and MOD-025 are more accurate and appropriate for purposes of modeling, planning and operation. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008. Additionally, FAC-008 R1 appears redundant with what is already required per MOD-024 and MOD-025, and should therefore be deleted. B. R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says "The documentation shall contain at least one of the following". It doesn't say "the documentation shall contain BOTH of the following". Since compliance is evaluated at the requirement level, and both of these are NOT required, the MRO NSRS feels these subrequirements should be bulleted. C. The MRO NSRS feels the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1, above. The corresponding measures should also be modified to correctly reflect that not "all of the items" in Parts 2.1 and 3.1 have to be included. D. Concerns were previously expressed about documentation of the basis for ratings of older facilities. The MRO NSRS appreciates the drafting team's response which indicated that this "Standard does not require the recreation of data that is no longer available or no longer accessible for any reason." However, no modifications were made to the requirements to clarify this. The MRO NSRS feels the standard should be clear about expectations. Since it is not understood how, or if, the drafting team's responses could be used to clarify the intent of the requirement during an audit, the MRO NSRS feels it is critical that specific language be included. Thus, the MRO NSRS recommends either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2. E. The phrase "Ratings of the Equipment" used in R2.1 and R3.1 should be modified, as there is no such term in the NERC Glossary of Terms. "Rating" and "Equipment Rating" are both defined terms. Yet, "Equipment" and "Ratings of Equipment" are not. F. The reference to R2.1 in R3.2 should be changed to R3.1. G. In R7, recommend changing "as scheduled" to "as requested".

Individual

John P. Mayhan

Omaha Public Power District

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| |
| R2.4: Change "but not limited to" to "but not be limited to" to be consistent with R3.4.1. R3, first paragraph: Strike the second occurrence of the word "each". R3.2, first paragraph: It appears that "R2.1" was intended to be "R3.1". M3: Strike the second occurrence of the word "each". M4: It appears that "Requirement 34" was intended to be "Requirement 4". M4, M5, R4, and R5: M4 and M5 are inconsistent with R4 and R5 with regard to Generator Owners. R4 and R5 refer to a Generator Owner's documentation for determining Facility Ratings but not its Facility Ratings Methodology, while M4 and M5 refer to a Generator Owner's Facility Ratings Methodology but not its documentation for determining Facility Ratings. R5: If the first sentence of R5 is to retain the reference to a Generator Owner's documentation for determining Facility Ratings, then it seems like the second sentence of R5 needs to be revised to also include a reference to the Generator Owner's documentation for determining Facility Ratings. M6: Change "documentation used to develop its Facility Ratings" to "documentation for determining its Facility Ratings" to be consistent with the wording used in other parts of the standard. |
| Individual |
| Dan Rochester |
| Independent Electricity System Operator |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| No |
| We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure: a. It has documentation on the rating of that part of equipment associated with the generating unit, and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner. We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including "or the high side terminal of the step up transformer" in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant. |
| Yes |
| |
| (1) R1.1.2: The phrase "any of which may be supplemented by engineering analyses" does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. (2) There are 2 sets of VSLs for R3. We believe the second R3 should read R4. |
| Group |
| IRC Standards Review Committee |
| Ben Li |
| No |
| We agree with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners' facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, we believe that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners. NERC has already assigned this issue to a task team and this drafting team should avoid complicating the issue further. |

| |
|--|
| Yes |
| No |
| We believe some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach is not appropriate. |
| No |
| We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure that: a. It has documentation on the rating of that part of equipment associated with the generating unit (R1), and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner (R2). We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including "or the high side terminal of the step up transformer" in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant. |
| Yes |
| However, it is not clear that it is necessary. Shouldn't a Generation Owner that owns transmission equipment on the high side of the generation step up transformer be registered as a Transmission Owner? |
| a. R1.1.2: The phrase "any of which may be supplemented by engineering analyses" does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. b. There are 2 sets of VSLs for R3. We believe the second R3 should read R4. |
| Individual |
| Joe Knight |
| Great River Energy |
| No |
| GRE appreciates that the standard will allow commissioning data, operational testing and historical performance data to serve as evidence to support its facility rating. Some of the items under 2.2 (ambients, operating limitations) should also apply to the equipment referenced in R1. GRE would like clarification on when Facility Ratings are referring to the turbine generator facilities the standard states that the GO must have documentation for determining these ratings; and when the standard is referring to the ratings of essentially the same facility but from either the generator terminals, low side terminals or high side terminals to the point of interconnection, the documentation for determining these ratings is now called a methodology. Why would it not be a methodology for determining the ratings of the turbine generator facility? It also appears that the GO will now need to have two sets of facility ratings. |
| Yes |
| R1 appears to be giving more latitude for meeting compliance. |
| Yes |
| Yes |
| GRE agrees that the GO must now have two sets of facility ratings. |
| GRE does not believe that the SDT has not achieved their goal of adequately conveying to the GO that they are not required to have two sets of Facility Ratings. It appears that it is a requirement to have two sets of Facility Ratings. One set for the "black box" portion of the plant up to either the generator terminals, the low side of the GSU or the high side of the GSU and one set for from wherever the first set of Facility Ratings ended up to the point of interconnection with the with the TO. |

Consideration of Comments on Draft 2 of the Proposed SAR and Modifications to Facility Ratings Standards — Project 2009-06

The Facility Ratings Standard Drafting Team (FR SDT) thanks all commenters who submitted comments on the second draft of standard FAC-008-2 — Facility Ratings and its associated Standards Authorization Request (SAR). This standard and SAR was posted for a 30-day public comment period from August 10, 2009 through September 9, 2009. Stakeholders were asked to provide feedback on the SAR and standard through a special electronic comment form. There were 39 sets of comments, including comments from more than 90 different people from over 45 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments are publicly posted at the following site:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Several commenters suggested revising the parenthetical in R1 and R2 for clarity. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase and revised the requirement to better reflect the intent of R1 and R2. The Intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

Most stakeholders agree that R1 allows more latitude for the Generator Owner in how it supports the technical basis for its generator Facility Ratings. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. Two stakeholders suggested that the standard should not apply to Generator Owners and that MOD standards more appropriately address the need for generator ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

Several commenters suggested that the black box approach led to more confusion for the requirements rather than clarifying them as the FR SDT intended. Several stakeholders suggested better clarity to the requirements was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of

interconnection. We have revised R1 and R2 (see above). Several stakeholders suggested that Requirement R2 should address both Normal and Emergency Ratings, consistent with Requirement R3. We have revised Requirement R2, Part 2.4.2 to "The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings." Still other stakeholders suggested that more clarity for R2 was needed (see revised R2 above).

Several stakeholders pointed out that there are 2 sets of VSLs for R3. The first set is for R3 and the second set is for R4. The FR SDT corrected this error. Other stakeholders suggested revising Requirement R2, Part 2.3 to change the word "respect" to "reflect" or "corresponds to". The FR SDT disagrees because the intent of Requirement R1, Part 1.2 is to make sure that the most limiting Facility is not exceeded. The rating may be lower for other reasons. Similar comments were received regarding Requirement R3, Part 3.3. Several commenters suggested revisions to the VSLs. The FR SDT agreed and made the suggested revisions unless they were no longer applicable due to revisions to the requirement. It was also suggested that Requirement R7 should include Transmission Owner(s). The FR SDT agrees and has made the revision.

One commenter noted the following: {We note that the consideration of comments to the August comments stated that "The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to "Lower". " However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.}

The FR SDT revised the VRF's to lower for R1 and R2.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

| | |
|--|----|
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| 2. Do you agree that Requirement R1 allows more latitude for the Generator Owner in how he supports the technical basis for his generator Facility Ratings? | 25 |
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| 6. If you have any other comments on this standard that you have not already submitted above, please provide them here. | 54 |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | |
|----|-------|--------------------------|--|------------------|--------------------------|---|---|---|---|---|---|---|----|--|---|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1. | Group | Philip R. Kleckley | SERC Planning Standards Subcommittee | | | X | | | | | | | | | |
| | | Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | |
| | | 1. Bob Jones | Southern Company Services | SERC | 1 | | | | | | | | | | |
| | | 2. David Marler | Tennessee Valley Authority | SERC | 1 | | | | | | | | | | |
| | | 3. John Sullivan | Ameren Services Company | SERC | 1 | | | | | | | | | | |
| | | 4. Charles Long | Entergy | SERC | 1 | | | | | | | | | | |
| | | 5. James Manning | North Carolina Electric Membership Corporation | SERC | 3 | | | | | | | | | | |
| | | 6. Pat Huntley | SERC Reliability Corporation | SERC | 10 | | | | | | | | | | |
| 2. | Group | Guy Zito | Northeast Power Coordinating Council | | | | | | | | | | | | X |
| | | Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | |
| | | 1. Ralph Rufrano | New York Power Authority | NPCC | 5 | | | | | | | | | | |
| | | 2. Alan Adamson | New York State Reliability Council, LLC | NPCC | 10 | | | | | | | | | | |
| | | 3. Gregory Campoli | New York Independent System Operator | NPCC | 2 | | | | | | | | | | |
| | | 4. Roger Champagne | Hydro-Quebec TransEnergie | NPCC | 2 | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | |
|---|------------------------|---|---------------------------------|---------|---|---|---|---|---|---|---|----|--|--|--|--|--|--|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | |
| 5. | Kurtis Chong | Independent Electricity System Operator | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 6. | Sylvain Clermont | Hydro-Quebec TransEnergie | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 7. | Manuel Couto | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 8. | Chris de Graffenried | Consolidated Edison Co. of New York | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 9. | Brian D. Evans-Mongeon | Utility Services | NPCC | 8 | | | | | | | | | | | | | | | | | |
| 10. | Mike Garton | Dominion Resources Services, Inc. | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 11. | Brian L. Gooder | Ontario Power Generation Incorporated | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 12. | Kathleen Goodman | ISO - New England | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 13. | David Kiguel | Hydro One Networks Inc. | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 14. | Michael R. Lombardi | Northeast Utilities | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 15. | Randy MacDonald | New Brunswick System Operator | NPCC | 2 | | | | | | | | | | | | | | | | | |
| 16. | Greg Mason | Dynegy Generation | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 17. | Bruce Metruck | New York Power Authority | NPCC | 6 | | | | | | | | | | | | | | | | | |
| 18. | Chris Orzel | FPL Energy/NextEra Energy | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 19. | Robert Pellegrini | The United Illuminating Company | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 20. | Michael Schiavone | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 21. | Peter Yost | Consolidated Edison Co. of New York, Inc. | NPCC | 3 | | | | | | | | | | | | | | | | | |
| 22. | Gerry Dunbar | Northeast Power Coordinating Council | NPCC | 10 | | | | | | | | | | | | | | | | | |
| 23. | Lee Pedowicz | Northeast Power Coordinating Council | NPCC | 10 | | | | | | | | | | | | | | | | | |
| 3. | Group | Jalal Babik | Electric Market Policy | | X | | X | | X | X | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | | |
| 1. | Louis Slade | SERC | 6 | | | | | | | | | | | | | | | | | | |
| 2. | Mike Garton | NPCC | 5 | | | | | | | | | | | | | | | | | | |
| 4. | Group | Denise Koehn | Bonneville Power Administration | | X | | X | | X | X | | | | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | | | | | | | | | |
| 1. | Thong Trinh | Communications & Grid Modeling | WECC | 1 | | | | | | | | | | | | | | | | | |
| 2. | Jack Allison | Federal Hydro Projects | WECC | 3, 5, 6 | | | | | | | | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------------------------------|---------------|------------------------------------|------------------|---|---|---|---|---|---|---|---|----|---|-------------------|-------------------------|--------|-------------------|-------------------|---------------------------|-----|------------|-----------------|---------------------------|------|------------|-----------------|---------------------------|-----|---|------------------|----------------|-----|---|----------------|-----------------------------------|-----|------|------------------|----------------------------|-----|------------|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Group | Richard Kafka | Pepco Holdings, Inc. - Affiliates | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Jane Verner | Potomac Electric Power Co | RFC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Anne Morgan | Potomac Electric Power Co | RFC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Chih Chow | Potomac Electric Power Co | RFC | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Group | Tom Bradish | RRI Energy Inc | | | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Tom Bradish | RRI Energy Inc | RFC | 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. John Simpson | RRI Energy Inc | WECC | 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Group | Sam Ciccone | FirstEnergy | X | | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 6. Diane Spidle | FE | RFC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Group | Carol Gerou | NERC Standards Review Subcommittee | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Joe DePoorter | Madison Gas & Electric | MRO | 3, 4, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Neal Balu | WPS Corporation | MRO | 3, 4, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Terry Bilke | Midwest ISO Inc. | MRO | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Ken Goldsmith | Alliant Energy | MRO | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Jodi Jenson | Western Area Power Administration | MRO | 1, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Terry Harbour | MidAmerican Energy Company | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | Commenter | Organization | Industry Segment | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Joseph Knight | Great River Energy | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Alice Murdock | Xcel Energy | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Scott Nickels | Rochester Public Utilities | MRO | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Dave Rudolph | Basin Electric Power Cooperative | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Eric Ruskamp | Lincoln Electric System | MRO | 1, 3, 5, 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Group | Ben Li | IRC Standards Review Committee | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1. Matt Goldberg | ISO-NE | NPCC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Bill Phillips | MISO | MRO | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Anita Lee | AESO | WECC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Charles Yeung | SPP | SPP | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Patrick Brown | PJM | RFC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Steve Myers | ERCOT | ERCOT | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. James Castle | NYISO | NPCC | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Individual | Benjamin Church | NextEra Energy Resources | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Individual | Hugh Francis | Southern Company | X | | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Individual | Sandra Shaffer | PacifiCorp | X | | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. | Individual | Duncan Brown | Calpine Corporation | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14. | Individual | Frank Gaffney | Florida Municipal Power Agency, and its Member Cities, Fort Pierce Utilities Authority and Kissimmee Utility Authority | X | | X | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. | Individual | Ed Stein | Self-retired | | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Consideration of Comments on SAR and Draft 2 of FAC-008-2 — Project 2009-06

| | | Commenter | Organization | Industry Segment | | | | | | | | | | |
|-----|------------|--|--|------------------|---|---|---|---|---|---|---|---|----|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 16. | Individual | James Starling | SCE&G | X | | X | | X | X | | | | | |
| 17. | Individual | Baj Agrawal | Arizona Public Service Co. | X | | | | X | | | | | | |
| 18. | Individual | Alice Murdock | Xcel Energy | X | | X | | X | X | | | | | |
| 19. | Individual | Kasia Mihalchuk | Manitoba Hydro | X | | X | | X | X | | | | | |
| 20. | Individual | Chifong Thomas | Pacific Gas and Electric Co. | X | | X | | X | | | | | | |
| 21. | Individual | James Stanton | SPS Energy | | | | | | | | | X | | |
| 22. | Individual | Edward Davis | Energy Services, Inc | X | | X | | X | X | | | | | |
| 23. | Individual | Vladimir Stanisic | Ontario Power Generation | | | | | X | X | | | | | |
| 24. | Individual | Greg Mason | Dynegy Inc. | | | | | X | | | | | | |
| 25. | Individual | John Sullivan | Ameren | X | | X | | X | X | | | | | |
| 26. | Individual | Mark Kuras | PJM | | X | | | | | | | | | |
| 27. | Individual | Brent Ingebrigtsen | E.ON U.S. | X | | X | | X | X | | | | | |
| 28. | Individual | Martin Bauer | US Bureau of Reclamation | | | | | X | | | | | X | |
| 29. | Individual | Greg Rowland | Duke Energy | X | | X | | X | X | | | | | |
| 30. | Individual | Daniel J. Hansen | RRI Energy | | | X | | | | | | | | |
| 31. | Individual | Scott Etnoyer, Director NERC Compliance | Constellation Power Source Generation, Inc. | | | X | | | | | | | | |

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| | | Commenter | Organization | Industry Segment | | | | | | | | | | |
|-----|------------|-------------------------|---|------------------|---|---|---|---|---|---|---|---|----|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 32. | Individual | Scott Barfield-McGinnis | Georgia System Operations Corporation | | | X | X | | | | | | | |
| 33. | Individual | James H. Sorrels, Jr. | AEP | X | | X | | X | X | | | | | |
| 34. | Individual | Angela Battle | Georgia Transmission Corporation | X | | | | | | | | | | |
| 35. | Individual | Catherine Koch | Puget Sound Energy | X | | | | | | | | | | |
| 36. | Individual | Armin Klusman | CenterPoint Energy | X | | | | | | | | | | |
| 37. | Individual | John P. Mayhan | Omaha Public Power District | X | | X | | X | X | | | | | |
| 38. | Individual | Dan Rochester | Independent Electricity System Operator | | X | | | | | | | | | |
| 39. | Individual | Joe Knight | Great River Energy | X | | X | | X | X | | | | | |

1. Do you agree that Requirement R1 removes the ambiguity of and simplifies the Generator Owner obligations for generator Facility Ratings?

Summary Consideration: Several commenters suggested revising the parenthetical which said, “location as specified by the Generator Owner” in R1 and R2 for clarity. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements, indicating that the inclusion of the word, “turbine” was confusing. The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase and revised the requirement to better reflect the intent of R1 and R2. The Intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 1 Comment |
|------------------------|-----------|---|
| Electric Market Policy | No | <p>1 Requirement R1 - The wording in the parentheses should be revised to read: “consistent with the change in ownership between the Generator and Transmission Owners.” This will ensure there are no gaps between GO and TO owned equipment and reinforces the SDT’s stated view in paragraph 3 on page 2 of 5.</p> <p>2 Requirement R1.1.1 The phrase “an established engineering practice having a successful implementation record” should be replaced, for clarity, with the language used in Requirements R2.1.3 and R3.1.3: A practice that has been verified by testing or engineering analysis.</p> <p>3 Requirement R1.1.2 It is not clear how testing could be used as a means of documentation for determining a Facility Rating. We don’t agree that testing is an appropriate means to rate a facility. It may validate the rating, but then again may prove it wrong (failure). We don’t see similar language in R3 and we assume it’s because the SDT didn’t believe it appropriate to develop transmission ratings through a “test to fail” methodology. Secondly, we disagree because testing will produce a unit capability that will vary season-to-season. Such tests should not be allowed to exceed the facility rating. Also, if a GO modifies the generator to increase its output, we suggest that the Facility Rating</p> |

| Organization | Yes or No | Question 1 Comment |
|---|-----------|---|
| | | methodology should be reviewed in advance of scheduling a performance test. |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1 The FR SDT removed the parenthetical phrase and revised the requirement to: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>2 We have revised the phrase to: “An established engineering practice that has been verified by testing or engineering analysis.”</p> <p>3 We agree that it is inappropriate to “test to fail”, however the requirement does not indicate this. Testing is but one way to satisfy the requirement.</p> | | |
| Calpine Corporation | No | <p>1. The proposed limiting of the R1 to turbine-generator units raises the question as to why R1 should apply only to generators operated by a specific type of prime mover. Any generation source (such as diesel-generators), regardless of technology should be subject to the Facility Rating Standard.</p> <p>2. More importantly, it’s not clear what “Facility Ratings” are required by the proposed Standard. There appears to be significant confusion within the industry as to whether the Standard is proposed to require “capacity ratings” of a generating unit as a whole, or whether its scope is limited to the electrical ratings of the electrical equipment from the generator to the point of interconnection with the grid, as indicated by the current definitions of “Facility Ratings” and “Facility” in the NERC Glossary of Terms. Clarification is needed as to whether the drafting committee’s intent is to require that Facility Ratings be provided that reflect the generating facility’s overall electrical output capacity based on evaluation of the numerous non-electrical systems that comprise a generating facility and that may, depending on numerous variables, be the actual limiting factor of the output of the generation facility at any given time. The Drafting team’s statement could be read to indicate either interpretation: “The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current, frequency, real, or reactive power flow). If the intent of the proposed Standard is to encompass anything other than the electrical ratings of the equipment from the generator to the point of interconnection. Then a large amount of specific information to delineate the scope of the Requirements in a way that would allow consistent ratings and appropriate enforcement of the Standard would be needed before such a Standard should be submitted.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1 We have removed the word “turbine” from R1.</p> <p>2 The intent is to identify any equipment whose rating(s) could limit the overall generator Facility Ratings (voltage, current,</p> | | |

| Organization | Yes or No | Question 1 Comment |
|--|-----------|---|
| <p>frequency, real, or reactive power flow). This only includes the electrical facilities.</p> | | |
| <p>NERC Standards Review Subcommittee</p> | <p>No</p> | <p>A. R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. The MRO NSRS feels the draft standard is more ambiguous in this area than in the current version. The standard should specify that the scope includes only the electrical equipment from the generator out to the point of interconnection. The MRO NSRS strongly feels that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, rating responsibility should be based on ownership and not the selection of any particular boundary.</p> <p>B. There are many pieces of equipment that are “behind” the generator that ensure MWs and MVARs are available to the interconnection. R1 states all “turbine generator Facilities” shall have documentation to determine its Facility Ratings. This could be construed as all generators are “turbine” driven, except solar. Does this take into consideration the 20 MVA (individual unit) and 75 MVA (plant/ facility) as stated in the NERC Statement of Compliance Criteria?</p> <p>C. MRO NSRS agrees with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, the MRO NSRS believes that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine’ to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 1 Comment |
|--|-----------|---|
| E.ON U.S. | No | E.ON U.S. believes that in providing more choice R1 actually adds to the ambiguity. Additionally, E.ON U.S. questions whether this requirement will prompt NERC to reconsider past penalties for entities that had utilized actual performance tests to comply with FAC-008/009. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>The FR SDT can not address any past penalty or compliance issues.</p> | | |
| Great River Energy | No | GRE appreciates that the standard will allow commissioning data, operational testing and historical performance data to serve as evidence to support its facility rating. Some of the items under 2.2 (ambient, operating limitations) should also apply to the equipment referenced in R1. GRE would like clarification on when Facility Ratings are referring to the turbine generator facilities the standard states that the GO must have documentation for determining these ratings; and when the standard is referring to the ratings of essentially the same facility but from either the generator terminals, low side terminals or high side terminals to the point of interconnection, the documentation for determining these ratings is now called a methodology. Why would it not be a methodology for determining the ratings of the turbine generator facility? It also appears that the GO will now need to have two sets of facility ratings. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT contends that ambient and operating limitations are already covered implicitly in engineering analysis. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up</p> | | |

| Organization | Yes or No | Question 1 Comment |
|--|-----------|--|
| <p>transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| <p>Florida Municipal Power Agency, and its Member Cities</p> | <p>No</p> | <p>It is still confusing to FMPA whether, for generators, the SDT intends the standard to apply to determining the electrical rating of the electrical equipment, or whether the SDT intends the standard to apply to determining the capability of the mechanical plant. The NERC Glossary of Terms defines a Rating as: "The operational limits of a transmission system element under a set of specified conditions," and Equipment Rating as: "The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner." The mechanical plant has no "equipment" that is limited by "voltage, current, "real and reactive power flows", but rather the equipment is limited by temperatures, pressures and emissions. The MW capability of the mechanical plant / prime mover is a result of operating to temperature, pressure and emission limits, and is not itself an operational limit; hence, there is no MW "rating" of a prime mover because MW is not the operational limit. So, it seems to FMPA that Facility Ratings are not applicable to the mechanical plant of a generator, but rather, only applicable to the electrical equipment. The only exception to this ought to be the frequency limits (RPM) of the turbine. Another question to ask oneself is: how would such a rating be used? For instance, in the summer, utilities typically use a summer rating to allow operators to operate within those ratings. Is the SDT suggesting that a MW rating of the prime mover would be created and operators would limit the output of the plant to that rating? That seems inappropriate since generator operators limit the output of the plant not by MWs, but by temperatures, pressures and emissions, and MW output can change from hour to hour depending on operating conditions. If it is for modeling in a summer peak load flow case, then it is really capability at a specific ambient temperature, specific fuel source, etc. that is desired, and is better handled in MOD-024 because that is not the rating of the facility. FMPA proposes that the Facility Rating of the generator ought to just consider electrical equipment (and the frequency limit of the turbine). Such a rating is a true "operational limit" to the capability of prime mover at any moment in time, such as are temperature, pressure and emission limits.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word "turbine" to clarify that the requirement only applies to electrical facilities.</p> | | |
| <p>Ontario Power</p> | <p>No</p> | <p>Our response to this question would be YES/NO but check boxes do not allow that. The SDT is</p> |

| Organization | Yes or No | Question 1 Comment |
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| Generation | | <p>commended for making a significant step in the right direction and changing the focus of the standard from “Documented Methodologies” towards actual documentation that supports the development of Facility Ratings. Nevertheless, R1 is still burdened with an ambiguous notion of what constitutes a “Generation Facility”. For example, term “turbine-generator” may be interpreted to exclude hydro-generators. In addition, wording of R1 attempts to provide more flexibility and specificity regarding “Generation Facility” boundaries but in our view actually creates unnecessary confusion and complexity. Instead, we suggest that the SDT should consider using the term “up to the Point of Interconnection”. Here is the definition for Point of Interconnection. FERC Order 661 refers to Order 2003 for this definition so it is presumably the most current. From FERC Order 2003, APPENDIX C “STANDARD LARGE GENERATOR INTERCONNECTION PROCEDURES (LGIP)” including “STANDARD LARGE GENERATOR INTERCONNECTION AGREEMENT (LGIA)”: Point of Interconnection shall mean the point, as set forth in Appendix A to the Standard Large Generator Interconnection Agreement, where the Interconnection Facilities connect to the Transmission Provider’s Transmission System. By adopting the term “Point of Interconnection”, FAC-008-02 would have the boundaries of “Generating Facilities” clearly set and uniformly applied. This would also eliminate the need for R2. The language of the standard would also become consistent with the language of FAC-001-0 and FAC-002-0 that deal with the subject of Facility Connection requirements and plans.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Xcel Energy | No | <p>R1 says that the documentation of the facility rating includes everything up to the generator terminals, or low side GSU Transformer terminals, or high side GSU Transformer terminals. This implies, but does not directly state, that all of the equipment behind the generator (e.g. the turbine, boiler, pumps, fans, pulverizers, conveyor belts, etc.) must be given a rating. We feel the draft standard is more ambiguous in this area than in the current version. The standard should specify if</p> |

| Organization | Yes or No | Question 1 Comment |
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| | | <p>its scope includes only the electrical equipment from the generator out to the point of interconnection, or if it also includes the prime mover and all mechanical equipment behind it. We strongly feel that it should be limited to the electrical equipment between the generator and the point of interconnection. In addition, having the GO chose the boundary for the plant facility creates more ambiguity and inconsistency. Rating responsibility should be based on ownership and not the selection of any particular boundary.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1 to clarify that the requirement only applies to electrical facilities and removed the parenthetical that included the language referencing the Generator Owner’s authority to choose the boundary for the plant facility. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| PJM | No | <p>Requirement 1 needs to be removed. Other standards that require verification of real and reactive capability should suffice and this requirement is duplicative of those requirements. Even if you don't believe that MOD-024 and MOD-025 sufficiently cover this requirement, a GO should be able to rate it's generator any way it wants as long as it's consistent with its true capability. No methodology should be required.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the</p> | | |

| Organization | Yes or No | Question 1 Comment |
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| <p>Transmission Owner that contains all of the following. R1 does not require a methodology and a GO is free to rate its generator any way it wants. That rating has to be documented.</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q6 below.</p> | | |
| Ameren | No | The demarcation point should be the point of interconnection with the transmission system. For example, windfarms may have a 10 mile lead line that should also be included in their facilities. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>R2 applies to the 10 mile lead line that you mention.</p> | | |
| RRI Energy | No | The requirement is improved, but on the whole, the standard requirements (and accompanying obligations) place equal or more burden upon generator owners for the predicable operation of radial connected facilities, than those imposed upon networked components of the transmission system, where the need for facility ratings is crucial for the ever changing operating conditions of the transmission system. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. R2 and R3 are equivalent requirements that apply to different entities.</p> | | |
| SPS Energy | No | The standard is flawed in its very purpose in that calculated, or "backed into" generator ratings as described in R1.1.1 should never be used in the operation horizon for the reliable operation of the |

| Organization | Yes or No | Question 1 Comment |
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| | | <p>BES. Using the backed into ratings for planning is less dangerous but equally useless since real ratings are readily available. The OPERATION of the BES should make use of the current capability information provided by IRO-004-1 R4, TOP-00202 R13&15, and TOP-003-0</p> <p>R1. 1.2 "capable of demonstrating consistency..." is ambiguous. Performance testing and periodic capability tests will embody any applicable equipment rating, including the most limiting. 1.2 is a non-sensical statement and should be removed.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to provide documentation on generator facility ratings for planning (hence the “long-term planning: time horizon.) The day-to-day capability information in the other standards that you mention are real-time standards.</p> <p>We have revised Requirement R1, Part 1.2 to: “The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.”</p> | | |
| Arizona Public Service Co. | No | <p>The term “Facility Rating” in R1 is still vague. It is still not clear whether it includes auxiliaries or not. If the turbine generator rating is of interest, it should simply say so. There are also additional issues that are not touched on with this rating requirement where the rating is not limited by the turbine generator or a component but by regulatory environmental issues.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>Requirement R2, Part 2.2.4 and Requirement R3, Part R3.2.4 call for the ratings methodology to include “operating limitations” which could include, but is not limited to, regulatory or environmental issues.</p> | | |
| SCE&G | No | <p>The wording in the standard still does not define the boundaries of the equipment to be evaluated in establishing the facility rating. Are we to assume that "the Facility Ratings of its solely and jointly</p> |

| Organization | Yes or No | Question 1 Comment |
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| | | <p>owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer" means all equipment in the primary and secondary systems (for nuclear) and everything from the fuel source (or energy source for hydros) to the generator terminals, etc?</p> <p>Also, it is difficult to interpret in R1.1 whether "contain at least one of the following:" means one of the following elements in each subrequirement or one of the subrequirements as a whole. If the latter was the intent then R1.1 should be clarified to read: "The documentation shall contain design/construction information and/or Operational Information as follows:"</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>We have also removed the word "turbine" from the requirement.</p> <p>Requirement R1, Part 1.1 means to apply either Part 1.1.1 or Part 1.1.2. or both Part 1.1.1 and Part 1.1.2. It is up to the Generator Owner to decide.</p> | | |
| AEP | No | There is additional clarification necessary in regard to whether the requirement references Real (MW) and Reactive (MVAR) Power. |
| <p>Response: The FR SDT thanks you for your comment. Facility Rating is a defined term: "The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility." The FR SDT does not feel that any further clarification is necessary.</p> | | |
| FirstEnergy | No | We agree that the new requirements R1 and R2 establish separation from traditional generation facilities and non-generator facilities for equipment owned (solely or jointly) by a generator owner. Furthermore, it appears consistent with the approach being recommended in the draft Generator Requirements at the Transmission Interface report which is presently out for industry comment. However, as written requirement R1 (and to a lesser extent R2) could lead to confusion and we |

| Organization | Yes or No | Question 1 Comment |
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| | | believe that improvement is needed. See our comments in Questions 2 through 6 for further details. |
| Response: The FR SDT thanks you for your comment. Please see our responses to questions 2-6. | | |
| IRC Standards Review Committee | No | We agree with the concept that each piece of electrical equipment should have a rating and how they are reported will depend on the how the generator owners facilities are modeled in various models. If a step up transformer is modeled separately from the generator, a rating for the step up transformer should be determined individually and reported along with a rating for a generator. However, we believe that R2 may actually create confusion surrounding the issue of NERC registering Generation Owners as Transmission Owners. NERC has already assigned this issue to a task team and this drafting team should avoid complicating the issue further. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” to clarify that the requirement only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Northeast Power Coordinating Council | No | We disagree with the proposal in Requirement R1 that the selection of the point of demarcation between the Generator Owner and Transmission Owner be left up to the Generator Owner. Requirement R1 reads: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned turbine-generator Facility(ies) up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner). (Highlighting added). NERC should leave this up to the Generator Owners and Transmission Owners to establish jointly, more specifically to decide the “boundary”, because each situation is different in the way assets are divided up, and the ownership line drawn. |
| Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have removed the parenthetical phrase in R1 that included the language referencing the Generator Owner’s | | |

| Organization | Yes or No | Question 1 Comment |
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| <p>authority to choose the boundary for the plant facility. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> | | |
| RRI Energy Inc | No | <p>We do not feel that this standard should be applied to a generator. This standard clearly should be applied to transmission elements that transmit power and whose rating can be influence by other transmission elements both upstream and down stream of the element being rated. This is a key difference between the generator ratings and transmission system equipment ratings is that the generator only sees operating values that are under the operator’s direct control. The generator cannot operate above where the operator tells it to. The transmission system, however, sees operating conditions that are influenced and impacted by so many outside forces that the transmission operator is in a reactionary mode to try to control loadings on elements in the system. Another difference is that if the generator overloads some element in its facility, the maximum impact to the system is that the generator trips. This is no different an outcome to the transmission system than if the generator tripped for any other reason. A loss of transmission system elements, however, can lead to other issues and in the worst case result in cascading and system separations or blackouts.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> | | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| Georgia Transmission Corporation | Yes | |

| Organization | Yes or No | Question 1 Comment |
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| Independent Electricity System Operator | Yes | |
| Manitoba Hydro | Yes | |
| NextEra Energy Resources | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. - Affiliates | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| Georgia System Operations Corporation | Yes | Gives the Generator Owner choice of methodology. |
| Response: The FR SDT thanks you for your comment. | | |
| Dynergy Inc. | Yes | R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify. |
| Response: The FR SDT thanks you for your comment. Based on other comments, the FR SDT has made some clarifying modifications to R1 and the additional comma proposed is no longer needed. The modifications made to R2 clarify that the intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical | | |

| Organization | Yes or No | Question 1 Comment |
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| <p>equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| US Bureau of Reclamation | Yes | <p>The text removed the ambiguity in what was to be included; however, the term “turbine” created a problem in the reference to “Turbine-Generators”. To start with, this would only apply to generators that have a turbine as prime mover. Photovoltaic or other non rotary sources would be excluded. This term could be construed as eliminating the power output rating of the turbine and only requiring the generator itself. To remove the potential problem with the use of this term, it is suggested that the section be rewritten as: “Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned power train equipment up to the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer (location as specified by the Generator Owner):”</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1.</p> | | |
| Puget Sound Energy | Yes | <p>We understand R1 to be pertinent to the generating turbines up to the GSU transformer. R1 is utilized when the GO is the same entity as the TO. Please confirm we’ve interpreted this correctly.</p> |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT does not believe that you have interpreted this correctly. We have revised R1 and R2 to clarify the intent. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 1 Comment |
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2. Do you agree that Requirement R1 allows more latitude for the Generator Owner in how he supports the technical basis for his generator Facility Ratings?

Summary Consideration: Most stakeholders agree that R1 allows more latitude for the Generator Owner in how it supports the technical basis for its generator Facility Ratings. Other stakeholders suggested clarifying that only electrical Facilities were to be rated under the requirements. Two stakeholders suggested that the standard should not apply to Generator Owners and that MOD standards more appropriately address the need for generator ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for establishing generator facility ratings because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.

The FR SDT removed the word “turbine” from R1 as well as the parenthetical phrase which said, “location as specified by the Generator Owner” and revised the requirement to better reflect the intent of R1 and R2. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 2 Comment |
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| Calpine Corporation | No | A clear statement of which equipment is to be rated (the electrical equipment from the generator to the point of interconnection) is needed. If the intent is to require that ratings be required based on anything other than the nameplate or calculated limits of the electrical equipment comprising the generating facility, such intent needs to be clearly stated in the Standard. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical</p> | | |

| Organization | Yes or No | Question 2 Comment |
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| <p>equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| SPS Energy | No | Latitude cannot be confused with wider ambiguity. It remains unclear how a backed-into calculation can possibly be superior to actual operational data. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT does not contend that it is. If a Generator Owner wished to use operational data to document its Facility Rating, that is perfectly acceptable under the requirements (see specifically Requirement R1, Part 1.1, second bullet Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.)</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to question 6 comments.</p> | | |
| NERC Standards Review Subcommittee | No | Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO. |
| Xcel Energy | No | Some of the sub-requirements have been shifted between R1 and R2, but there appears to be no substantial difference in what is ultimately required of the GO. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> | | |

| Organization | Yes or No | Question 2 Comment |
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| <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| PJM | No | <p>The requirements of MOD-024 and MOD-025 for validation should be the only basis for rating generators.</p> |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for establishing generator facility ratings because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> | | |
| RRI Energy Inc | No | <p>We do not believe that this standard should be applicable to generators. Every unit is designed with the over sight of a responsible AE that has to hold proper credentials such as ASME boiler certification and must follow a host of regulations. They also must employ PE's that must sign off on the design. The unit must apply for an IA with it's TO so that the TO can do an impact study. The generator must comply with all the requirements mandated by the TO in order to get an IA. The generator will conduct unit commercial tests to insure that unit is capable of the output specified in the unit design contract. Once commercial the output of the generator is continuously monitored by the TOP/RC. This is also true if the generator decides to up grade the unit. It must follow the same path that it did when it built the unit. There can not be any surprises. In addition there are standards and market protocols that require a generator to communicate unit capabilities to the RC/BA or TOP. Most notably in TOP-002-2a requirement R3: Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Also in IRO-005 measure 9: The Reliability Coordinator shall have and provide upon request evidence that could include, but is not limited to, voice recordings or transcripts of voice recordings, electronic communications, operator logs or equivalent evidence that will be used to determine if it coordinated with Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations including the coordination of pending generation and transmission maintenance outages with Transmission Operators, Balancing Authorities and Generator Operators. (Requirement 9 Part 1) In order for the RC to comply it will have to get unit capabilities from the generator. Note that this requires the generator to report actual capabilities not a calculated number based on a rating methodology. In areas where there are organized markets a generator must offer the unit to the market operator indicating what the unit is capable of producing for the next day market. Market rules require the</p> |

| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| | | generator to immediately report any unit de-rates. |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. The process / documentation that you mention above is an acceptable method to meet R1 and R2.</p> | | |
| AEP | Yes | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| E.ON U.S. | Yes | |
| Electric Market Policy | Yes | |
| Florida Municipal Power Agency, and its Member Cities | Yes | |
| Georgia Transmission Corporation | Yes | |
| Independent Electricity System Operator | Yes | |
| IRC Standards Review Committee | Yes | |
| Manitoba Hydro | Yes | |
| NextEra Energy Resources | Yes | |

| Organization | Yes or No | Question 2 Comment |
|---|-----------|--|
| Northeast Power Coordinating Council | Yes | |
| Ontario Power Generation | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. - Affiliates | Yes | |
| Puget Sound Energy | Yes | |
| RRI Energy | Yes | |
| SCE&G | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of Reclamation | Yes | |
| Arizona Public Service Co. | Yes | But should also explicitly allow for the regulatory environmental constraints which may be long term vs. the identified short term derate as indicated by operational limitations. |
| Response: The FR SDT thanks you for your comment. The items that you mention are covered in Requirement R2, Part 2.2.4 and | | |

| Organization | Yes or No | Question 2 Comment |
|---|-----------|---|
| Requirement R3, Part 3.2.4 – “Operational Limitations” | | |
| Dynergy Inc. | Yes | However, the wording "do not exceed" in R1.2 needs to be replaced by "corresponds to". This is a critical wording change. The new suggested wording is required or the "black box" concept discussed in the Background Section is no longer valid. |
| Response: The FR SDT thanks you for your comment. The point of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. | | |
| Ameren | Yes | It does provide options. |
| Response: The FR SDT thanks you for your comment. | | |
| Georgia System Operations Corporation | Yes | None. |
| Great River Energy | Yes | R1 appears to be giving more latitude for meeting compliance. |
| Response: The FR SDT thanks you for your comment. | | |
| FirstEnergy | Yes | While R1 provides more latitude, it could lead to unintentional problems. As written, it appears that the generator owner can unilaterally choose the boundary of the generator facilities that may not align with agreements. We suggest that the requirement be re-written to require the generator owner simply rate all BES facilities that they own up to the point of their transmission interconnection with the host transmission owner. This boundary should be well understood via contracts or agreements between the two parties. |
| <p>Response: The FR SDT thanks you for your comment. We have removed the parenthetical phrase which said, “location as specified by the Generator Owner.” The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology)</p> | | |

| Organization | Yes or No | Question 2 Comment |
|--|-----------|--------------------|
| of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following: | | |

3. Do you agree that the ‘black-box’ approach (please refer to the background material above) for providing generating unit Facility Ratings provides the Facility ratings that can be “...used in the reliable planning and operation of the Bulk Electric System...?”

Summary Consideration: Several commenters suggested that the black box approach led to more confusion for the requirements rather than clarifying them as the FR SDT intended. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 3 Comment |
|------------------------------------|-----------|---|
| NERC Standards Review Subcommittee | No | <p>A. The location of the boundary of the Facility (“black-box”) has no bearing on the reliability of the rating.</p> <p>B. MRO NSRS believes some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach may not be appropriate if there are multiple circuits within the black box.</p> <p>C. Is the black-box approach intended to address instances with distributed generation (e.g. diesels and wind farms) where generators are aggregated through one breaker?</p> |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| <p>Response: The FR SDT thanks you for your comment.</p> <p>A/B. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>C. yes</p> | | |
| Florida Municipal Power Agency, and its Member Cities | No | Not needed if the Facility Rating only applies to electrical equipment |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |
| PJM | No | R1 still requires ...documentation for determining the facility ratings... That's not a black box approach. R1.1 requires further details that also diverge from a black box approach. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 3 Comment |
|---|-----------|--|
| SPS Energy | No | See answer to Question 2. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Question 2.</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Question 6.</p> | | |
| RRI Energy Inc | No | See the comments to Question 2 and 3. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Question 2 and Question 3.</p> | | |
| Xcel Energy | No | The location of the boundary of the Facility (“black-box”) has no bearing on the reliability of the rating. |
| <p>Response: The FR SDT thanks you for your comment. The boundary is defined by the ownership of the Facility. The black box approach is designed to provide latitude in determining the Facility Ratings for generation facilities. R4 and R5 provide for “peer review” of the ratings to ensure the reliability of the rating.</p> | | |
| Calpine Corporation | No | There is no benefit to evaluating the generation facility as a “Black Box”. Ratings of the electrical equipment from the generator to the point of interconnect should be evaluated and the most limiting element based on their electrical characteristics should provide the basis for the electrical rating of the facility. FAC-00802 should not be interpreted to require any non-electrical equipment ratings. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT agrees with your comments. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have deleted the word, “turbine” from R1 and revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings</p> | | |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|---|
| <p>methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> | | |
| Ameren | No | Typically the Generator facilities are not part of the BES so it is not clear how these ratings would impact reliability planning. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator rating (as defined by the Generator Owner) and R2 includes the documentation of electrical equipment rating from the generator to the point of interconnection. The ratings are used in planning studies.</p> | | |
| IRC Standards Review Committee | No | We believe some of the confusion surrounding the ratings that generators must provide hinges on misunderstanding their intended use. For example, in MOD-024 (MWs) and to some extent MOD-025 (reactive capability), an owner is determining net dependable capability (derived from Regional guides presently and previously) and a black box approach is appropriate. These capabilities (ratings) are primarily for adequacy determination, not specific model interactions. However, ratings in FAC-008 are intended to be used in transmission models and a black box approach is not appropriate. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| FirstEnergy | No | We do not agree with this approach because the intent of this standard is not clear with regard to the traditional generator facilities. Is the intent of this standard to ensure that electrical infrastructure owned by the generator owner is sufficiently sized to handle the maximum generation output, or is it to provide a generator rating for use in planning and operations? If it is the latter, the rating that is established may be overstated and not proper for use in planning and operations models, if the rating is based solely on electrical parameters. |

| Organization | Yes or No | Question 3 Comment |
|---|-----------|---|
| | | <p>In R1, there is no consideration for operating limits that may occur due to mechanical limitations (i.e tube leak). The SDT should consider adding to R1 a similar requirement as stated in sub-part 2.2.4 of requirement R2 with regard to operating limitations. This issue could be a problem for an entity that would choose sub-part 1.1.1 over sub-part 1.1.2 in their facility rating determination. For an entity that chooses sub-part 1.1.2 of R1, it is not clear how sub-part 1.2 would be satisfied.</p> <p>The inclusion of 1.2 seems to force an entity to use 1.1.1. To resolve this, we suggest that a minimum timeframe for consecutive operating hours during testing or operational tracking be established that when used in 1.1.2 would also be understood to meet sub-part 1.2. Lastly, sub-part 1.1.2 is lacking in that the item says that operational information "may" be supplemented by engineering analysis. FE suggests that R1 should also mirror sub-parts 2.2.1 through 2.2.3 of requirement R2 to account for engineering analysis that should be required or expected.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine’ to clarify that the requirement only applies to electrical facilities and not items such as tube leaks. The time horizon for R1 is long term planning, not real-time operations. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> <p>We have also revised Requirement R1, Part 1.2 to address your concern:</p> <p style="padding-left: 40px;">The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.</p> | | |
| AEP | Yes | |
| Arizona Public Service Co. | Yes | |

| Organization | Yes or No | Question 3 Comment |
|---|-----------|--------------------|
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| Dynergy Inc. | Yes | |
| E.ON U.S. | Yes | |
| Georgia Transmission Corporation | Yes | |
| Independent Electricity System Operator | Yes | |
| Manitoba Hydro | Yes | |
| NextEra Energy Resources | Yes | |
| Northeast Power Coordinating Council | Yes | |
| Ontario Power Generation | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. | Yes | |

| Organization | Yes or No | Question 3 Comment |
|--|-----------|--|
| - Affiliates | | |
| Puget Sound Energy | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of Reclamation | Yes | |
| Georgia System Operations Corporation | Yes | Allows definition of the “Boundaries” of the plant (“Black-box”). |
| Response: The FR SDT thanks you for your comment. | | |
| Electric Market Policy | Yes | As noted in the background material in paragraph 3 on page 2 of 5, this approach allows latitude for the Generator Owner to define the “boundary” of the generating unit Facility (“black-box”) as either the generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer “presumably chosen by the Generator Owner to be consistent with the change in ownership point between the Generator and Transmission Owners.” |
| Response: The FR SDT thanks you for your comment. | | |
| SCE&G | Yes | The boundaries of the blackbox must be clearly defined |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned</p> | | |

| Organization | Yes or No | Question 3 Comment |
|--------------|-----------|---|
| | | <p>generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> |

4. Do you agree that the selection of “generator terminals or the low side terminals of the step up transformer, or the high side terminal of the step up transformer” in Requirement R1 provides sufficient latitude to the Generator Owner? If not, provide please suggest other or additional locations.

Summary Consideration: Several stakeholders suggested better clarity to the requirements was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer (depending on whether or not the Generator Owner owns the transformer) and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:

R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 4 Comment |
|--|-----------|---|
| Electric Market Policy | No | As noted in Question 1, Requirement 1 should be expanded to include: “consistent with the change in ownership between the Generator and Transmission Owners.” |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 4 Comment |
|--|-----------|---|
| E.ON U.S. | No | E.ON U.S. believes that this requirement is adequately addressed by R1 and therefore redundant |
| <p>Response: The FR SDT thanks you for your comment. We have revised R1 and R2 to provide clarity.</p> | | |
| Florida Municipal Power Agency, and its Member Cities | No | If Facility Ratings only apply to electrical equipment of a power plant, then the “black box” is not needed, and the various boundaries to the “black box” are not needed. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator rating (as defined by the Generator Owner) and R2 includes the documentation of electrical equipment rating from the generator to the point of interconnection.</p> | | |
| Ameren | No | It seems there should be a common point of demarcation. It is not clear what the justification would be for selecting one point over another. It seems that common point should be the Point of Interconnection with the transmission system. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Ontario Power Generation | No | Please see the response to Q1. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q1.</p> | | |
| FirstEnergy | No | See our comments in Question 2. |

| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q2.</p> | | |
| RRI Energy Inc | No | See the comments to Question 2 and 3. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q2 and Q3.</p> | | |
| SPS Energy | No | See answer to Question 2. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q2.</p> | | |
| Northeast Power Coordinating Council | No | <p>The rating of the generator should be at the generator terminals, with the requirement that the unit service load (if drawn between the generator terminals and the low side of the generator step-up transformer) and the generator step-up transformer impedances are explicitly shown. If measured at the high side of the generator step-up transformer, the rating is a net output rating that may not reflect the physical limits and characteristics of the generator, unit service load, and transformer losses.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Independent Electricity System Operator | No | <p>We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure: a. It has documentation on the rating of that part of equipment associated with the generating unit, and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner. We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including “or the high side terminal of the step up transformer” in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the</p> |

| Organization | Yes or No | Question 4 Comment |
|---|-----------|---|
| | | methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant. |
| IRC Standards Review Committee | No | We believe the expansion of this standard to now have R1 and R2 applicable to the Generator Owner is to ensure that: a. It has documentation on the rating of that part of equipment associated with the generating unit (R1), and, b. It has a documented methodology to determine the facilities between its generating unit and the interconnection point with the Transmission Owner (R2). We believe the determination of the rating for step-up transformers should be covered by R2, not R1. By including “or the high side terminal of the step up transformer” in R1 allows the GO to use documented information as opposed to a determination methodology and be spared from having to provide the methodology basis, assumptions, design criteria, etc. stipulated in R2.1 and R2.2. Beside, this will make a part of R2.4 (which includes transformers) not relevant. |
| <p>Response: The FR SDT thanks you for your comment. It can be covered in either requirement, depending on ownership. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| AEP | Yes | |
| Arizona Public Service Co. | Yes | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| Georgia | Yes | |

| Organization | Yes or No | Question 4 Comment |
|--------------------------------------|-----------|--------------------|
| Transmission Corporation | | |
| Great River Energy | Yes | |
| Manitoba Hydro | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |
| Pepco Holdings, Inc. - Affiliates | Yes | |
| PJM | Yes | |
| Puget Sound Energy | Yes | |
| SCE&G | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of | Yes | |

| Organization | Yes or No | Question 4 Comment |
|---|-----------|---|
| Reclamation | | |
| Georgia System Operations Corporation | Yes | Allows for different ownership points. |
| Response: The FR SDT thanks you for your comment. | | |
| NextEra Energy Resources | Yes | For clarification, NextEra Energy Resources (NextEra) would like to see the designation of “step up transformer” changed to “main step up transformer”. Wind turbine generator facilities have multiple step up transformers in the electrical system from a single generator to the point of interconnection. There is a small low voltage step up transformer at each wind turbine and there is a large high voltage main step up transformer which steps the voltage from all the wind turbines at the site voltage up to the transmission voltage level. At an individual wind turbine site, there may be >200 of the smaller step up transformers at the individual wind turbines which all connect to the larger main step up transformer. Wind turbine sites are an intermittent generating asset and the site load is not normally dispatchable. The individual generators are usually not dispatched, but the entire site is operated as a single generating asset. Our method is to rate the entire site as a single generator Facility with the black box boundary at the main step up transformer. By including this additional terminology, it would allow sites with multiple step up transformers in there electrical energy delivery system the latitude to identify the appropriate black box boundary for the generator Facility. |
| Response: The FR SDT thanks you for your comment. We concur with your suggested revision and have changed R1 to: R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. | | |
| Dynergy Inc. | Yes | See Comment on response to Question #1. R1 needs a comma after the word "terminals" so that it is clear that the GO has three location options to specify. |
| Response: The FR SDT thanks you for your comment. Please see response to Q1. R1 was revised and obviated the need for the comma. | | |
| Constellation Power Source | Yes | See response to Question 6 below. |

| Organization | Yes or No | Question 4 Comment |
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| Generation, Inc. | | |
| Response: The FR SDT thanks you for your comment. Please see response to Q6. | | |
| Calpine Corporation | Yes | These points of interconnection are reasonable “cut points” for a generating unit’s rating of electrical equipment. |
| Response: The FR SDT thanks you for your comment. | | |
| Xcel Energy | Yes | Xcel Energy did not see this as an issue (we have always used the high side of the GSU Transformer as the boundary in the past). |
| Response: The FR SDT thanks you for your comment. | | |

5. Do you agree that Requirement R2 properly addresses the rating responsibilities of generator owned Facilities outside the ‘black box’ that are not addressed (or not able to be addressed) in Requirement R1?

Summary Consideration: Several stakeholders suggested that Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3. We have revised Requirement R2, Part 2.4.2 to “The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.”

Still other stakeholders suggested that more clarity for R2 was needed. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection.

We have revised R2 to:

R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:

| Organization | Yes or No | Question 5 Comment |
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| Ameren | | : It is difficult to provide a comment when you cannot interpret the question. R1 is about documentation and R2 is about the methodology. The Documentation should support the methodology. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |

| Organization | Yes or No | Question 5 Comment |
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| Dynergy Inc. | No | <p>1. Section 2.2.3 needs to be eliminated. Conductor temperature rather than ambient conditions are typically considered when establishing equipment ratings.</p> <p>2. The footnote to Section 2.2.4 should be eliminated. It is not practical to develop ratings that take into account the myriad of conditions that could result in "temporary de-ratings" of equipment. In addition, such "temporary de-rating" values would not be used in planning or operational studies.</p> <p>3. The word "respect" in section R2.3 should be changed to "corresponds to".</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <ol style="list-style-type: none"> Ambient Conditions are part of the underlying assumptions, however this was included in the standard at stakeholder request as a result of a Blackout Recommendation in a prior version of the SAR. Temporary deratings can be used in operational studies. The standard only requires documenting how the methodology considers temporary equipment impairment. An example could be the loss of coolers on a transformer. The point of Requirement R2, Part 2.3 is to make sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not "correspond to". | | |
| SPS Energy | No | <p>Assume 2.1.3 is a performance test</p> <p>2.2.3 This is unclear and should be revised. Ambient conditions for gas turbine powered generators are represented by an infinite number of points on a curve that plots temperature and humidity. How many of these would comprise an "average"</p> <p>2.3 Should be deleted. It does not contribute to reliability.</p> <p>2.4 Should be split into transmission equipment and generator equipment. There is no need to perpetuate the confusion of the industry in attempting to sort out the NA from the applicable pieces of equipment that apply to Transmission Owners or Generator Owners. 2.4 Is the implication that only electrical equipment is to be considered limiting elements true? What about turbines, gearboxes, cooling systems, scrubber systems, fuel systems, etc? Also, R1 states that the Generator Owner has the option of choosing a scope for its facility that excludes the GSU. This is inconsistent with 2.4 that says transformers shall be included in the scope. Need to pick a direction.</p> |
| <p>Response: The FR SDT thanks you for your comment. We have removed the word "turbine" to clarify that Requirement R1 only applies to electrical facilities. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have</p> | | |

| Organization | Yes or No | Question 5 Comment |
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| <p>revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> <p>Requirement 2, Part 2.3 specifies that a “Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility”. The FR SDT believes that analyzing all components of a facility is important to developing a rating for that facility and respecting the most limiting component is necessary for reliable ratings.</p> <p>Requirement R2, Part 2.4 deals with items NOT covered in R1. Having “transformers” shown in Requirement R2, Part 2.4 does not include the GSU.</p> | | |
| AEP | No | Facility Ratings Methodology (FRM) is not a defined NERC term and should, therefore, be defined. |
| <p>Response: The FR SDT thanks you for your comment. We have changed “Methodology” to “methodology”.</p> | | |
| Ontario Power Generation | No | R2 is largely redundant as it may apply only to some rare ownership arrangements, few and far between. In our view there is little value in burdening the standard with such a complex set of requirements only to address few odd cases. |
| <p>Response: The FR SDT thanks you for your comment. As you suggest R2 may only apply in some cases. It is therefore necessary to have R2 to prevent “gaps”.</p> | | |
| Calpine Corporation | No | R2 properly addresses appropriate ways all electrical components from the generator to the point of interconnection should be rated, which should be the entire scope of the Standard. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up</p> | | |

| Organization | Yes or No | Question 5 Comment |
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| <p>transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| RRI Energy | No | R2.2 documentation requirements are excessive and unjustifiable for the application of existing facilities that may have successfully and reliably operated for decades without the specific details formally documented on this level. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT and the majority of industry commenters do not share your assertion that Requirement R2, Part 2.2 documentation is excessive.</p> | | |
| Electric Market Policy | No | Requirement 2 should address both Normal and Emergency Ratings, consistent with Requirement 3. |
| <p>Response: The FR SDT thanks you for your comment. We have revised Requirement R2, Part 2.4.2 to “The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.”</p> | | |
| Constellation Power Source Generation, Inc. | No | See response to Question 6 below. |
| <p>Response: The FR SDT thanks you for your comment. Please see response to Q6.</p> | | |
| Puget Sound Energy | No | We believe that Point of Interconnection is not the correct point of demarcation for R2. Point of Ownership seems more appropriate as R2 seems as if it would be utilized by a GO that is not the same as the TO. Point of interconnection is not the same as point of ownership and therefore could imply a GO must determine ratings for transmission facilities between point of ownership and point of interconnection that it doesn't own. |
| <p>Response: The FR SDT thanks you for your comment. We revised R2 to:</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Arizona Public | Yes | |

| Organization | Yes or No | Question 5 Comment |
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| Service Co. | | |
| Bonneville Power Administration | Yes | |
| Duke Energy | Yes | |
| FirstEnergy | Yes | |
| Florida Municipal Power Agency, and its Member Cities | Yes | |
| Georgia Transmission Corporation | Yes | |
| Independent Electricity System Operator | Yes | |
| Manitoba Hydro | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| Northeast Power Coordinating Council | Yes | |
| Pacific Gas and Electric Co. | Yes | |
| PacifiCorp | Yes | |

| Organization | Yes or No | Question 5 Comment |
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| Pepco Holdings, Inc. - Affiliates | Yes | |
| PJM | Yes | |
| SCE&G | Yes | |
| Self-retired | Yes | |
| SERC Planning Standards Subcommittee | Yes | |
| Southern Company | Yes | |
| US Bureau of Reclamation | Yes | |
| Xcel Energy | Yes | |
| NextEra Energy Resources | Yes | For clarification, NextEra would like to see the words “the point of interconnection” changed to “the point of interconnection or change in ownership”. We have some sites where the point of interconnection is defined separately from the point on change in ownership. Although it may be implied that the point of interconnection is actually a point of change in ownership, we think the clarification is warranted. |
| <p>Response: The FR SDT thanks you for your comment. We revised R2 to:</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | | |
| Great River Energy | Yes | GRE agrees that the GO must now have two sets of facility ratings. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |

| Organization | Yes or No | Question 5 Comment |
|--|-----------|--|
| IRC Standards Review Committee | Yes | However, it is not clear that it is necessary. Shouldn't a Generation Owner that owns transmission equipment on the high side of the generation step up transformer be registered as a Transmission Owner? |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT can not address registration issues and we refer you to the NERC documents on registration.</p> | | |
| Georgia System Operations Corporation | Yes | Seems general enough with responsibility on the Generator Owner to fully include all such facilities. |
| <p>Response: The FR SDT thanks you for your comment.</p> | | |

6. If you have any other comments on this standard that you have not already submitted above, please provide them here.

Summary Consideration: Several stakeholders pointed out that there are 2 sets of VSLs for R3. The first set is for R3 and the second set is for R4. The FR SDT corrected this error.

Other stakeholders suggested revising Requirement R2, Part 2.3 to change the word “respect” to “reflect” or “corresponds to”. The FR SDT disagrees because the intent of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons. Similar comments were received regarding Requirement R3, Part 3.3.

Several commenters suggested revisions to the VSLs. The FR SDT agreed and made the suggested revisions unless they were no longer applicable due to revisions to the requirement. It was also suggested that Requirement R7 should include Transmission Owner(s). The FR SDT agrees and has made the revision.

One commenter noted the following: *We note that the consideration of comments to the August comments stated that “The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. “ However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs.*

The FR SDT revised the VRF’s to lower for R1 and R2.

| Organization | Question 6 Comment |
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| Independent Electricity System Operator | (1) R1.1.2: The phrase “any of which may be supplemented by engineering analyses” does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. (2) There are 2 sets of VSLs for R3. We believe the second R3 should read R4. |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1) We disagree. Removal of the phrase will not allow the flexibility of using engineering analysis for compliance with the requirement.</p> <p>2) We concur and have made the suggested revision.</p> | |
| Electric Market Policy | 1. Applicability - The bullets should be removed and the format should be consistent with the rest of the Standard. |
| <p>Response: The FR SDT thanks you for your comment. Agreed. This change has been made in the revised standard.</p> | |

| Organization | Question 6 Comment |
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| Duke Energy | <ol style="list-style-type: none"> 1. The Background Information statement on the Comment Form describing the “black box” approach generally makes sense. But the references to other equipment limiting generator voltage rating or thermal output are confusing. Also the Implementation Plan should clearly reflect use of the “black box” approach. 2. Requirement R2.3 - change the word “respect” to “reflect”. 3. Requirement R2.4 Delete this requirement because the scope is already established in R2. Importantly, R2.4 could be interpreted to require an entity to provide a master checklist of every kind of device imaginable in order to prove that the scope of equipment addresses everything postulated by the phrase “shall include, but not limited to”. 4. The bulleting format under R3 is mangled. R3.1.3 should be “A practice that has been verified by testing or engineering analysis.” 5. R3.3 - change the word “respect” to “reflect”. Also strike the phrase “The process by which the Rating of equipment that comprises a Facility is determined.” because this IS your Rating Methodology. 6. R3.4 “ Strike the phrase “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.” because the scope is already established in R3. 7. R3.4.2 should become the new R3.4 8. Measures “ Change 2.4 to 2.3 under M2. Delete “3” under M4. Delete “4” under M5. 9. R1 VSLs Delete the Moderate VSL, because if your documentation doesn’t contain either 1.1.1 or 1.1.2 this is the same as not having documentation, which is the Severe VSL. 10. R2 VSLs In all four VSLs, 2.1.1 through 2.1.3 should be replaced with just 2.1, because 2.1 says your methodology must be consistent with at least ONE of the following (i.e. 2.1.1, 2.1.2 or 2.1.3). Under the High VSL, reword the phrase “The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4” with this phrase “The Generator Owner’s Facility Rating methodology did not address all of its solely and jointly owned equipment as required by R2.” 11. R3 VSLs In all four VSLs, 3.1.1 through 3.1.3 should be replaced with just 3.1, because 3.1 says your methodology must be consistent with at least ONE of the following (i.e. 3.1.1, 3.1.2, or 3.1.3). Under the High VSL, 3.4.1 and 3.4.2 should be replaced with just 3.4, for consistency with our comment about R3.4 above. 12. R4 VSLs Change R# to R4 from R3 (three places). The wording of all four VSLs should be revised to be consistent with the Requirement (Generator Owners may only have documentation and not a methodology). Moderate VSL insert the phrase “more than” after the word “within” to eliminate the time overlap with the Lower VSL. 13. R7 VSLs The Lower VSL should be eliminated because the requesting entities may request an unreasonable |

| Organization | Question 6 Comment |
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| | <p>schedule (i.e. instantaneous request). Suggest moving the Moderate VSL to Lower, the High VSL to Moderate, the Severe VSL to High and cap it at 45 days, and create a new Severe VSL for more than 45 days late.</p> |
| | <p>Response: The FR SDT thanks you for your comment.</p> <ol style="list-style-type: none"> 1. Thank you for your comment. We have revised R1 and R2 for clarity on this issue. 2. The point of Requirement R2, Part 2.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “correspond to”. 3. This corresponds to Requirement R3, Part 3.4 for transmission equipment. Stakeholder consensus indicates that Requirement R2, Part 2.4 should be retained. 4. We have corrected the format. 5. The point of Requirement R3, Part 3.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “reflect”. The phrase that you suggest deleting is actually Requirement 3, Part 3.4 and not a part of Requirement 3, Part 3.3. It is the lead in for Parts 3.4.1 and 3.4.2 and should remain in the standard. 6. Stakeholder consensus indicates that Requirement R3, Part 3.4 should be retained. 7. Requirement R3, Part 3.4 was retained and thus Requirement R3 Part 3.4.2 shall remain. 8. Measures were revised to be consistent with revisions to the requirements. 9. The documentation could include an analysis of the most limiting facilities but not address either Part 1.1.1 or 1.1.2. We will retain the moderate VSL. 10. We revised the VSLs as suggested except for the High VSL. There are now 2 parts for Requirement R2, Part 2.4, so the High VSL is appropriate as written. 11. We revised the VSLs as suggested and to be consistent with the requirement revisions. 12. We revised the VSLs as suggested and to be consistent with the requirement revisions. 13: The FR SDT disagrees with removing the lower VSL. |
| <p>Dynegy Inc.</p> | <ol style="list-style-type: none"> 1. The word "respect" in Section R3.3 should be changed to "corresponds to". 2. R4 and R5 should require the GO to have both its "documentation" (related to R1) and its Facility Ratings Methodology (relate to R2). 3. All of the wording in the "Background Information" section that refers to the facilities between the high side of the GSU and the Point of Interconnection with the utility that are owned by the GO as "Transmission Facilities" should be |

| Organization | Question 6 Comment |
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| | <p>removed. NERC has not officially classified these "Generator Interconnection Facilities" as "Transmission Facilities". In addition, the recent recommendations of the GOTO NERC Ad Hoc Task Force state that these types of facilities should not be considered "transmission facilities".</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1) The point of Requirement R3, Part 3.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower for other reasons, so therefore it does not “correspond to”.</p> <p>2) We concur and have made the suggested revisions.</p> <p>3) We have revised R1 and R2 to address your concern. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to:</p> <p>R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following.</p> | |
| <p>FirstEnergy</p> | <p>1. While R7 is similar to language in existing Requirement R2 of FAC-009-0, this requirement is somewhat duplicative of with requirements of MOD-010. Additionally, rather than potentially sending information to four different parties and four different schedules the team should consider a progression of information needed for operations being provided to the TOP and then the TOP updating the RC and for planning the information being provided to the TP and then the TP updating the PC.</p> <p>2. Under section 4 (Applicability), replace bullets with 4.1 and 4.2 for consistency with other standards.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>1) The FR SDT believes it is the responsibility of the TO and GO to ensure that those parties that have a need for their ratings actually gets that rating information. Having a chain places the onus on other entities.</p> <p>2) The applicability section of the standard has been changed as suggested.</p> | |
| <p>NERC Standards Review</p> | <p>A. The MRO NSRS believes the ratings developed in accordance with MOD-024 and MOD-025 are more accurate and appropriate for purposes of modeling, planning and operation. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008.</p> |

| Organization | Question 6 Comment |
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| Subcommittee | <p>Additionally, FAC-008 R1 appears redundant with what is already required per MOD-024 and MOD-025, and should therefore be deleted.</p> <p>B. R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says “The documentation shall contain at least one of the following”. It doesn't say “the documentation shall contain BOTH of the following”. Since compliance is evaluated at the requirement level, and both of these are NOT required, the MRO NSRS feels these subrequirements should be bulleted.</p> <p>C. The MRO NSRS feels the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1, above. The corresponding measures should also be modified to correctly reflect that not “all of the items” in Parts 2.1 and 3.1 have to be included.</p> <p>D. Concerns were previously expressed about documentation of the basis for ratings of older facilities. The MRO NSRS appreciates the drafting team's response which indicated that this “Standard does not require the recreation of data that is no longer available or no longer accessible for any reason.” However, no modifications were made to the requirements to clarify this. The MRO NSRS feels the standard should be clear about expectations. Since it is not understood how, or if, the drafting team's responses could be used to clarify the intent of the requirement during an audit, the MRO NSRS feels it is critical that specific language be included. Thus, the MRO NSRS recommends either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2.</p> <p>E. The phrase “Ratings of the Equipment” used in R2.1 and R3.1 should be modified, as there is no such term in the NERC Glossary of Terms. “Rating” and “Equipment Rating” are both defined terms. Yet, “Equipment” and “Ratings of Equipment” are not.</p> <p>F. The reference to R2.1 in R3.2 should be changed to R3.1.</p> <p>G. In R7, recommend changing “as scheduled” to “as requested”.</p> |
| Xcel Energy | <p>A. FERC approval aside, Xcel Energy believes that facility verification, as required under NERC-approved standards MOD-024 and MOD-025, provides a more accurate value for the purposes of planning and operation. Xcel Energy has been following the guidelines of the Regional Entities in its three operating regions (MRO, SPP, and WECC) for performing these verifications for multiple decades. It is the information obtained from the verification tests that is used for reporting to the NERC GADS system, to Transmission Planning for use in load flow studies, and to Transmission Operations for real-time operation. The nameplate design value that results from a FAC-008 analysis is of value only for long-range planning prior to construction or operation of a new facility. We fail to see how reliability is enhanced when there are two different numbers being reported that describe the same facility rating. Therefore, we feel R1 should be deleted from the standard. Facility ratings from generator terminal to the interconnection (R2) should be added to MOD-024 and MOD-025, and not included in the scope of FAC-008.</p> |

| Organization | Question 6 Comment |
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| | <p>B. If R1 is retained, R.1.1.1 & R1.1.2 should be bulleted. R.1.1 says “The documentation shall contain at least one of the following”. It doesn’t say “the documentation shall contain BOTH of the following”. Since compliance is evaluated at the requirement level, and both of these are NOT required, we feel they should be bulleted.</p> <p>C. If R2 is retained, we feel the sub-requirements under R2.1 and R3.1 should be bulleted, just as proposed for R1.1 above. The corresponding measures should also be modified to correctly reflect that not “all of the items” in Parts 2.1 and 3.1 have to be included.</p> <p>D. Xcel previously expressed concerns about documentation of the basis for ratings of older facilities. We appreciate the drafting team’s response which indicated that this “Standard does not require the recreation of data that is no longer available or no longer accessible for any reason.” However, no modifications were made to the requirements to clarify this. We feel the standard should be clear about expectations. Since it is not understood how, or if, the drafting team’s responses could be used to clarify the intent of the requirement during an audit, we feel it is critical that specific language be included. If R2 is retained, we recommend either 1) add a new bullet under 2.1 and 3.1 with language identical to 1.1.2, or 2) modify the 3rd bullet under 2.1 (currently R2.1.3) and 3.1 (currently R3.1.3) with similar clarifying language as 1.1.2.</p> <p>E. The phrase “Ratings of the Equipment” used in R2.1 and 3.1 should be modified, as there is no such term in the NERC glossary. “Rating” and “Equipment Rating” are both defined terms. Yet, “Equipment” and “Ratings of Equipment” are not.</p> <p>F. The reference to R2.1 in R3.2 should be changed to R3.1.</p> <p>G. In R7, recommend changing “as scheduled” to “as requested”.</p> |
| <p>Response: The FR SDT thanks you for your comment. A) Using a rating acquired via testing is an acceptable method for complying with R1.</p> <p>B. The FR SDT agrees, and has changed what had been numbered as 1.1.1 and 1.1.2 to bullets.</p> <p>C. The FR SDT agrees, and has changed what had been numbered as 2.1.1 and 2.1.2 and 2.1.3 to bullets – and made a similar change to convert the numbered items under 3.1 to bullets.</p> <p>D. Requirement R1, Part 1.1.2 (now a bulleted item in the revised standard) applies to generation equipment. R2 and R3 apply to non-generator equipment. It is not appropriate to apply Requirement R1, Part 1.1.2 (now a bulleted item in the revised standard) to R2 and R3.</p> <p>E. Revised to “Ratings of equipment”</p> <p>F. We concur and have made the revision.</p> <p>G. “as scheduled” better reflects the intent of the requirement. Use of “as requested” might imply that an entity must respond</p> | |

| Organization | Question 6 Comment |
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| <p>immediately. This is not the intent of the requirement.</p> | |
| <p>IRC Standards Review Committee</p> | <p>a. R1.1.2: The phrase “any of which may be supplemented by engineering analyses” does not seem appropriate in a standard requirement as it is not required nor measurable. We suggest this be deleted. b. There are 2 sets of VSLs for R3. We believe the second R3 should read R4.</p> |
| <p>Response: The FR SDT thanks you for your comment. a) The FR SDT feels that this statement provides needed clarification and will retain the language. b) We agree and have revised the numbering.</p> | |
| <p>CenterPoint Energy</p> | <p>CenterPoint Energy believes Requirement 7 should include Transmission Owner(s) in the listing of associated entities that should be provided with Facility Ratings; that is, a Generator Owner should provide ratings to the associated Transmission Owner. This is needed as a Transmission Owner cannot accurately develop ratings, which must be based on the most limiting series equipment, for its Transmission Line elements without knowing the ratings of series line equipment in an interconnecting switchyard owned by a Generator Owner.</p> |
| <p>Response: The FR SDT thanks you for your comment. We concur and have added Transmission Owner to the requirement.</p> | |
| <p>Constellation Power Source Generation, Inc.</p> | <p>Constellation Power Source Generation, Inc. (CPSGI) agrees in principle with the comments filed by RRI Energy in response to questions 1 - 5 above.</p> |
| <p>Response: The FR SDT thanks you for your comment. Please see responses to questions 1-5 above.</p> | |
| <p>Great River Energy</p> | <p>GRE does not believe that the SDT has achieved their goal of adequately conveying to the GO that they are not required to have two sets of Facility Ratings. It appears that it is a requirement to have two sets of Facility Ratings. One set for the "black box" portion of the plant up to either the generator terminals, the low side of the GSU or the high side of the GSU and one set for from wherever the first set of Facility Ratings ended up to the point of interconnection with the with the TO.</p> |
| <p>Response: The FR SDT thanks you for your comment. The intent of R1 is to include the documentation on the generator Facility Rating up to either side of the main step up transformer and R2 covers electrical equipment ratings from that point to the point of interconnection. We have revised R1 and R2 to R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator</p> | |

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| <p>Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer, and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer.</p> <p>R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following:</p> | |
| <p>RRI Energy Inc</p> | <p>In the background information the SDT states: The SDT also notes that FAC-008-1 is FERC approved and enforceable, while neither MOD-024 nor MOD-025 has been approved by FERC. Therefore, the SDT is of the opinion that Generator Owners cannot be “exempted” from the Requirements, or the intent, of FAC-008 regardless of the views of being possibly duplicative to other standards (either MOD-024 or MOD-025). We do not agree with this opinion. Once submitted and approved by FERC won't this standard replace any existing FAC-008? Based on the SDT's logic the industry could never propose a change to a FERC approved standard. Standards that are cast in concrete will hinder improvements in reliability because they will not be able to change with technology and operating experience.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning.</p> | |
| <p>SERC Planning Standards Subcommittee</p> | <p>In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 states that the methodology shall be consistent with at least one of 2.1.2, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3.</p> |
| <p>Response: The FR SDT thanks you for your comment. We agree and have made the suggested edit.</p> | |
| <p>SPS Energy</p> | <p>Is the facility rating exercise considered an actual "event" that occurs at a certain time on a certain date, much like the RBA in CIP-002-2? Should it be performed periodically? Or is performing the exercise one time sufficient? There is no periodicity in the standard, which contributes to the ambiguity. How many instances of tests or backed-into calculations would satisfy the need to consider ambient conditions? In other words, over a twelve month period a facility can likely have 365 facility ratings depending on conditions. How many of these, if any, would be useful for planning or operations? Also, if it is an event, and the rating exercise took place on a day a cooling tower cell was out of service limiting the facility output by say 15%, then that would be the most limiting piece of equipment, on that day. But the cooling tower cell will be repaired. Would that repair then precipitate another facility rating exercise? In light of other standards requirements that mandate daily reporting of capability and periodic performance tests, the revised FAC-008-2 continues to be irrelevant to Generator Owners and dangerous to the BES if used for operational</p> |

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| | <p>purposes. Generator Owners should be removed from the applicability for FAC-008-2.</p> |
| <p>Response: The FR SDT thanks you for your comment. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” The requirements call for documentation of your ratings. Other requirements dictate the frequency of determining the ratings.</p> | |
| <p>Manitoba Hydro</p> | <p>Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3, R4 or R5. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R7). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R4) jeopardize the reliability of the system?</p> <p>The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology identify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems.</p> <p>A narrow interpretation of Requirement 2.2 and Requirement 3.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data.</p> <p>Manitoba Hydro recommends that Requirements 2.1, 2.2, 3.1 and 3.2 be revised as follows:</p> <p>R2.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p style="padding-left: 40px;">R2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p style="padding-left: 40px;">R2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and</p> |

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| | <p>Electronics Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).</p> <p>R2.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R2.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R2.1.1, R2.2 or R2.1.3.</p> <p>R2.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R2, Part 2.1 including identification of how each of the following were considered:</p> <p>R2.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> <p>R3.1. The methodology used to establish the Ratings of the Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:</p> <p>R3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.</p> <p>R3.1.2. 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).</p> <p>R3.1.3. A practice that has been verified by testing or engineering analysis</p> <p>R3.1.4. Available records, data or operational experience for Equipment placed in-service prior to the effective date that does not have a methodology consistent with R3.1.1, R3.2 or R3.1.3.</p> <p>R3.2. The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in R3, Part 3.1 including identification of how each of the following were considered:</p> <p>R3.2.1. Equipment Rating standard(s) used in development of this methodology.</p> <p>R3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications, if available.</p> <p>R3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).</p> |
| <p>Response: The FR SDT thanks you for your comment. The VSL is only applied after a violation of the standard has been determined. We believe that you are confusing the violation risk factor with the violation severity level.</p> <p>Except for the verification component, adding this suggestion is redundant with 2.1.3 and 3.1.3. The words “a practice” include</p> | |

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| | <p>“operational experience” that show equipment loadings that equal the rating for the rating duration specified. The SDT believes such practice must be supportable via testing or engineering analysis. Your change would circumvent the verification. Operating Limitations (Part Requirement R2, Part 2.2.4, which you omitted) are part of the underlying assumptions for the rating methodology which should be considered.</p> |
| <p>Georgia System Operations Corporation</p> | <p>None.</p> |
| <p>Northeast Power Coordinating Council</p> | <ul style="list-style-type: none"> i. On page 1, regarding paragraph 1.2 under R1., the words “do not exceed” should be replaced with “correspond to”. ii. On page 2, regarding paragraph 2.3 under R2., the word “respect” should be replaced with “correspond to”. iii. On page 2, regarding R3., the second “each” in the first line should be deleted. iv. Also, in sub-paragraph 3.2 on p. 3, the reference to R2.1 should be a reference to R3.1. v. The sub-paragraphs under 2.2 and 3.2 repeat each other word for word with only one word of difference between Requirements R2 and R3: the use of “Generator” instead of “Transmission”. Suggest that those two Requirements be reviewed to see if they can be combined to eliminate duplication. vi. Sub-paragraph 3.4.1 on page 3 has no wording associated with it. |
| <p>Response: The FR SDT thanks you for your comment.</p> <ul style="list-style-type: none"> i. Point of Requirement R1, Part 1.2 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. ii. Point of Requirement R2, Part 2.3 is to makes sure that most limiting facility is not exceeded. The rating may be lower, so therefore it does not “correspond to”. lii and iv. We concur and have made the edits v. These requirements have been kept separate to ensure clarity of the intent of the requirements. vi. We have corrected the formatting error. | |
| <p>SCE&G</p> | <p>Phil Kleckly: In the Lower VSL for R2, remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1. 2.1 state that the methodology shall be consistent with at least one of 2.1.1, 2.1.2, and 2.1.3. This also applies to Moderate, High, and Severe VSLs for R2. This also applies to all 4 VSL levels for R3.</p> |

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| <p>Response: The FR SDT thanks you for your comment. We concur and have made the suggested edits.</p> | |
| PacifiCorp | <p>Please explain 2.2.4 and the footnote below. This is unclear. 2.2.4. Operating limitations.1 1 Such as temporary de-ratings of impaired equipment in accordance with good utility practice.</p> |
| <p>Response: The FR SDT thanks you for your comment. The footnote provides one example of Operating Limitations to consider in the Facility Ratings methodology. Other factors may include environmental or legal constraints on output or duration of generation.</p> | |
| Omaha Public Power District | <p>R2.4: Change “but not limited to” to “but not be limited to” to be consistent with R3.4.1.</p> <p>R3, first paragraph: Strike the second occurrence of the word “each”.</p> <p>R3.2, first paragraph: It appears that “R2.1” was intended to be “R3.1”.</p> <p>M3: Strike the second occurrence of the word “each”.</p> <p>M4: It appears that “Requirement 34” was intended to be “Requirement 4”.</p> <p>M4, M5, R4, and R5: M4 and M5 are inconsistent with R4 and R5 with regard to Generator Owners. R4 and R5 refer to a Generator Owner’s documentation for determining Facility Ratings but not its Facility Ratings Methodology, while M4 and M5 refer to a Generator Owner’s Facility Ratings Methodology but not its documentation for determining Facility Ratings.</p> <p>R5: If the first sentence of R5 is to retain the reference to a Generator Owner’s documentation for determining Facility Ratings, then it seems like the second sentence of R5 needs to be revised to also include a reference to the Generator Owner’s documentation for determining Facility Ratings.</p> <p>M6: Change “documentation used to develop its Facility Ratings” to “documentation for determining its Facility Ratings” to be consistent with the wording used in other parts of the standard.</p> |
| <p>Response: The FR SDT thanks you for your comment. We concur with your comments and have made the suggested revisions.</p> | |
| AEP | <p>i. Suggest adding additional alternative, i.e. “performance history,” to R2.1.3.</p> <p>ii. Footnote 1 and 2 should be included in the requirement if it is to be applicable. We believe “temporary de-rates” should not be included in the equipment rating for R2.2.4.</p> <p>iii. R3.2 typo “R2.1” should be “R3.1.”</p> <p>iv. R3.4.1 should read “thermal capability of relay protective devices” instead of just “relay protective devices”, thus</p> |

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| | <p>deferring to PRC-023 to address relay trip settings, since relay trip settings are not Facility Ratings.</p> <p>v. We do not believe that the change shown in R4 was necessary.</p> <p>vi. " R7 " Delete the phrase "modifications to existing Facilities and re-ratings of existing Facilities" since the term "existing Facilities" already covers the ratings that are there today or anything that may alter those ratings on those "existing Facilities" in the future.?</p> <p>vii. How do M1 and M2 differ from one another?</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>i. We concur and have added this to Requirement R2, Part 2.1.3 (Now the third bullet under Requirement R2, Part 2.1 in the revised standard.)</p> <p>ii. The footnote provides one example of Operating Limitations to consider in the Facility Ratings methodology. Other factors may include environmental or legal constraints on output or duration of generation.</p> <p>iii. We have made the suggested edit.</p> <p>iv. Requirement R3, Part 3.4.1 requires that the methodology include the "scope of equipment addressed" which includes the thermal capabilities of the relay as well as the relay settings.</p> <p>v. Revisions to R4 were required to reflect revisions in verbiage of R1 and R2.</p> <p>vi. We do not agree. The requirement provides needed clarity as written.</p> <p>vii. M1 applies to R1 (generator equipment); M2 applies to R2 (from generator to change in ownership of facilities)</p> | |
| <p>US Bureau of Reclamation</p> | <p>The measure M6 needs to be revised to be consistent with the proposed changes in R1. The term "evidence to show its Facility Ratings are consistent" might imply that an independent assessment of consistency is needed. Revising the language as follows would clarify the issue: "Each Transmission Owner and Generator Owner shall have as evidence its Facility Ratings which were developed with the documentation used to determine its Facility Ratings as specified in Requirement R1 or Facility Ratings which were developed utilizing its Facility Ratings Methodology as specified in Requirements R2 and R3 (Requirement 6).</p> <p>"The Violation Severity Table also needs to be adjusted to remain consistent with R1. The following changes should be incorporated into the R6 for all levels. "The responsible entity failed to establish Facility Ratings utilizing the documentation used to determine its Facility Ratings as specified in R1 or Facility Ratings utilizing Facility Ratings Methodology as specified in R2 for X% or less of its solely owned and jointly owned Facilities. (R6)"</p> |
| <p>Response: The FR SDT thanks you for your comment. We concur and have made the suggested edits.</p> | |

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| Calpine Corporation | <p>The NERC Glossary of Terms Used in Reliability Standards defines the following: Facility “ A set of ELECTRICAL equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator, a shunt compensator, transformer, etc.) Facility Rating “ The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility. It would seem clear from the above definitions that a Facility Rating would apply ONLY to electrical equipment. For a generation facility, this would exclude the prime mover or other energy source or ancillary equipment that could limit the actual real power output of the Facility. Requirement R 1.1.2 allows a Generator Owner the option of establishing the Facility Rating up to the generator terminals or low or high side terminals of the step up transformer by providing the following documentation: Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analysis. Testing or historical performance isn’t sufficient to establish a Facility Rating without knowing the underlying Equipment Rating for each piece of Equipment which comprises the subject portion of the Facility. Since electrical equipment can be operated above its rating for an extended period of time without obvious damage, the fact that a Facility has demonstrated a particular real power flow does not establish that no individual piece of equipment is violating its rating, as required by the definition of Facility Rating. It’s possible to upgrade or replace a prime mover such that its capability is above the nameplate rating of the generator. In this instance, running the prime mover at its full capability is above the rating of the generator, unless the generator rating has also been increased, which should then have accompanying documentation. Other than the generator itself, all Equipment that makes up a Generation Facility is included in Transmission Facilities. Since the generator is just another piece of electrical equipment, with ratings for voltage, frequency, current, etc., there’s no reason to have separate requirements for Generation Facilities and Transmission Facilities. Based on comments received on the previous draft of the standard, there is a large body who believes that the Facility Rating for generation facilities is its capability to produce real or reactive power. There is also a contingent that believes the Facility Rating for generation facilities is the rating of the most limiting piece of electrical equipment. By inclusion of Requirements R 1.1.1 and R 1.1.2, the drafting team has allowed both definitions to be used at the Generator Owner’s discretion. As has also been pointed out in previous comments, the rating of the most limiting piece of electrical equipment and the capability of the prime mover are likely to be significantly different and are used for entirely different purposes. By allowing either to be provided to various entities as the Facility Rating, the end user does not know what they’re being provided. This could lead to erroneous results in planning and subsequent impacts on reliability. It’s recommended that the drafting team follow the NERC definition for Facility and Facility Rating and explicitly limit the scope to electrical equipment only. It’s recommended that this be clearly described in an appendix attached to the standard to eliminate the confusion that exists today. In addition, the appendix should refer to MOD-024 and MOD-025 as the standards which demonstrate the real and reactive power capability of the Facility, but do not represent a generation facility’s Facility Rating.</p> |

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| | <p>Response: The FR SDT thanks you for your comment. We have removed the word “turbine” from R1. We believe that this will address your concern about “electrical” equipment only. This standard (FAC-008) allows performance testing or historical performance records as a means to determine facility ratings as provided in MOD-024 and MOD-025, therefore the FR SDT does not believe that there is a need to explicitly name those standards here.</p> |
| <p>RRI Energy</p> | <p>The primary basis given for maintaining the applicability of generator owners is that FAC-008-1 is a FERC approved standard, even though the standard was written at a time when few were paying attention to the requirements from a legally binding perspective. By this logic, the Standard requirements will last to infinity. There is no disagreement that Generator Owner facility ratings should be rated on a technically sound basis. The standard requirements are centered more on the excessive management of documentation rather than reliability of the BES. It is not justifiable to place the same level of documentation requirements to the radial components of a generator owner as those applied to the network components of a transmission system. The generator facilities are designed as projects by registered professional engineers and are connected to the transmission facility through an application process. Changes in unit output ratings must go through a similar process. Generator owner facilities are not subject to the dynamic and ever-changing conditions of a networked transmission system. Generating owners are expending unproductive resources to reverse engineer documentation of Facility Ratings at locations that have multiple decades of successful operation. No one is seriously questioning the ability of the generating units to deliver their specified outputs except for regulators in an audit conditions, that are finding non-compliance on documentation technicalities that have no material impact on the reliability of the BES.</p> |
| | <p>Response: The FR SDT thanks you for your comment. The requirement calls for documenting how facility ratings were determined. This may simply state that actual testing of the generator was used to determine the rating.</p> |
| <p>Southern Company</p> | <p>The wording in R3 (except for those generating unit Facilities addressed in R1) should say (except for those generating unit Facilities addressed in R1 and R2).</p> <p>The wording in R3.2 needs to be changed from “Equipment Ratings identified in R2.1” to “Equipment Ratings identified in R3.1.”</p> <p>To make the wording in the requirements consistent, the wording in R3.2 should be changed from “Equipment Ratings identified in R2.1” to read “Equipment Ratings identified in Requirement R3, Part 3.1.”</p> <p>Remove 2.1.1, 2.1.2, and 2.1.3 and replace them with 2.1 in the VSLs for R2. Requirement 2.1 states that the methodology shall with at least one of 2.1.1, 2.1.2, and 2.1.3.</p> <p>Remove 3.1.1, 3.1.2, and 3.1.3 and replace them with 3.1 in the VSLs for R3. Requirement 3.1 states that the methodology shall with at least one of 3.1.1, 3.1.2, and 3.1.3.</p> |

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| | The VSL table needs to be corrected to show R4 in the R# column rather than having two R3s. |
| Response: The FR SDT thanks you for your comment. We concur and have made the suggested revisions. | |
| Pepco Holdings, Inc. - Affiliates | There are some typographical errors in the draft - Requirement R3.2 includes a reference to Equipment Ratings identified in R2.1. That should be R3.1. Measure M4 refers to a request made in accordance with Requirement 34. That should be Requirement 4. |
| Response: The FR SDT thanks you for your comment. We concur and have made the suggested revisions. | |
| PJM | This standard attempts to combine rating generators with rating transmission lines. They are two very different types of equipment that have distinctive characteristics which are not comparable and should not be grouped together in this way. The MOD standards handle generators sufficiently and generators should not be forced into the FAC transmission standards. |
| Response: The FR SDT thanks you for your comment. The requirements call for documenting how facility ratings were determined and providing that documentation to others. The MOD standards address verification of the ratings. | |
| Entergy Services, Inc | We note that the consideration of comments to the August comments stated that “The FR SDT reviewed the VRF guidelines and agrees with the suggestion to revise the VRF to “Lower”. “ However we note that several of the VRFs in this current draft are Medium, not Lower. Please make the appropriate changes to the VRFs. |
| Response: The FR SDT thanks you for your comment. We have revised the VRF for R1 and R2 to Lower. | |

Implementation Plan for FAC-008-02 — Facility Ratings

Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before this standard can be implemented.

Modified Standards

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings should both be retired when FAC-008-02 becomes effective.

Compliance with Standards

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Proposed Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before the new standard becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

Standard Authorization Request Form

| | |
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| 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 |

| SAR Requestor Information | SAR Type <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 |

| | |
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| Purpose | <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
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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

Standards Authorization Request Form

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.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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. |

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

| Standard No. | Explanation |
|---------------------|--------------------|
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| | |

Related SARs

| SAR ID | Explanation |
|---------------|--------------------|
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Regional Differences

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

The drafting team 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 |

Standards Authorization Request Form

| | | | |
|----------------------------|--|---|---|
| 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. |
|----------------------------|--|---|---|

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

Associated Documents

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

Functional Model Version 3

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

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 |

| SAR Requestor Information | SAR Type <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 |

| |
|--|
| <p>Purpose</p> <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
|--|

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

Standards Authorization Request Form

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.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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. |

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

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

| SAR ID | Explanation |
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Regional Differences

| Region | Explanation |
|---------------|--------------------|
| ERCOT | |
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| MRO | |
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| SERC | |
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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?

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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.

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Violation Risk Factors (Risk Factor)

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

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(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.

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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.

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| 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 |

Standards Authorization Request Form

| | | | |
|----------------------------|--|---|---|
| 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. |
|----------------------------|--|---|---|

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

Associated Documents

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

Functional Model Version 3

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

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. Draft SAR Version 1 posted January 20, 2009. Posting included draft of FAC-008-2.
2. Draft SAR Version 1 Comment Period ended February 14, 2009.
3. Draft SAR Version 2 and comment responses on SAR version 1 posted August 10, 2009. Posting included revised draft of FAC-008-2.
4. Draft Version 2 SAR comment period ended September 9, 2009

Proposed Action Plan and Description of Current Draft:

The SDT has been working on revisions to the SAR and standard since the second posting ended in September 2009. The current SAR and standard contains revisions based on stakeholder comments on the second draft. The team is seeking SC approval to proceed to ballot.

Future Development Plan:

| Anticipated Actions | Anticipated Date |
|---|------------------|
| 1. SAR version 3 and comment responses for SAR version 2 submitted to SC. | December 2009 |
| 2. Post Standards for pre-ballot period. | January 2009 |
| 3. Standards posted for initial and recirculation ballots. | February 2009 |
| 4. Standards sent to BOT for approval. | April 2009 |
| 5. Standards filed with regulatory authorities. | August 2009 |

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. **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. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 1.1. The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2. The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 2.1. The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
- Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
- 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
- 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
- 3.2.4. Operating limitations.²
- 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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*]
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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*] [*Time Horizon: Operations Planning*]
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning*]
- R7. Each Transmission Owner and Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning*]

C. Measures

- M1. Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement R1.

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement R2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement R3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement R4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings,, 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 R5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement R6).
- M7.** Each Transmission Owner and Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R7.

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 documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6. The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, Measure M5, and Measure M7 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner's Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner's Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner's Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner's Facility Rating methodology failed to recognize a facility's rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 | <p>The Transmission Owner's Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 <p>OR</p> | <p>The Transmission Owner's Facility Rating methodology failed to recognize a Facility's rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> <p>The Transmission Owner failed to</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| | <ul style="list-style-type: none"> • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | <p>The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request.</p> | <p>The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request.</p> | <p>The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request.</p> | <p>The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3)</p> |
| R5 | <p>The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5)</p> | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | <p>The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5%, up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) |

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. Draft SAR Version 1 posted January 20, 2009. Posting included draft of FAC-008-2.
2. Draft SAR Version 1 Comment Period ended February 14, 2009.
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Proposed Action Plan and Description of Current Draft:

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Future Development Plan:

| Anticipated Actions | Anticipated Date |
|---|------------------|
| 1. SAR version 3 and comment responses for SAR version 2 submitted to SC. | December 2009 |
| 2. Post Standards for pre-ballot period. | January 2009 |
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| 4. Standards sent to BOT for approval. | April 2009 |
| 5. Standards filed with regulatory authorities. | August 2009 |

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. **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. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned ~~turbine-generator~~ Facility(ies) up to the ~~generator terminals or the low side terminals of the main step up transformer~~ if the Generator Owner does not own the main step up transformer and, or the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer ~~(location as specified by the Generator Owner)~~. [Violation Risk Factor: Lower~~Medium~~] [Time Horizon: Long-term Planning]
 - 1.1. The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - ~~1.1.1.~~ Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis. ~~having a successful implementation record.~~
 - ~~1.1.2.~~ Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2. The documentation shall be ~~capable of demonstrating~~ consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings ~~m~~Methodology) of its solely and jointly owned equipment connected between the ~~generator terminals, or the low voltage side of the step up transformer, or the high voltage side of the transformer~~ ~~(consistent with location specified in R1 by the Generator Owner)~~ and the point of interconnection with the Transmission Owner that contains all of the following. [Violation Risk Factor: Lower~~Medium~~] [Time Horizon: Long-term Planning]
 - 2.1. The methodology used to establish the Ratings of the ~~e~~Equipment that comprises the Facility(ies) shall be consistent with at least one of the following:

- 3.2.1. Equipment Rating standard(s) used in development of this methodology.
- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
- 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
- 3.2.4. Operating limitations.²
- 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings [mMethodology](#) and each Generator Owner shall each make its documentation for determining its Facility Ratings [and 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]*
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings [mMethodology](#) or Generator Owner's documentation for determining its Facility Ratings [and its Facility Rating 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 [mMethodology](#) and, if no change will be made to that Facility Ratings [Mmethodology](#), the reason why. *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings [mMethodology](#) or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7. Each Transmission Owner and Generator Owner shall 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), [Transmission Owner\(s\)](#) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

C. Measures

- M1. Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement [R1](#).

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- M2. Each Generator Owner shall have a documented Facility Ratings ~~m~~Methodology that includes all of the items identified in Requirement [R2](#), Parts 2.1 through 2.4.
- M3. Each Transmission Owner shall ~~each~~ have a documented Facility Ratings ~~m~~Methodology that includes all of the items identified in Requirement [R3](#), Parts 3.1 through 3.4.
- M4. Each 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 ~~m~~Methodology available for inspection within 21 calendar days of a request in accordance with Requirement ~~34~~. [The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining theits Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement R4.](#)
- M5. 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 ~~m~~Methodology [or a Generator Owner's documentation for determining theits Facility Ratings.](#), 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 [R5](#).
- M6. Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation ~~used to develop~~[for determining](#) its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings ~~m~~Methodology as specified in Requirements R2 and R3 (Requirement [R6](#)).
- M7. Each Transmission Owner and Generator Owner shall 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), [Transmission Owner\(s\)](#) and Transmission Operator(s) in accordance with Requirement [R7](#).

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 documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings mMethodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6. The Transmission Owner shall keep its current, in force Facility Ratings ~~M~~methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, Measure M5, and Measure M7 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|--|
| R1 | N/A | <p>The Generator Owner's Facility Rating documentation ed did not address either of the following:</p> <p>☐ Requirement R1, Part 1.1.4</p> <ul style="list-style-type: none"> • Requirement R1, Part 1.1.2. | <p>The Generator Owner's Facility Rating documentation did not address Requirement R1, Part 1.2.</p> | <p>The Generator Owner failed to provide documentation for determining its Facility Ratings.</p> |
| R2 | <p>The Generator Owner failed to include in its Facility Rating mMethodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.4 ☐ 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating mMethodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.4 ☐ 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner's Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.4 ☐ 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 | <p>The Generator Owner's Facility Rating mMethodology failed to recognize a facility's rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> • 2.1.4 ☐ 2.1.2 • 2.1.3 • 2.2.1 • 2.2.2 • 2.2.3 • 2.2.4 |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----------------|--|--|---|--|
| R3 | <p>The Transmission Owner failed to include in its Facility Rating mMethodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 □ 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating mMethodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 □ 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner's Facility Rating mMethodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.4.1 • 3.4.2 <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating mMethodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 □ 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner's Facility Rating mMethodology failed to recognize a Facility's rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating mMethodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1.1 □ 3.1.2 • 3.1.3 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 3 | <p>The responsible entity made its Facility Ratings mMethodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. (R3)</p> | <p>The responsible entity made its Facility Ratings mMethodology or Facility Ratings documentation available within <u>more than</u> 31 calendar days but less than or equal to 41 calendar days after a request.</p> | <p>The responsible entity made its Facility Rating mMethodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request.</p> | <p>The responsible entity failed to make its Facility Ratings mMethodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3)</p> |
| R5 | <p>The responsible entity provided a response in more than 45 calendar days but less than or equal to 60</p> | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than ore equal to 80</p> | <p>The responsible entity failed to provide a response as required in more than 80 calendar days after</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|---|--|--|
| | calendar days after a request. (R5) | calendar days after a request. OR The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings Methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5) | calendar days after a request. OR The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings Methodology or Facility Ratings documentation . (R5) | the comments were received. (R5) |
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings Methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) |



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Ballot Pool and Pre-ballot Window

December 7, 2009–January 12, 2010

Now available at: <https://standards.nerc.net/BallotPool.aspx>

Project 2009-06: Facility Ratings

Proposed standard FAC-008-2 — Facility Ratings is posted for a 30-day pre-ballot review. Registered Ballot Body members may join the ballot pool to be eligible to vote on these standards **until 8 a.m. EST on January 12, 2010**.

During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list server for this ballot pool is: bp-2009-06_FAC-008-2_FR.in.

Next Steps

Voting will begin shortly after the pre-ballot review closes.

Project Background

This project involves revisions to FAC-008-1 and FAC-009-1 that result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines and also to two of the three applicable FERC directives in Order 693. The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except 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 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 Requirement R7.

Project page: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Applicability of Standards in Project

Transmission Owner

Generator Owner

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Initial Ballot Window Open

January 12-22, 2010

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

Project 2009-06: Facility Ratings

An initial ballot window for proposed standard FAC-008-2 — Facility Ratings and an associated implementation plan is now open **until 8 p.m. EST on January 22, 2010.**

Instructions

Members of the ballot pool associated with this project may log in and submit their votes from the following page: <https://standards.nerc.net/CurrentBallots.aspx>

Next Steps

Voting results will be posted and announced after the ballot window closes.

Project Background

This project involves revisions to FAC-008-1 and FAC-009-1 that result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines and also to two of the three applicable FERC directives in Order 693. The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except the requirement 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 this requirement did not have a reliability-related benefit, and voted against the inclusion of a requirement to meet this directive. Therefore, the requirement was removed from this version.

Project page: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Applicability of Standards in Project

Transmission Owner

Generator Owner

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*

User Name

Password

Log in

Register

- Ballot Pools
- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

Home Page

| Ballot Results | |
|-------------------------------|---|
| Ballot Name: | Project 2009-06 - Facility Ratings - FAC-008-2 _in |
| Ballot Period: | 1/12/2010 - 1/22/2010 |
| Ballot Type: | Initial |
| Total # Votes: | 255 |
| Total Ballot Pool: | 286 |
| Quorum: | 89.16 % The Quorum has been reached |
| Weighted Segment Vote: | 75.16 % |
| Ballot Results: | The standard will proceed to recirculation ballot. |

| Summary of Ballot Results | | | | | | | | |
|---------------------------|-------------|----------------|-------------|--------------|-----------|--------------|-----------------|-----------|
| Segment | Ballot Pool | Segment Weight | Affirmative | | Negative | | Abstain # Votes | No Vote |
| | | | # Votes | Fraction | # Votes | Fraction | | |
| 1 - Segment 1. | 80 | 1 | 54 | 0.806 | 13 | 0.194 | 6 | 7 |
| 2 - Segment 2. | 11 | 1 | 9 | 0.9 | 1 | 0.1 | 1 | 0 |
| 3 - Segment 3. | 62 | 1 | 38 | 0.704 | 16 | 0.296 | 4 | 4 |
| 4 - Segment 4. | 20 | 1 | 10 | 0.588 | 7 | 0.412 | 2 | 1 |
| 5 - Segment 5. | 59 | 1 | 31 | 0.66 | 16 | 0.34 | 1 | 11 |
| 6 - Segment 6. | 33 | 1 | 19 | 0.704 | 8 | 0.296 | 2 | 4 |
| 7 - Segment 7. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 - Segment 8. | 8 | 0.7 | 6 | 0.6 | 1 | 0.1 | 0 | 1 |
| 9 - Segment 9. | 6 | 0.4 | 3 | 0.3 | 1 | 0.1 | 1 | 1 |
| 10 - Segment 10. | 7 | 0.3 | 3 | 0.3 | 0 | 0 | 2 | 2 |
| Totals | 286 | 7.4 | 173 | 5.562 | 63 | 1.838 | 19 | 31 |

| Individual Ballot Pool Results | | | | |
|--------------------------------|------------------------------------|-----------------|-------------|----------------------|
| Segment | Organization | Member | Ballot | Comments |
| 1 | Allegheny Power | Rodney Phillips | Affirmative | |
| 1 | Ameren Services | Kirit S. Shah | Affirmative | View |
| 1 | American Electric Power | Paul B. Johnson | Affirmative | View |
| 1 | American Transmission Company, LLC | Jason Shaver | Affirmative | |
| 1 | Arizona Public Service Co. | Robert D Smith | Negative | View |
| 1 | Avista Corp. | Scott Kinney | Abstain | |
| 1 | Baltimore Gas & Electric Company | John J. Moraski | Affirmative | View |
| 1 | BC Transmission Corporation | Gordon Rawlings | Affirmative | |

| | | | | |
|---|---|------------------------------|-------------|----------------------|
| 1 | Beaches Energy Services | Joseph S. Stonecipher | Negative | View |
| 1 | Black Hills Corp | Eric Egge | Affirmative | |
| 1 | Bonneville Power Administration | Donald S. Watkins | Affirmative | |
| 1 | Brazos Electric Power Cooperative, Inc. | Tony Kroskey | Abstain | |
| 1 | CenterPoint Energy | Paul Rocha | Abstain | |
| 1 | Central Maine Power Company | Brian Conroy | Affirmative | |
| 1 | City of Vero Beach | Randall McCamish | Negative | |
| 1 | City Utilities of Springfield, Missouri | Jeff Knottek | Abstain | |
| 1 | Consolidated Edison Co. of New York | Christopher L de Graffenried | Affirmative | |
| 1 | Dairyland Power Coop. | Robert W. Roddy | Affirmative | |
| 1 | Dominion Virginia Power | William L. Thompson | Affirmative | |
| 1 | Duke Energy Carolina | Douglas E. Hils | Affirmative | |
| 1 | E.ON U.S. LLC | Larry Monday | Affirmative | View |
| 1 | East Kentucky Power Coop. | George S. Carruba | | |
| 1 | Empire District Electric Co. | Ralph Frederick Meyer | Negative | View |
| 1 | Entergy Corporation | George R. Bartlett | Negative | View |
| 1 | Exelon Energy | John J. Blazekovich | Negative | View |
| 1 | FirstEnergy Energy Delivery | Robert Martinko | Affirmative | |
| 1 | Florida Keys Electric Cooperative Assoc. | Dennis Minton | Affirmative | |
| 1 | Gainesville Regional Utilities | Luther E. Fair | Affirmative | |
| 1 | Georgia Transmission Corporation | Harold Taylor, II | | |
| 1 | Great River Energy | Gordon Pietsch | Affirmative | |
| 1 | Hoosier Energy Rural Electric Cooperative, Inc. | Robert Solomon | Abstain | |
| 1 | Hydro One Networks, Inc. | Ajay Garg | Affirmative | |
| 1 | Hydro-Quebec TransEnergie | Albert Poire | Affirmative | |
| 1 | Idaho Power Company | Ronald D. Schellberg | Affirmative | View |
| 1 | ITC Transmission | Elizabeth Howell | Affirmative | |
| 1 | JEA | Ted E Hobson | Affirmative | |
| 1 | Kansas City Power & Light Co. | Michael Gammon | Affirmative | View |
| 1 | Lakeland Electric | Larry E Watt | Negative | View |
| 1 | Lee County Electric Cooperative | John W Delucca | Affirmative | |
| 1 | Lincoln Electric System | Doug Bantam | | |
| 1 | Long Island Power Authority | Jonathan Appelbaum | Affirmative | |
| 1 | Manitoba Hydro | Michelle Rheault | Affirmative | View |
| 1 | MEAG Power | Danny Dees | Affirmative | |
| 1 | MidAmerican Energy Co. | Terry Harbour | | |
| 1 | Northeast Utilities | David H. Boguslawski | Affirmative | |
| 1 | Northern Indiana Public Service Co. | Kevin M Largura | Affirmative | |
| 1 | NorthWestern Energy | John Canavan | Affirmative | |
| 1 | Ohio Valley Electric Corp. | Robert Matthey | Affirmative | |
| 1 | Omaha Public Power District | Lorees Tadros | | |
| 1 | Orange and Rockland Utilities, Inc. | Edward Bedder | Affirmative | |
| 1 | Orlando Utilities Commission | Brad Chase | Affirmative | |
| 1 | Otter Tail Power Company | Lawrence R. Larson | Affirmative | |
| 1 | Pacific Gas and Electric Company | Chifong L. Thomas | Affirmative | |
| 1 | PacifiCorp | Mark Sampson | Affirmative | View |
| 1 | Platte River Power Authority | John C. Collins | Affirmative | |
| 1 | Portland General Electric Co. | Frank F. Afranji | Abstain | |
| 1 | Potomac Electric Power Co. | Richard J. Kafka | Affirmative | |
| 1 | PowerSouth Energy Cooperative | Larry D. Avery | Negative | |
| 1 | PP&L, Inc. | Ray Mammarella | | |
| 1 | Progress Energy Carolinas | Sammy Roberts | Affirmative | |
| 1 | Public Service Electric and Gas Co. | Kenneth D. Brown | Affirmative | View |
| 1 | Puget Sound Energy, Inc. | Catherine Koch | Affirmative | |
| 1 | Sacramento Municipal Utility District | Tim Kelley | Affirmative | |
| 1 | Salt River Project | Robert Kondziolka | Negative | View |
| 1 | San Diego Gas & Electric | Linda Brown | Affirmative | |
| 1 | Santee Cooper | Terry L. Blackwell | Affirmative | |
| 1 | SCE&G | Henry Delk, Jr. | Affirmative | |
| 1 | Seattle City Light | Pawel Krupa | Affirmative | |
| 1 | Sierra Pacific Power Co. | Richard Salgo | Negative | View |
| 1 | Southern California Edison Co. | Dana Cabbell | Affirmative | |
| 1 | Southern Company Services, Inc. | Horace Stephen Williamson | Affirmative | |
| 1 | Southern Illinois Power Coop. | William G. Hutchison | Affirmative | |
| 1 | Southwest Transmission Cooperative, Inc. | James L. Jones | Affirmative | |
| 1 | Southwestern Power Administration | Gary W Cox | Negative | |

| | | | | |
|---|--|------------------------------|-------------|----------------------|
| 1 | Sunflower Electric Power Corporation | Noman Lee Williams | | |
| 1 | Tri-State G & T Association Inc. | Keith V. Carman | Negative | View |
| 1 | Tucson Electric Power Co. | John Tolo | Affirmative | |
| 1 | Westar Energy | Allen Klassen | Affirmative | |
| 1 | Western Area Power Administration | Brandy A Dunn | Affirmative | |
| 1 | Xcel Energy, Inc. | Gregory L Pieper | Negative | View |
| 2 | Alberta Electric System Operator | Jason L. Murray | Affirmative | |
| 2 | BC Transmission Corporation | Famarz Amjadi | Affirmative | |
| 2 | Electric Reliability Council of Texas, Inc. | Chuck B Manning | Abstain | |
| 2 | Florida Municipal Power Pool | Thomas E Washburn | Negative | View |
| 2 | Independent Electricity System Operator | Kim Warren | Affirmative | |
| 2 | ISO New England, Inc. | Kathleen Goodman | Affirmative | |
| 2 | Midwest ISO, Inc. | Jason L Marshall | Affirmative | |
| 2 | New Brunswick System Operator | Alden Briggs | Affirmative | |
| 2 | New York Independent System Operator | Gregory Campoli | Affirmative | |
| 2 | PJM Interconnection, L.L.C. | Tom Bowe | Affirmative | |
| 2 | Southwest Power Pool | Charles H Yeung | Affirmative | View |
| 3 | Alabama Power Company | Bobby Kerley | Affirmative | |
| 3 | Allegheny Power | Bob Reeping | Affirmative | |
| 3 | American Electric Power | Raj Rana | Affirmative | View |
| 3 | Arizona Public Service Co. | Thomas R. Glock | Negative | View |
| 3 | Atlantic City Electric Company | James V. Petrella | Affirmative | |
| 3 | BC Hydro and Power Authority | Pat G. Harrington | Abstain | |
| 3 | Bonneville Power Administration | Rebecca Berdahl | Affirmative | |
| 3 | Central Lincoln PUD | Steve Alexanderson | Affirmative | |
| 3 | City of Farmington | Linda R. Jacobson | Negative | View |
| 3 | City Public Service of San Antonio | Edwin Les Barrow | Negative | View |
| 3 | Cleco Utility Group | Bryan Y Harper | Abstain | |
| 3 | Commonwealth Edison Co. | Stephen Lesniak | Negative | |
| 3 | Consolidated Edison Co. of New York | Peter T Yost | Affirmative | |
| 3 | Consumers Energy | David A. Lapinski | Negative | |
| 3 | Cowlitz County PUD | Russell A Noble | Negative | View |
| 3 | Delmarva Power & Light Co. | Michael R. Mayer | Affirmative | |
| 3 | Detroit Edison Company | Kent Kujala | Affirmative | |
| 3 | Dominion Resources, Inc. | Jalal (John) Babik | Affirmative | |
| 3 | Duke Energy Carolina | Henry Ernst-Jr | Affirmative | View |
| 3 | Entergy Services, Inc. | Matt Wolf | Negative | View |
| 3 | FirstEnergy Solutions | Joanne Kathleen Borrell | | |
| 3 | Florida Municipal Power Agency | Joe McKinney | Negative | |
| 3 | Florida Power & Light Co. | W. R. Schoneck | Abstain | |
| 3 | Florida Power Corporation | Lee Schuster | Affirmative | |
| 3 | Georgia Power Company | Leslie Sibert | Affirmative | |
| 3 | Georgia System Operations Corporation | R Scott S. Barfield-McGinnis | Abstain | |
| 3 | Grays Harbor PUD | Wesley W Gray | Negative | |
| 3 | Great River Energy | Sam Kokkinen | Affirmative | |
| 3 | Gulf Power Company | Gwen S Frazier | Affirmative | |
| 3 | Hydro One Networks, Inc. | Michael D. Penstone | Affirmative | |
| 3 | JEA | Garry Baker | | |
| 3 | Kansas City Power & Light Co. | Charles Locke | Affirmative | View |
| 3 | Kissimmee Utility Authority | Gregory David Woessner | Affirmative | |
| 3 | Lakeland Electric | Mace Hunter | Negative | |
| 3 | Lincoln Electric System | Bruce Merrill | Affirmative | |
| 3 | Louisville Gas and Electric Co. | Charles A. Freibert | Affirmative | View |
| 3 | Manitoba Hydro | Greg C Parent | Affirmative | View |
| 3 | MidAmerican Energy Co. | Thomas C. Mielnik | Affirmative | |
| 3 | Mississippi Power | Don Horsley | Affirmative | |
| 3 | Municipal Electric Authority of Georgia | Steven M. Jackson | Negative | |
| 3 | Muscatine Power & Water | John Bos | | |
| 3 | New York Power Authority | Marilyn Brown | Affirmative | |
| 3 | Niagara Mohawk (National Grid Company) | Michael Schiavone | Affirmative | |
| 3 | Northern Indiana Public Service Co. | William SeDoris | Affirmative | |
| 3 | Orlando Utilities Commission | Ballard Keith Mutters | Negative | |
| 3 | PacifiCorp | John Apperson | Affirmative | View |
| 3 | Platte River Power Authority | Terry L Baker | Affirmative | |
| 3 | Progress Energy Carolinas | Sam Waters | Affirmative | |
| 3 | Public Service Electric and Gas Co. | Jeffrey Mueller | Affirmative | View |
| 3 | Public Utility District No. 1 of Chelan County | Kenneth R. Johnson | Affirmative | |

| | | | | |
|---|---|---------------------|-------------|----------------------|
| 3 | Public Utility District No. 2 of Grant County | Greg Lange | Negative | View |
| 3 | Sacramento Municipal Utility District | James Leigh-Kendall | Affirmative | |
| 3 | Salt River Project | John T. Underhill | Negative | View |
| 3 | San Diego Gas & Electric | Scott Peterson | | |
| 3 | Santee Cooper | Zack Dusenbury | Affirmative | |
| 3 | Seattle City Light | Dana Wheelock | Affirmative | |
| 3 | South Carolina Electric & Gas Co. | Hubert C. Young | Affirmative | |
| 3 | Southern California Edison Co. | David Schiada | Affirmative | |
| 3 | Tampa Electric Co. | Ronald L Donahey | Affirmative | |
| 3 | Wisconsin Electric Power Marketing | James R. Keller | Negative | View |
| 3 | Wisconsin Public Service Corp. | Gregory J Le Grave | Affirmative | |
| 3 | Xcel Energy, Inc. | Michael Ibold | Negative | View |
| 4 | Alliant Energy Corp. Services, Inc. | Kenneth Goldsmith | Affirmative | View |
| 4 | American Municipal Power - Ohio | Kevin Koloini | Affirmative | |
| 4 | City of New Smyrna Beach Utilities Commission | Timothy Beyrle | Negative | |
| 4 | Consumers Energy | David Frank Ronk | Affirmative | |
| 4 | Detroit Edison Company | Daniel Herring | Affirmative | View |
| 4 | Florida Municipal Power Agency | Frank Gaffney | Negative | View |
| 4 | Fort Pierce Utilities Authority | Thomas W. Richards | Negative | View |
| 4 | Georgia System Operations Corporation | Guy Andrews | Abstain | |
| 4 | Illinois Municipal Electric Agency | Bob C. Thomas | Affirmative | |
| 4 | Integrus Energy Group, Inc. | Christopher Plante | Affirmative | |
| 4 | Madison Gas and Electric Co. | Joseph G. DePoorter | Negative | View |
| 4 | Northern California Power Agency | Fred E. Young | Affirmative | |
| 4 | Ohio Edison Company | Douglas Hohlbaugh | Affirmative | |
| 4 | Old Dominion Electric Coop. | Mark Ringhausen | Negative | View |
| 4 | Pacific Northwest Generating Cooperative | Aleka K Scott | | |
| 4 | Public Utility District No. 1 of Snohomish County | John D. Martinsen | Abstain | |
| 4 | Sacramento Municipal Utility District | Mike Ramirez | Affirmative | |
| 4 | Seattle City Light | Hao Li | Affirmative | |
| 4 | Seminole Electric Cooperative, Inc. | Steven R Wallace | Negative | |
| 4 | Wisconsin Energy Corp. | Anthony Jankowski | Negative | View |
| 5 | AEP Service Corp. | Brock Ondayko | Affirmative | View |
| 5 | Amerenue | Sam Dwyer | Affirmative | |
| 5 | Avista Corp. | Edward F. Groce | Abstain | |
| 5 | Black Hills Corp | George Tatar | Affirmative | |
| 5 | Bonneville Power Administration | Francis J. Halpin | Affirmative | |
| 5 | Calpine Corporation | Duncan Brown | Negative | View |
| 5 | City of Tallahassee | Alan Gale | | |
| 5 | City Water, Light & Power of Springfield | Karl E. Kohlrus | Affirmative | |
| 5 | Colmac Clarion/Piney Creek LP | Harvie D. Beavers | Affirmative | |
| 5 | Competive Power Ventures, Inc. | Mark E. Bennett | | |
| 5 | Consolidated Edison Co. of New York | Edwin E Thompson | Affirmative | |
| 5 | Constellation Power Source Generation, Inc. | Terrence Simon | | |
| 5 | Consumers Energy | James B Lewis | Negative | View |
| 5 | Covanta Energy | Samuel Cabassa | Affirmative | |
| 5 | Dairyland Power Coop. | Warren Schaefer | Affirmative | |
| 5 | Detroit Edison Company | Ronald W. Bauer | Affirmative | |
| 5 | Dominion Resources, Inc. | Mike Garton | Affirmative | |
| 5 | Dynegy | Greg Mason | Negative | |
| 5 | Entegra Power Group, LLC | Kenneth Parker | Negative | View |
| 5 | Entergy Corporation | Stanley M Jaskot | Negative | View |
| 5 | Exelon Nuclear | Michael Korchynsky | Negative | |
| 5 | FirstEnergy Solutions | Kenneth Dresner | | |
| 5 | FPL Energy | Benjamin Church | Negative | View |
| 5 | Great River Energy | Cynthia E Sulzer | Affirmative | |
| 5 | JEA | Donald Gilbert | Affirmative | |
| 5 | Kansas City Power & Light Co. | Scott Heidtbrink | Affirmative | |
| 5 | Kissimmee Utility Authority | Mike Blough | Affirmative | View |
| 5 | Lakeland Electric | Thomas J Trickey | Negative | |
| 5 | Liberty Electric Power LLC | Daniel Duff | Negative | View |
| 5 | Lincoln Electric System | Dennis Florom | Affirmative | |
| 5 | Louisville Gas and Electric Co. | Charlie Martin | Affirmative | View |
| 5 | Luminant Generation Company LLC | Mike Laney | Negative | View |
| 5 | Manitoba Hydro | Mark Aikens | Affirmative | View |

| | | | | |
|---|--|----------------------|-------------|----------------------|
| 5 | New York Power Authority | Gerald Mannarino | | |
| 5 | Northern Indiana Public Service Co. | Michael K Wilkerson | Affirmative | |
| 5 | Northern States Power Co. | Liam Noailles | Negative | View |
| 5 | Occidental Chemical | Michelle D'Antuono | | |
| 5 | Oklahoma Gas and Electric Co. | Kim Morphis | | |
| 5 | Orlando Utilities Commission | Richard Kinan | | |
| 5 | Pacific Gas and Electric Company | Richard J. Padilla | Affirmative | View |
| 5 | PacifiCorp | Sandra L. Shaffer | Affirmative | View |
| 5 | Portland General Electric Co. | Gary L Tingley | | |
| 5 | PPL Generation LLC | Mark A. Heimbach | Affirmative | View |
| 5 | Progress Energy Carolinas | Wayne Lewis | Affirmative | |
| 5 | PSEG Power LLC | David Murray | Affirmative | View |
| 5 | RRI Energy | Thomas J. Bradish | Negative | View |
| 5 | Sacramento Municipal Utility District | Bethany Wright | Affirmative | |
| 5 | Salt River Project | Glen Reeves | Negative | View |
| 5 | Seattle City Light | Michael J. Haynes | Affirmative | |
| 5 | Seminole Electric Cooperative, Inc. | Brenda K. Atkins | | |
| 5 | South Carolina Electric & Gas Co. | Richard Jones | Affirmative | |
| 5 | Southern Company Generation | William D Shultz | Affirmative | |
| 5 | Tenaska, Inc. | Scott M. Helyer | Negative | |
| 5 | Trans Canada Power | John Fish | | |
| 5 | U.S. Army Corps of Engineers Northwestern Division | Karl Bryan | Affirmative | |
| 5 | U.S. Bureau of Reclamation | Martin Bauer | Affirmative | |
| 5 | Vandolah Power Company L.L.C. | Douglas A. Jensen | Negative | |
| 5 | Wisconsin Electric Power Co. | Linda Horn | Negative | View |
| 5 | Wisconsin Public Service Corp. | Leonard Rentmeester | Affirmative | |
| 6 | AEP Marketing | Edward P. Cox | Affirmative | View |
| 6 | Bonneville Power Administration | Brenda S. Anderson | Affirmative | |
| 6 | Cleco Power LLC | Matthew D Cripps | Abstain | |
| 6 | Consolidated Edison Co. of New York | Nickesha P Carrol | Affirmative | |
| 6 | Constellation Energy Commodities Group | Chris Lyons | Abstain | |
| 6 | Dominion Resources, Inc. | Louis S Slade | Affirmative | |
| 6 | Duke Energy Carolina | Walter Yeager | Affirmative | |
| 6 | Entegra Power Services | Larry W. Rodriguez | Negative | View |
| 6 | Entergy Services, Inc. | Terri F Benoit | Negative | View |
| 6 | Eugene Water & Electric Board | Daniel Mark Bedbury | Affirmative | |
| 6 | Exelon Power Team | Pulin Shah | Negative | |
| 6 | FirstEnergy Solutions | Mark S Travaglianti | Affirmative | |
| 6 | Florida Power & Light Co. | Silvia P Mitchell | Negative | |
| 6 | Great River Energy | Donna Stephenson | Affirmative | |
| 6 | Kansas City Power & Light Co. | Thomas Saitta | Affirmative | View |
| 6 | Lakeland Electric | Paul Shipps | Negative | |
| 6 | Lincoln Electric System | Eric Ruskamp | Affirmative | |
| 6 | Louisville Gas and Electric Co. | Daryn Barker | Affirmative | View |
| 6 | Luminant Energy | Thomas Burke | | |
| 6 | Manitoba Hydro | Daniel Prowse | Affirmative | View |
| 6 | New York Power Authority | Thomas Papadopoulos | Affirmative | |
| 6 | Northern Indiana Public Service Co. | Joseph O'Brien | Affirmative | |
| 6 | PacifiCorp | Gregory D Maxfield | | |
| 6 | Progress Energy | James Eckelkamp | Affirmative | |
| 6 | PSEG Energy Resources & Trade LLC | James D. Hebson | Affirmative | View |
| 6 | Public Utility District No. 1 of Chelan County | Hugh A. Owen | Affirmative | |
| 6 | RRI Energy | Trent Carlson | Negative | View |
| 6 | Salt River Project | Mike Hummel | Negative | View |
| 6 | Santee Cooper | Suzanne Ritter | Affirmative | |
| 6 | Seattle City Light | Dennis Sismaet | Affirmative | |
| 6 | Seminole Electric Cooperative, Inc. | Trudy S. Novak | Negative | |
| 6 | Southern California Edison Co. | Marcus V Lotto | | |
| 6 | Xcel Energy, Inc. | David F. Lemmons | | |
| 8 | | James A Maenner | Affirmative | |
| 8 | | Roger C Zaklukiewicz | Affirmative | |
| 8 | | Edward C Stein | Affirmative | |
| 8 | Ascendant Energy Services, LLC | Raymond Tran | | |
| 8 | JDRJC Associates | Jim D. Cyrulewski | Affirmative | |
| 8 | Power Energy Group LLC | Peggy Abbadini | Affirmative | |
| 8 | SPS Consulting Group Inc. | Jim R Stanton | Negative | View |



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|----|--|------------------------------|-------------|--|
| 8 | Volkman Consulting, Inc. | Terry Volkman | Affirmative | |
| 9 | California Energy Commission | William Mitchell Chamberlain | Affirmative | |
| 9 | Commonwealth of Massachusetts Department of Public Utilities | Donald E. Nelson | Affirmative | |
| 9 | Maine Public Utilities Commission | Jacob A McDermott | Abstain | |
| 9 | National Association of Regulatory Utility Commissioners | Diane J. Barney | | |
| 9 | Oregon Public Utility Commission | Jerome Murray | Affirmative | |
| 9 | Utah Public Service Commission | Ric Campbell | Negative | |
| 10 | Electric Reliability Council of Texas, Inc. | Kent Saathoff | Abstain | |
| 10 | Midwest Reliability Organization | Dan R. Schoenecker | Abstain | |
| 10 | New York State Reliability Council | Alan Adamson | Affirmative | |
| 10 | Northeast Power Coordinating Council, Inc. | Guy V. Zito | Affirmative | |
| 10 | ReliabilityFirst Corporation | Jacque Smith | Affirmative | |
| 10 | SERC Reliability Corporation | Carter B Edge | | |
| 10 | Western Electricity Coordinating Council | Louise McCarren | | |
| | | | | |

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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Initial Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

Project 2009-06: Facility Ratings

The initial ballot for proposed standard FAC-008-2 — Facility Ratings and an associated implementation plan ended on January 22, 2010.

Ballot Results

Voting statistics are listed below, and the [Ballot Results](#) Web page provides a link to the detailed results:

Quorum: 89.16%
Approval: 75.16%

Since at least one negative ballot included a comment, these results are not final. A second (or recirculation) ballot must be conducted. Ballot criteria are listed at the end of the announcement.

Next Steps

As part of the recirculation ballot process, the drafting team must draft and post responses to voter comments. The drafting team will also determine whether or not to make revisions to the balloted item(s). Should the team decide to make revisions, the revised item(s) will return to the initial ballot phase.

Project Background

This project involves revisions to FAC-008-1 and FAC-009-1 that result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines and also to two of the three applicable FERC directives in Order 693. The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except the requirement 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 this requirement did not have a reliability-related benefit, and voted against the inclusion of a requirement to meet this directive. Therefore, the requirement was removed from this version.

Project page: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Applicability of Standards in Project

Transmission Owner
Generator Owner

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

Ballot Criteria

Approval requires both a (1) quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention, and (2) A two-thirds majority of the weighted segment votes cast must be affirmative; the number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses. If there are no negative votes with reasons from the first ballot, the results of the first ballot shall stand. If, however, one or more members submit negative votes with reasons, a second ballot shall be conducted.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*

Consideration of Comments on Initial Ballot — Facility Ratings — FAC-008-2 (Project 2009-06)

Summary Consideration: The FR SDT thanks all commenters for their thoughtful consideration of the proposed FAC-008-2 standard. Some of the comments were aimed at providing clarity to requirements without changing the intent of those requirements. The FR SDT agrees with these comments and will have these entered into the NERC Issues Data Base for consideration during the next revision of the standard. These suggested edits include:

1. Revise the phrase “performance history” in R2 and R3 to “historical performance records” to be consistent with R1.
2. Split R1 into two sentences as follows: *R1. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer when the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Ratings will continue up to the high side terminals of the main step up transformer.*
3. Add references in R4 and R5 to provide a link to requirements R1, R2 and R3. An example of this would be to revise R4 as follows: *R4. Each Transmission Owner shall make its Facility Ratings methodology (R3) and each Generator Owner shall each make its documentation for determining its Facility Ratings (R1) and its Facility Ratings methodology (R2) 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.*

A suggestion was made to remove the word “temporary” from the footnotes relative to de-ratings. The SDT believes that the footnote, ‘Such as temporary de-ratings of impaired equipment in accordance with good utility practice’ is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, ‘Operating limitations’. Therefore, no change is necessary.

Some commenters reiterated their prior comments that this standard is duplicative with other NERC Standards (MOD-024, MOD-025, MOD-010, and MOD-011). The FR SDT notes that with industry restructuring has changed the traditional form of planning, procurement, and construction of both generation and transmission facilities. Today, not all generators are planned, built, and owned by the host utilities to which they interconnect. In addition, MOD-024 and MOD-025 are not mandatory and enforceable in the United States and most of Canada. The currently posted draft of MOD-024 does not apply to all generation facilities as it specifically excludes certain classes of generators. The FR SDT does not believe that MOD-024 and MOD-025 should provide the sole basis for determining a Facility Rating – MOD-024 and MOD-025 only require a single verification and this would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is “To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles.” Prior to any generator being placed in service, “Facility Ratings” for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history. MOD-010 only applies to provision of data for those Transmission Owners, Transmission Planners, Generator Owners and Resource Planners specified in the data requirements and reporting procedures of MOD-011. It does not require that Facility Ratings be “determined based on technically sound principles”, the establishment of the Ratings based on the methodology or documentation, nor does it require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States and most of Canada.

Some commenters reiterated their prior comments that this standard should not apply to Generator Owners. The FR SDT believes that it has been remiss in providing an adequate overview of the intent of the various requirements of FAC-008-2 as they apply to Generator Owners. R1 and R2 apply to Generator Owners and should be considered together. R1 relates to the electrical rating of the generator. The FR SDT posted a previous version of the standard with the term “turbine generator” in R1 (see last posting for comment) and stakeholders requested clarity on what

was intended. The FR SDT removed the word “turbine” to indicate that R1 was only the electrical rating. The requirement (R1) does not ask for any ratings of specific equipment within the plant but only the rating at the specific points in the requirement. Where R1 ends, R2 begins. R2 relates to transmission type equipment (if owned by the Generator Owner) from the end point in R1 to the point of interconnection. If a Generator Owner owns any transmission type equipment (as noted in Requirement R2, Part 2.4.1), then that equipment is treated as a transmission facility and R2 applies. Otherwise, there is no Generator Owner applicability for R2. Please note that these are Facility Ratings to be used in long-term planning studies. We agree that a calculated rating should not be used for real-time operations and that the requirements of TOP-002 cover operational revisions to ratings. However, data from Energy Management Systems or testing can only be available after the generator becomes operational. A calculated rating, which may include long-term derates or uprates, or for a planned generator, is useful in a long-term planning study.

Some comments appear to be aimed at compliance issues and the burden of documentation to Generator Owners. The FR SDT went through an exhaustive stakeholder process to develop requirements for Generator Owners that are not burdensome and do not require the Generator Owner to recreate unavailable documentation. R1 only requires a Generator Owner to provide “documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Rating will continue up to the high side terminals of the main step up transformer Facility Rating.” This could be as simple as saying that your Facility Rating is based on the annual full load test that most Generator Owners run. The actual Facility Rating would be the result of that test. R2 only applies if a Generator Owner owns transmission facilities beyond the generator in R1 (if the Generator Owner doesn’t own transmission type equipment, then R2 does NOT apply). R3 begins the Facility Rating process for Transmission Owners. The remainder of the requirements, (except R3), apply to Generator Owners and relate to the output of R1 and R2.

The standard allows many ways of meeting the requirements, and the Generator Owner does not have to provide a “calculated facility rating”. It just needs to provide a rating consistent with its documentation, which can be “design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis”, or “Operational information such as commissioning test results, performance testing or performance history, any of which may be supplemented by engineering analyses.” The FR SDT reiterates its assertion that this standard should apply to Generator Owners and that the “burden of proof” is minimal for the applicable requirements.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedure: http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf.
March 4, 2010

| Voter | Entity | Segment | Vote | Comment |
|--|---------------------------------|---------|-------------|--|
| David Murray | PSEG Power LLC | 5 | Affirmative | <p>“PSEG is voting yes for FAC-008-2 for the following reasons, but also has concerns described below and believes that additional improvements to the standard are essential: Version 2 is an improvement over Version 1, but for generators this standard continues to be redundant with other NERC generation verification and testing standards. The standard also appears to require unnecessary generator rating documentation, as many generators have pointed out that they have never been requested to provide such data to Transmission Operators and Planners. The Requirements, as written, are overly complex, confusing and inconsistent. The language in the requirements is not consistent between the requirements for TOs and GOs. Transmission Owners are required to make only their Facility Ratings methodology available, while Generator Owners are required to make both their documentation for determining Facility Ratings and their Facility Ratings methodology available. PSEG does not understand what the difference is between “documentation for determining Facility Ratings” and “Facilitating Ratings methodology.”</p> <p>Also confusing is that R2.4 refers to “the process by which the Rating of equipment that comprises a Facility is determined.” If all of these, and perhaps other, phrases contemplate the same thing, they should use the same language. Also, if this standard is to remain applicable to generators, the requirements applicable to Transmission Owners and Generator Owners should be symmetrical.”</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The standard uses the term “documentation” for generation equipment where a methodology is not required. For Transmission equipment, a “methodology” is required. R1 deals with ratings for the generation equipment. R2 only applies to a GO if it owns any transmission type equipment between the generator and the transmission system while R3 applies to the transmission facilities owned by the TO.</p> <p>Part 2.4, which is applicable to the GO, is analogous to Part 3.4, which is applicable to the TO, and refers to the details specified in the sub parts (2.4.1 and 2.4.2 for Part 2.4 and 3.4.1 and 3.4.2 for Part 3.4). Therefore, the requirements for the same Facility types are the same for the both the GO and the TO.</p> | | | | |
| Charlie Martin | Louisville Gas and Electric Co. | 5 | Affirmative | <p>“The footnotes reference to temporary derates is inconsistent with the standard's Long Term Planning time horizon. E ON US suggests removing the footnote.”</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The SDT believes that the footnote, ‘Such as temporary de-ratings of impaired equipment in accordance with good utility practice’ is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, ‘Operating limitations’. Therefore, no change is necessary.</p> | | | | |
| Henry Ernst-Jr | Duke Energy Carolina | 3 | Affirmative | <p>“While we agree with FAC-008-2 as presented for ballot, we believe that the Background Information which was included on the last Comment Form (posted August 10, 2009), will be important information for compliance auditors to consider, and should be made part of the Reliability Standard Audit Worksheet (RSAW) for this standard. This same information should also be</p> |

| Voter | Entity | Segment | Vote | Comment |
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| | | | | included in the next revision of FAC-008, perhaps as an Attachment." |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We will encourage and advise the RSAW developers to include the Background Information in the new RSAW for FAC-008 as you suggest.</p> | | | | |
| Larry E Watt | Lakeland Electric | 1 | Negative | A more detailed response is required in order to clear up the uncertainty reflected in the ballot pool e-mail debates. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT can not respond to your comment without further information regarding the "uncertainty reflected in the ballot pool e-mail debates".</p> | | | | |
| Paul B. Johnson | American Electric Power | 1 | Affirmative | AEP proposes that an errata correction be made to requirement 7. The errata will simplify the wording and avoid future interpretation requests as to the conditions when Facility Ratings are to be provided to the specified registered entities. As proposed, the text would read: R7. Each Transmission Owner and Generator Owner shall provide Facility Ratings for its solely and jointly owned, existing and future, Facilities to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. [Violation Risk Factor: Medium] [Time Horizon: Operations Planning] |
| Raj Rana | American Electric Power | 3 | Affirmative | |
| Brock Ondayko | AEP Service Corp. | 5 | Affirmative | |
| Edward P. Cox | AEP Marketing | 6 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Michael Gammon | Kansas City Power & Light Co. | 1 | Affirmative | Although there is progress forward in improving the Facility Ratings standard it remains unclear regarding what is meant by "point of interconnection with a Transmission Owner". In addition, it is unclear regarding the expectations from this standard for a non-operating joint owner of a generating unit. Please consider these points in future revisions. |
| Charles Locke | Kansas City Power & Light Co. | 3 | Affirmative | |
| Thomas Saitta | Kansas City Power & Light Co. | 6 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We encourage you to keep abreast of future revisions to this standard and submit your</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| comments at that time. Specific suggestions for revisions would be encouraged and appreciated. | | | | |
| Mike Blough | Kissimmee Utility Authority | 5 | Affirmative | Although we recognize that it may be a carry over from the existing Version 1 standards, the phrase "solely or jointly owned" ought to be eliminated from the Version 2 standard because it creates ambiguity and confusion. No other standards relating to the responsibility of the Owner (e.g., PRC standards) uses this language. The only other occurrence of this language is in dynamic scheduling and tagging of jointly owned generation, with a very different purpose, and applicable to other types of registration (e.g., BAs and PSEs). The "jointly" owned can be interpreted that every joint owner of a Facility (even the less than 1% owner of a nuclear plant for instance) needs to have a ratings methodology and a rating for the same Facility, which is impractical, a source of confusion, and not what we believe the SDT intended. The Statement of Compliance Registry Criteria defines a Generation Owner as the: "(e)ntity that owns and maintains generating units;" and the Transmission Owner as: "(t)he entity that owns and maintains transmission facilities." Hence, we believe the intent of the SDT is the same as the intent of the Statement of Compliance Registration Criteria; that the entity responsible for maintenance for a jointly owned Facility is the only owner (usually only one owner) that needs to be registered for that Facility (the majority owner of a nuclear plant for instance). If that is the intent, then the phrase "solely and jointly owned" is not required and is only a source of ambiguity and confusion. In addition, we see no need to separate R1 from R2 as long as the combined requirement is quite clear that Facilities between the GSU and the point of interconnection are part of the Generator Owner's responsibility. There seems to be no harm in requiring a methodology for Facilities from the electric generator through the GSU, the methodology could be as simple as "we use manufacturers' specifications" while addressing ambient temperature assumptions, etc. |
| Joseph S. Stonecipher | Beaches Energy Services | 1 | Negative | |
| Thomas E Washburn | Florida Municipal Power Pool | 2 | Negative | |
| Frank Gaffney | Florida Municipal Power Agency | 4 | Negative | |
| Thomas W. Richards | Fort Pierce Utilities Authority | 4 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The use of the terms "solely or jointly owned" is used specifically in this standard to ensure that there are no gaps. Nothing in this standard precludes joint owners from assigning (through contracts or agreements) the responsibility for compliance to one entity.</p> | | | | |
| John J. Blazekovich | Exelon Energy | 1 | Negative | ComEd opposes this standard because of the removal of R7 from the previously balloted version and because of the inclusion of "performance history" in bullet # 3 of R 2.2.1. "Performance history" is not defined and subject to wide ranging interpretation by applicable entities and Regional auditors. |
| <p>Response: The FR SDT thanks you for your comment. Based on industry consensus, R7 was removed from the previous draft of this proposed standard. "Performance history" is intended to allow historical performance (i.e. – actual performance data) of a facility as the basis for methodology used to establish the Ratings of the equipment that comprises the Facility.</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| Russell A Noble | Cowlitz County PUD | 3 | Negative | Cowlitz sees a need to reevaluate applicability to the Generator Owner. If the equipment rating of a generation facility is designed around the prime mover of generation, then the "most limiting" factor is not "equipment." The limiting factor is wind, maximum allowed hydro flow per FERC license, maximum carbon emission allowed, etc. Requiring documented generation rating on equipment per se adds nothing to reliability, but does add unnecessary compliance cost. |

Response: The FR SDT thanks you for your comment. FAC-008 does not address the prime mover. The intent of R1 is to provide documentation as to how a rating of the electrical generation equipment was developed to deliver the power to the BES. Equipment and Facility Ratings are based on the electrical properties only (see definitions below).

Equipment Rating: The maximum and minimum voltage, current, frequency, real and reactive power flows on individual equipment under steady state, short-circuit and transient conditions, as permitted or assigned by the equipment owner.

Facility Rating: The maximum or minimum voltage, current, frequency, or real or reactive power flow through a facility that does not violate the applicable equipment rating of any equipment comprising the facility.

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| Richard J. Padilla | Pacific Gas and Electric Company | 5 | Affirmative | <p>FAC-008 Comments:</p> <p>R1 and R2: Should the generator rating account for the transmission path rating? If not, how is the dispatchable generator output managed?</p> <p>R1.1, R2, & R3: There are differences in the referenced standard organizations. R1.1 refers to ANSI/IEEE and R2 & R3 refer to CIGRE/IEEE. If CIGRE is applicable and ANSI/IEEE too shouldn't it be referenced similarly?</p> <p>R3 lists specific pieces of equipment while R1 and R2 do not. Is there a rationale for including a specific list for TO and not GO; shouldn't the list be eliminated completely?</p> <p>R4: The information required to be made available should be only methodology. There should not be additional requirements for the GO to provide documentation about the methodology. D1.4: Data retention should be since the last audit. "Since last audit period" makes it unclear as to what is required.</p> |
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Response: The FR SDT thanks you for your affirmative vote and comment.

R1 and R2 are separate. The generator output must respect the transmission path rating in real-time. R1 is meant to cover supporting documentation for determining the generator installed capacity, for example, the D curve. R1 is written to accommodate the GO and only requires the GO to have documentation or test reports, etc. but not a methodology to establish a rating. R2 is meant to cover the methodology used to determine the ratings of facilities in the switchyard, i.e., switch, transformers, CT, etc. So, R2 is similar to R3 but applies up to the point of interconnection with the transmission system.

| Voter | Entity | Segment | Vote | Comment |
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| <p>R1.1, R2, & R3: ANSI/IEEE/GIGRE, etc, are examples and are meant to provide flexibility because FERC Order 693 requires that the methodology to be developed in an open and transparent forum.</p> <p>R2 (GO) and R3 (TO) are the same because they both deal with transmission type facilities. R1 does not have a list.</p> <p>R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Linda R. Jacobson | City of Farmington | 3 | Negative | FEUS agrees facility rating methodology should be documented and ratings should be developed and provided to appropriate entities. However, FEUS SME's are concerned with the wording of Requirement 7 "as scheduled." FEUS agrees "when there is a change or addition" it should be provided to appropriate entities, however, a GO or TO would have no control over "schedules" imposed by other entities. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Ronald D. Schellberg | Idaho Power Company | 1 | Affirmative | I have concern over R7 not bounding the schedule the requesting entities can place on TOs and GOs. Suggest language that requesting entities must allow at least xx days to respond. |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Ralph Frederick Meyer | Empire District Electric Co. | 1 | Negative | <p>I see an interpretation issue with the phrase "Engineering Analysis" used in 1.1 and 2.1 when an entity may be asked to show compliance. A definition of Engineering Analysis is needed.</p> <p>I do not agree with the statements in 2.3 and 3.3. The limiting elements should be a part of the measurements, a phrase in the documentation does not protect the BES, nor excluding it adds risk to the BES.</p> <p>R2 For the Generator owner has a VRF of Lower, while R3 for the Transmission owner has the same requirements but has a VRF of medium. Both the VRF of R2 and R3 should be the same since they are the same requirements.</p> |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>The term "engineering analysis" is not required to be used, but is an option for the GO to use in documenting its Facility Ratings. Proposing a definition for the term would be too prescriptive to include in a standard.</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| <p>The phrase listed in an entity's documentation, in and of itself, will not protect the BES. However, a requirement to include it in your methodology will ensure that the most limiting facility is accounted for and adhered to.</p> <p>The FR SDT has used the VRF Guidelines to determine the VRF for these requirements.</p> | | | | |
| Larry W. Rodriguez | Entegra Power Services | 6 | Negative | <p>I will not re-invent the wheel; I agree with the comments of Jim Stanton and Tom Bradish.</p> <p>Also, the differences between R1 and R2 are ambiguous and very confusing. Don't we want these Standards to be extremely clear and precise for the sake of BES reliability?</p> |
| <p>Response: The FR SDT thanks you for your comment. Please see the responses to comment of Messrs. Stanton and Bradish.</p> <p>The FR SDT believes that the differences between R1 and R2 are clear. R1 applies to the GO and relates to generation electrical ratings. R2 applies to the GO and relates to transmission type facilities (if owned by the GO) between the generator and the point of interconnection.</p> | | | | |
| Daniel Herring | Detroit Edison Company | 4 | Affirmative | <p>I'm voting affirmative only in that this revision is better than the current standard. I do not agree with GO being an applicable entity and I also believe the criteria within this revision to be repetitive, unnecessary, and to broad in scope.</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment.</p> | | | | |
| Kenneth Goldsmith | Alliant Energy Corp. Services, Inc. | 4 | Affirmative | <p>In R1 and R2, for jointly owned units the operating partner should develop the ratings.</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The standard does not preclude such an arrangement.</p> | | | | |
| Daniel Duff | Liberty Electric Power LLC | 5 | Negative | <p>It would seem to me the one-time value in the exercise is making sure you are not going to overload a component of your power train. Every registered entity should have preformed this exercise back in 2007. I would suggest making the standard applicable to GOs seeking to enter the BPS for the first time, or GOs upgrading a major component - generator, step-up transformer, or breaker. You could then satisfy the standard by demonstrating the nameplate rating was at least equal to the replaced part.</p> |
| <p>Response: The FR SDT thanks you for your comment. If an entity has performed these requirements in 2007 and its facilities and "documentation for determining the facility rating" or "facility rating methodology" does not change, then it meets the requirements (assuming it has maintained the appropriate evidence).</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| Michelle Rheault | Manitoba Hydro | 1 | Affirmative | <p>Manitoba Hydro is voting affirmative, however we are submitting the following comments: Manitoba Hydro does not believe that lack of documentation or incomplete documentation rates a VSL of Severe, but would agree that a severe violation is warranted if limits are not provided. Therefore, there should not be any case of a Severe VSL associated with R1, R2, R3, R4 or R5. A Severe Violation Severity Level should be limited to situations where rating data is not provided (ie. a violation of R7). The critical issue is that planners and operators of the electric system have rating data. How does the failure to make a Facility Ratings Methodology document available for inspection (a violation of R4) jeopardize the reliability of the system? The applicability of the proposed revisions to FAC-008 to older facilities is left open to interpretation in the current draft. Many transmission and generation facilities have been in service for years under ratings established at the time of construction-and documentation of the basis for those ratings may no longer be available. Requiring recreation of those ratings now, if that is what the drafting team expects, could impose tremendous costs on the industry to perform the record searches and field work that would be required to document the basis for specific ratings. The current proposal requires that the methodology indentify how Equipment Rating standard(s) were used as well as how ratings provided by manufacturers were considered. For older facilities or facilities acquired from other entities, the basis for ratings may not have been well documented, or documented at all. Likewise, manufacturers ratings may no longer be available, and indeed, the manufacturer may no longer exist. These facilities have been operated for a number of years, presumably without problems. A narrow interpretation of Requirement 2.2 and Requirement 3.2 would force entities to collect voluminous information on facilities, at a tremendous cost. These costs would be borne by customers with potentially little, if any, demonstrable benefit to reliability. A clarification that this standard is not intended to require entities to recreate documentation or other information needed to justify historic ratings would provide certainty and would avoid the costly and time-consuming process of recreating lost data. Manitoba Hydro recommends that the words "if available" be added to the end of Requirements R2.2.2 and R3.2.2.</p> |
| Greg C Parent | Manitoba Hydro | 3 | Affirmative | |
| Mark Aikens | Manitoba Hydro | 5 | Affirmative | |
| Daniel Prowse | Manitoba Hydro | 6 | Affirmative | |

Response: The FR SDT thanks you for your affirmative vote and comment.

VSL: The VSL is an indicator of how badly an entity failed to comply with the requirement – it does not consider the impact of noncompliance on the BES. The VRF is determined based on risk to the BES (lower and medium for these requirements). Therefore it is appropriate to have a severe VSL for each of the requirements listed.

Older Facilities: The FR SDT does not intend for entities to have to recreate voluminous documentation to meet these requirements. The Requirement R2 states only that the methodology address how parts 2.2.2 and 3.2.2 were *considered*. The standard also allows for the use of "performance history" (see requirements 2.1 and 3.1).

| Voter | Entity | Segment | Vote | Comment |
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| James B Lewis | Consumers Energy | 5 | Negative | My issue here is one of double (maybe triple.) jeopardy. The FAC deals with Facility Ratings. For Generator Owners, these are well covered in MOD- 024 and 025, and MOD-010 and 011. They are also required and covered in the mandated interconnection agreements. As the MODs and this FAC each require something a bit different, a potential compliance trap exists. If an auditor asks about the rating of a unit at a power plant, we would likely need to keep two or three sets of paperwork to respond as the various MODs and this FAC have slightly different requirements. In my view, this does nothing to improve the reliability of the BES. The applicability to Generator Owners was wrong from the beginning and is still wrong. Otherwise, the changes the SDT has come up with on this revision are pretty good. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 only applies to provision of data for those TOs, TPs, GOs and RPs specified in the data requirements and reporting procedures of MOD-011. MOD-010 does not cover methodology or documentation, the establishment of the Ratings based on the methodology or documentation, nor does it require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States or in most of Canada. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility rating because, at best, a single verification by itself, following what is required in MOD-024 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records.</p> | | | | |
| Mark Ringhausen | Old Dominion Electric Coop. | 4 | Negative | ODEC feels that the applicability of this standard should not apply to generators as they are being tested via the MOD standards for the capabilities and these testing results should be used by operations and planning for their models not some rating methodology. Make this change and I can vote Yes for this standard. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 only applies to provision of data for those TOs, TPs, GOs and RPs specified in the data requirements and reporting procedures of MOD-011. MOD-010 does not cover methodology or documentation, the establishment of the Ratings based on the methodology or documentation, nor does it require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States or in most of Canada. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records.</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| Mark Sampson | PacifiCorp | 1 | Affirmative | PacifiCorp is voting "yes" for the current draft of FAC-008-2 because it is generally in support of the standard as currently written and believes that it is a significant improvement on the currently effective FAC-008-1 and FAC-009-1. However, in the event the standards drafting team reviews the standard again before it is submitted to FERC, PacifiCorp recommends that the standard drafting team consider striking requirement R2.4.2 from the standard, or, in the alternative, provide more detail as to what constitutes an Emergency Rating for a generation facility. R2.4.2 requires Generator Owners to include Normal and Emergency Ratings in the scope of Ratings addressed in the process by which the Rating of equipment that comprises a Facility is determined. PacifiCorp believes that this requirement should not be applicable to Generator Owners because generating facilities do not have Emergency Ratings in the same way as transmission facilities. The definition of Emergency Rating states that such rating assumes acceptable loss of equipment life or other physical or safety limitations for the equipment involved. Running a generating facility above the Normal Rating would immediately result in the unacceptable loss of equipment life or other physical or safety limitations. Therefore, there is not a realistic way to develop an Emergency Rating for a generator, even for a finite period of time. |
| John Apperson | PacifiCorp | 3 | Affirmative | |
| Sandra L. Shaffer | PacifiCorp | 5 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. R2 relates to transmission type equipment only (not generator facilities which are covered in R1) that a GO may own up to the point of interconnection. If a GO does not own any transmission type equipment, then R2 is not applicable.</p> | | | | |
| James D. Hebson | PSEG Energy Resources & Trade LLC | 6 | Affirmative | <p>PSEG is voting "yes" for FAC-008-2 for the following reasons, but also has concerns described below and believes that additional improvements to the standard are essential:</p> <ol style="list-style-type: none"> 1. Version 2 is an improvement over Version 1, but for generators this standard continues to be redundant with other NERC generation verification and testing standards. 2. The standard also appears to require unnecessary generator rating documentation, as many generators have pointed out that they have never been requested to provide such data to Transmission Operators and Planners. 3. The Requirement, as written, are overly complex, confusing and inconsistent. Also, the language in the requirements is not consistent between the requirements for TOs and GOs. While Transmission Owners are required to make only their Facility Ratings methodology available, Generator Owners are required to make both their documentation for determining Facility Ratings and their Facility Ratings methodology available. PSEG does not understand what the difference is between "documentation for determining Facility Ratings" and "Facility Ratings methodology." Also confusing is that R2.4 refers to "the process by which the Rating of equipment that comprises a Facility is determined." If all of these, and perhaps other, phrases contemplate the same thing, they |
| Kenneth D. Brown | Public Service Electric and Gas Co. | 1 | Affirmative | |
| Jeffrey Mueller | Public Service Electric and Gas Co. | 3 | Affirmative | |

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| | | | | should use the same language. Also, if this standard is to remain applicable to generators, the requirements applicable to Transmission Owners and Generator Owners should be symmetrical." |

Response: The FR SDT thanks you for your comment.

*The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not facility ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history.

* The FR SDT does not intend for entities to have to recreate voluminous documentation to meet these requirements. The Requirements R2 and R3 say only that the methodology address how Parts 2.2.2 and 3.2.2 were *considered*. The standard also allows for the use of "performance history" (see Requirements R2 and R3, Parts 2.1 and 3.1).

*R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.

*Part 2.4, which is applicable to the GO, is analogous to Part 3.4, which is applicable to the TO, and refers to the details specified in the sub parts (2.4.1 and 2.4.2 for Part 2.4 and 3.4.1 and 3.4.2 for Part 3.4). Therefore, the requirements for the same Facility types are the same for the both the GO and the TO.

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| Joseph G. DePoorter | Madison Gas and Electric Co. | 4 | Negative | R1 is confusing and recommend that it be re-written to read: "Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer when the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Ratings will continue up to the high side terminals of the main step up transformer." |
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Response: The FR SDT thanks you for your comment. We concur with your comment and will have it added to the NERC Issues Data Base for consideration in the next revisions to the standard.

| Voter | Entity | Segment | Vote | Comment |
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| John J. Moraski | Baltimore Gas & Electric Company | 1 | Affirmative | <p>Requirement (R1) of the proposed new standard states the following: Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. This statement assumes the point of interconnect dividing asset ownership between the Generator and Transmission Owners is either the low or high side terminals of the main step up transformer.</p> <p>However, there may be cases where the point of interconnect is not the main step up transformer. The wording of this requirement is too prescriptive by stating a specific asset as the point of interconnect. We recommend changing the wording of the requirement to state that the Generator Owner is responsible for determining the Facility Ratings up to the interconnect point and the Transmission Owner is also responsible for determining the Facility Ratings up to the interconnect point. An alternative to the current wording for the requirement could be: Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the point of interconnection. (For example, if the point of interconnection is the main step up transformer; if the Generator Owner does not own the main step up transformer, the Generator Owner is responsible for the Facility Ratings up to the low side terminals of the main step up transformer; however, if the Generator Owner does own the main step up transformer, the Generator Owner is responsible for the Facility Ratings up to the high side terminals of the main step up transformer.)</p> |

Response: The FR SDT thanks you for your affirmative vote and comment. The FR SDT agrees with your point that the main step up transformer may not be the point of interconnection. R1 and R2 apply to Generator Owners and should be considered together to address your concern. R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection.

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| Robert Kondziolka | Salt River Project | 1 | Negative | <p>SRP believes that facility ratings information needs to be shared between the appropriate reliability entities. We agree that the proposed Standard FAC-008-2 generally meets that objective. However, Requirement 7 of the Standard causes us some concern. The requirement states that the TO and GO should provide Facility Ratings to its associated RC, PC, TP, TOP, and TO, "as scheduled by such requesting entities." The schedule to provide the information is at the sole discretion of the requesting entity. An unreasonable schedule could result in the GO or TO being non-compliance to the requirement.</p> |
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Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.

| Voter | Entity | Segment | Vote | Comment |
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| John T. Underhill | Salt River Project | 3 | Negative | SRP believes that facility ratings information needs to be shared between the appropriate reliability entities. We agree that the proposed Standard FAC-008-2 generally meets that objective. However, Requirement 7 of the Standard causes us some concern. The requirement states that the TO and GO should provide Facility Ratings to its associated RC, PC, TP, TOP, and TO, "as scheduled by such requesting entities." The schedule to provide the information is at the sole discretion of the requesting entity. An unreasonable schedule could result in the GO or TO being non-compliance to the requirement. SRP suggests that an additional requirement could be added to establish reasonable parameters for what the schedule to provide the Facilities Rating information might be. Another alternative could be that the language in Requirement 7 be altered to state "based on the schedule agreed to by the entities providing and receiving the information." |
| Glen Reeves | Salt River Project | 5 | Negative | |
| Mike Hummel | Salt River Project | 6 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. Regarding your suggestion for alternative language for the requirement: If one party declines to agree to a schedule, then both parties could be in violation of the requirement. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Edwin Les Barrow | City Public Service of San Antonio | 3 | Negative | The concept of "ratings" in relation to generation has no real correlation to BES reliability. Unit capability as reported through MOD standards is relevant to reliability. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not facility ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history.</p> | | | | |
| Duncan Brown | Calpine Corporation | 5 | Negative | The concern identified is that as worded the GO and TO have no control over the schedule they must adhere to in providing the required rating information and that because of this they may be subject to potential penalties for non-compliance. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| Larry Monday | E.ON U.S. LLC | 1 | Affirmative | The footnote reference to temporary derates is inconsistent with the standard's Long Term Planning time horizon. E ON US suggests removing the footnote. |
| Charles A. | Louisville Gas and | 3 | Affirmative | |

| Voter | Entity | Segment | Vote | Comment |
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| Freibert | Electric Co. | | | |
| Daryn Barker | Louisville Gas and Electric Co. | 6 | Affirmative | |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. The SDT believes that the footnote, 'Such as temporary de-ratings of impaired equipment in accordance with good utility practice' is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, 'Operating limitations'. Therefore, no change is necessary.</p> | | | | |
| Richard Salgo | Sierra Pacific Power Co. | 1 | Negative | The reason for the "negative" vote has to do solely with Requirement R7, which compels the responsible entity to provide Facility Ratings to requesting entities "as scheduled by such requesting entities". While this would normally not be problematic, we feel that without clear definition of a reasonable schedule for delivery of such data, the provider of the data will have a degree of compliance uncertainty. We suggest that this requirement be amended to specify a time frame for response to such requests for Facility Ratings, rather than leaving it open to interpretation. |
| <p>Response: The FR SDT thanks you for your comment. The intent of R7 is for entities that have a reliability need for facility ratings to be able to obtain them. Because it is not known in advance the number of ratings requested, the SDT refrained from specifying a time frame to respond. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> | | | | |
| James R. Keller | Wisconsin Electric Power Marketing | 3 | Negative | The revision results in less clarity than before due to the use of imprecise terms. Previously FAC-008 required a Facility Ratings methodology and FAC-009 required Facility Ratings. Now FAC-008-2 requires documentation for determining Facility ratings, a documented methodology for determining facility ratings, and the process by which a Rating is determined. I do agree with the longer timeframes for responding to a request for this data from another entity. |
| Anthony Jankowski | Wisconsin Energy Corp. | 4 | Negative | |
| Linda Horn | Wisconsin Electric Power Co. | 5 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The proposed standard FAC-008-2 is expected to replace both FAC-008-1 and FAC-009-1 in accordance with the recommended changes identified in the Standard Review Guidelines. In addition, the FR SDT assumes that your comment relates to R4 and R5. R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. A similar logic can be extended to R5. We will have your comment added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Jim R Stanton | SPS Consulting | 8 | Negative | The standard requirements in their current state do not define periodicity of facility rating activities |

| Voter | Entity | Segment | Vote | Comment |
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| | Group Inc. | | | <p>nor the scope of limiting equipment to be considered.</p> <p>Also, generator output data is abundantly available through other reporting requirements which more accurately reflect the "rating" of the facility, which basically changes every day. This is likely a good standard for transmission elements that do not change much from day to day, but it is nonsense to try and adapt it to a generator. Data for operational and planning needs should be more precise than a "sample day" based on assumed ambient conditions. There is no need for FAC-008-2 to apply to generators.</p> |
| <p>Response: The FR SDT thanks you for your comment. Requirement 7 specifies that the Facility Ratings are to be provided to the "Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities." Each requirement provides sufficient details as to which Facility Ratings are required. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC.</p> <p>The FR SDT assumes that your second comment relates to the MOD family of standards. We also note that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not facility ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records for generators.</p> | | | | |
| Robert D Smith | Arizona Public Service Co. | 1 | Negative | <p>The term "Facility Rating" in R1 needs to be definitive and clearly indicate what facilities are included. Specifically, it needs to clearly spell out if auxiliaries are included. It also needs to be clear whether it is the generator electrical rating or turbine mechanical rating. There are also additional issues that are not touched on with this rating requirement where the rating is not limited by the turbine generator or a component but by regulatory environmental issues.</p> |
| Thomas R. Glock | Arizona Public Service Co. | 3 | Negative | |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT posted a version of the standard with the term "turbine generator" in R1. Stakeholders requested clarity and the word "turbine" was removed. R1 and R2 apply to Generator Owners and should be considered together to address your concern. R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection.</p> | | | | |
| Kirit S. Shah | Ameren Services | 1 | Affirmative | <p>The word 'or' has been misspelled as 'ore' in the High VSL text for Requirements R5 and R7.</p> |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment. We have corrected this and will note this when the standard is posted for recirculation ballot.</p> | | | | |

| Voter | Entity | Segment | Vote | Comment |
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| Kenneth Parker | Entegra Power Group, LLC | 5 | Negative | There are sufficient requirements in various other standards and in IA agreements for generators to provide plant ratings, modeling data, capacity and capability, therefore FAC-008 appears redundant. |
| <p>Response: The FR SDT thanks you for your comment. We are assuming that the redundant standards that you are referring to are in the MOD family of standards. The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. MOD-010 and MOD-011 only apply to data provision and not Facility Ratings. The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records. We also note that IA agreements are not mandatory and enforceable reliability standards.</p> | | | | |
| Charles H Yeung | Southwest Power Pool | 2 | Affirmative | This is a step in the right direction for generator applicability but a new request should be submitted to further define what information from generators is applicable for reliability. |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment.</p> | | | | |
| Mark A. Heimbach | PPL Generation LLC | 5 | Affirmative | This standard is an improvement to the existing versions of FAC-008 & 9 and the effort of the drafting team is appreciated. Please note that PPL Generation has reservations around the applicability of this standard to a GO and would prefer that a team look at all the standards that involve generator ratings/testing, etc. and eliminate any duplicate and unnecessary standards/requirements. |
| <p>Response: The FR SDT thanks you for your affirmative vote and comment.</p> | | | | |
| George R. Bartlett | Entergy Corporation | 1 | Negative | Traditional power plant construction planning has been to select a turbine-generator size based on system requirements for additional generating capacity. The sizing of the generator included a multitude of factors that finally end up with the utility picking the optimum turbine-generator for their needs. The construction design sizes the boiler or reactor and the auxiliary systems to support the size turbine generator that had been selected. Post construction generating units are subjected to performance testing. These testing efforts are usually extensive and tightly controlled. The purpose of this testing is to prove the unit has been designed and constructed to meet the original design specifications. Utilities hold equipment manufacturers and construction companies to pre-construction guarantees. Should an item of equipment be insufficiently sized or inadequate for the purpose it was design to fulfill, the shortcoming will become apparent during the acceptance testing |

| Voter | Entity | Segment | Vote | Comment |
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| | | | | <p>of the unit. The supplier/constructor will be required to remedy that shortcoming. Post testing the unit is declared to "go commercial" and the unit capability is declared at that time and the capability assigned is based on the design and acceptance testing that was performed. The above process is traditional and a long standing industry practice for determining the facility ratings of generating units. The activities in FAC-008 are also traditional for construction of substations. Substation facilities cannot be tested to determine what the facility ratings should be. The inability to demonstrate what the facility rating should be then requires an elaborate process be put into place that assures that each piece of equipment going into that facility is adequately sized. This process required by FAC-008 is sensible and understood and has been followed by utilities constructing substations for many decades. This process in not sensible and is misunderstood and is a complete departure from the normal way of doing business for entities trying to rate generating facilities. It is vastly unfair as it requires an entity attempting to rate a generating facility to reverse engineer virtually every component on the generating unit to prove that it has been sized and / or engineered properly. The procedure is a built in "got you" for any audit of any generating station. Generating units should be removed from the requirements of FAC-008. In addition to the above the reliability requirements MOD-024 and MOD-025 go into great detail to tell generator owners exactly how to rate their generating facilities.</p> |
| Matt Wolf | Entergy Services, Inc. | 3 | Negative | <p>Traditional power plant construction planning has been to select a turbine-generator size based on system requirements for additional generating capacity. The sizing of the generator included a multitude of factors that finally end up with the utility picking the optimum turbine-generator for their needs. The construction design sizes the boiler or reactor and the auxiliary systems to support the size turbine generator that had been selected. Post construction generating units are subjected to performance testing. These testing efforts are usually extensive and tightly controlled. The purpose of this testing is to prove the unit has been designed and constructed to meet the original design specifications. Utilities hold equipment manufacturers and construction companies to pre-construction guarantees. Should an item of equipment be insufficiently sized on inadequate for the purpose it was design to fulfill, the shortcoming will become apparent during the acceptance testing of the unit. The supplier/constructor will be required to remedy that shortcoming. Post testing the unit is declared to "go commercial" and the unit capability is declared at that time and the capability assigned is based on the design and acceptance testing that was performed. The above process is traditional and a long standing industry practice for determining the facility ratings of generating units. The activities in FAC-008 are also traditional for construction of substations. Substation facilities cannot be tested to determine what the facility ratings should be. The inability to demonstrate what the facility rating should be then requires an elaborate process be put into place that assures that each piece of equipment going into that facility is adequately sized. This process</p> |
| Stanley M Jaskot | Entergy Corporation | 5 | Negative | <p>of the unit. The supplier/constructor will be required to remedy that shortcoming. Post testing the unit is declared to "go commercial" and the unit capability is declared at that time and the capability assigned is based on the design and acceptance testing that was performed. The above process is traditional and a long standing industry practice for determining the facility ratings of generating units. The activities in FAC-008 are also traditional for construction of substations. Substation facilities cannot be tested to determine what the facility ratings should be. The inability to demonstrate what the facility rating should be then requires an elaborate process be put into place that assures that each piece of equipment going into that facility is adequately sized. This process</p> |

| Voter | Entity | Segment | Vote | Comment |
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| Terri F Benoit | Entergy Services, Inc. | 6 | Negative | required by FAC-008 is sensible and understood and has been followed by utilities constructing substations for many decades. This process in not sensible and is misunderstood and is a complete departure from the normal way of doing business for entities trying to rate generating facilities. It is vastly unfair as it requires an entity attempting to rate a generating facility to reverse engineer virtually every component on the generating unit to prove that it has been sized and / or engineered properly. The procedure is a built in "got you" for any audit of any generating station. Generating units should be removed from the requirements of FAC-008. In addition to the above the reliability requirements MOD-024 and MOD-025 go into great detail to tell generator owners exactly how to rate their generating facilities. |
| <p>Response: The FR SDT thanks you for your comment. The FR SDT notes that with industry restructuring has changed the traditional form of planning, procurement, and construction of both generation and transmission facilities. Today, not all generators are planned, built and owned by the host utilities, to which they interconnect.</p> <p>In addition, The FR SDT notes that MOD-024 and MOD-025 are not mandatory and enforceable in the United States or in most of Canada. Also, the currently posted draft of MOD-024 does not apply to all generation facilities. The FR SDT also does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself, following what is required in MOD-024-1 and MOD-025, would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or historical performance records.</p> <p>FAC-008-2 does not require Generator Owners to perform any reverse engineering, it only require that they have documentation for determining the Ratings of its Facility(ies) and that the Ratings are based on the documentation.</p> | | | | |
| Keith V. Carman | Tri-State G & T Association Inc. | 1 | Negative | <p>Tri-State has concerns with sections 2.2.4 and 3.2.4. Those sections state that Generator Owners and Transmission Owners must identify how "Operating limitations" were considered in their Facility Rating methodologies. The footnote gives an example using "good utility practices." This is a vague term and should not be used in this standard. "Operating limitations" as described in the footnote are also inconsistent with the Time Horizon of these requirements (Long-term Planning). Operating limitations' impact on facility ratings belongs in an operating standard, not FAC-008.</p> <p>The wording in R4, R5, and M4 is ambiguous. When discussing Generator Owners, the phrase "documentation for determining" can be interpreted to apply to both "its Facility Ratings" and to "its Facility Ratings methodology." The Transmission Owner responsibility is clear in R4 and R5 in that the requirements apply to the Facility Rating methodology and do not apply to documentation for determining the Facility Rating methodology. R2 and R3 have the same wording regarding the Generator Owner and Transmission Owner responsibility for Facility Rating methodology so it appears that the requirements for Generator Owners are also intended to be only Facility Rating</p> |

| Voter | Entity | Segment | Vote | Comment |
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| | | | | methodology. In M4, the order in which the two Generator Owner Facility Rating items are mentioned is reversed and the ambiguity does not exist in that measure. Tri-State recommends that similar changes should be made to R4, R5, and M4 to eliminate the possible confusion. |
| <p>Response: The FR SDT thanks you for your comment.</p> <p>“temporary”: The SDT believes that the footnote, ‘Such as temporary de-ratings of impaired equipment in accordance with good utility practice’ is an example of what may be considered under Requirements R2 and R3, Parts 2.2.4 and 3.2.4, ‘Operating limitations’. Therefore, no change is necessary.</p> <p>R4 and R5: R4 is designed for the TO and GO to make the output of R1-R3 available for review to the appropriate entities. A similar logic can be extended to R5. We will have your comment added to the NERC Issues Data Base for consideration in the next revisions to the standard.</p> | | | | |
| Trent Carlson | RRI Energy | 6 | Negative | <p>We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, “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.” The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from “ratings provided by equipment manufacturers” is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility. However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004. A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the</p> |

| Voter | Entity | Segment | Vote | Comment |
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| | | | | <p>units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is remediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards. FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient.</p> |

| Voter | Entity | Segment | Vote | Comment |
|-----------------|---------------------------------|---------|----------|--|
| Benjamin Church | FPL Energy | 5 | Negative | We appreciate the efforts of the drafting in stripping the questionable Requirement 7 from the revised Standard and posting for a new round of comments and re-ballot. We are disappointed however that the drafting team did not take this re-posting opportunity to correct the remaining fatal flaw in the Standard which is the inclusion of Generator Owner as an applicable entity. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, "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." The flaw is transferring a rating methodology used for predominately static networked components of a transmission system and inappropriately applying the same basic methodology to generating facilities. The reliability of the BES is dependent upon the ability of generating facilities to delivery power to the system which is not equated to the electrical ratings of the components that make up the facility. A Facility Rating for a Generator that is derived from "ratings provided by equipment manufacturers" is not appropriate to use in the operation of the bulk electric system, and to do so presents a risk to the system. For operation of the bulk electric system, it will necessitate that a calculated Facility Rating for a generator would include any degradation to facility systems that would limit the output of the facility. However, such degradations tend to be maintenance related and transitory in nature in that they will be corrected. What is the usefulness of facility rating if it is based on a transitory limitation, especially for planning purposes? Such transitory limitations will be made known for operational purposes as mandated by TOP-002-2 Requirement 3. A calculated facility rating for generators should never be used for operational purposes as the real capability and not the calculated capability should be considered. There are other standards that mandate the reporting of generator capability. They are MOD-010 and IRO-004. A calculated facility rating for generators is not useful for planning purposes. One would assume that periodic applications of a calculated facility rating would account for long term or non-transitory changes to the capability of the facility. However, the units actual output at varying ambient conditions is captured in the TOP's energy management system (EMS). If the long term limitation is re-mediated then it would show up in the units actual output in the EMS. It will also be reported in real time to satisfy the requirements in IRO-004. These sources of facility rating would be more precise than a calculated rating. As these changes to capability are accounted for and reported, changes to planning models would logically follow. There |
| Mike Laney | Luminant Generation Company LLC | 5 | Negative | |

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| Thomas J. Bradish | RRI Energy | 5 | Negative | <p>is no benefit to using a calculated facility rating for planning purposes when a real facility rating is available and indeed mandated by other Standards. FAC-008-2 also references ambient conditions as a factor in facility rating methodology. Ambient conditions are inherently accounted for in capability tests and manufacturer ratings are certainly available to condition capability upon conditions like ambient temperature and humidity. This data is certainly available but it is a sheet or two from a vendor manual and not a facility rating methodology. FAC-008-2 is technically sound and essential for the planning and operation of the networked connection of static components transmission equipment but the requirements are misapplied and a threat to reliability when imposed and used to calculate a generator rating. That the Standard was intended for transmission equipment rather than generators is in part illustrated by Requirement 2.4.2 The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings. Generating stations may have the ability to increase their output for a limited period of time but the Generators themselves do not have emergency ratings that should be used for modeling purposes by system planners. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. As radial components, no one is seriously questioning the ability of the elements of the generating stations to deliver power to the BES. However, generating owners are expending significant time, effort, and resources to acquire and develop documentation to meet the requirements of Facility Ratings for stations that have multiple decades of successful operation. Try to think of one disturbance or blackout that was traced to the facility rating documentation of a generating facility as the culprit. Yet the standard applies the same violation risk factors and penalties to the radial components of a small generating facility as it does to the networked components of the transmission grid. To date, the FAC-008-1 Standard is one in which generator owners are most vulnerable for non-compliance, in spite of the considerable efforts of the generator-owning industry to make sense of a set of requirements which make little sense, and which no operating entity is actually requesting of them. The individuals showing the most interest in Facility Rating documentation are the auditors or the RROs. The reason the standard it is so often violated is not because the industry is inattentive, but it is for documentation errors of successfully operating generating facilities that in reality are imposing no threat to the reliability of the Bulk Electric System. Not only are the standard requirements flawed in their application to generator owners, but the documentation burden of proof, as it is being imposed, is unwarranted. Generator Owner applicability should be stripped from FAC-008-2 and any further reliability needs pursuant to generator performance and capability should be referred to the Generator Verification Project 2007-09.</p> |

Response: The FR SDT thanks you for your comment. The FR SDT believes that we have been remiss in providing an adequate overview of the intent of the

| Voter | Entity | Segment | Vote | Comment |
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| | | | | <p>various requirements of FAC-008-2 as they apply to Generator Owners. R1 and R2 apply to Generator Owners and should be considered together. R1 relates to the electrical rating of the generator. The FR SDT posted a previous version of the standard with the term "turbine generator" in R1 (see pre-ballot posting) and stakeholders requested clarity on what was intended. The FR SDT removed the word "turbine" to indicate that R1 was only the electrical rating.</p> <p>The requirement does not ask for any ratings of specific equipment within the plant but only the rating at the specific points in the requirement. Where R1 ends, R2 begins. R2 relates to transmission equipment (if owned by the GO) from the end point in R1 to the point of interconnection. If a GO owns any transmission type equipment (as noted in Part 2.4.1), then that equipment is treated as transmission facilities and R2 applies. Otherwise, there is no GO applicability for R2. Please note that these are Facility Ratings to be used in long-term planning studies. We agree that a calculated rating should not be used for real-time operations and that the requirements of TOP-002 cover operational revisions to ratings. However, data from EMS or testing can only be available after the generator becomes operational. A calculated rating, which may include long-term derates or uprates, or for a planned generator is useful in a long-term planning study.</p> <p>The FR SDT further notes that TOP-002-2 R3 states, "Each Load Serving Entity and Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Each Balancing Authority and Transmission Service Provider shall coordinate its current-day, next-day, and seasonal operations with its Transmission Operator." It is focused, therefore, on coordination, not methodology or supporting documentation. In any case, it does not address data needed for long term planning.</p> <p>MOD-010 only applies to provision of data for those TOs, TPs, GOs and RPs specified in the data requirements and reporting procedures of MOD-011. MOD-010 does not require that Facility Ratings be "determined based on technically sound principles", does not require the establishment of the Ratings based on the rating methodology or documentation, nor does MOD-010 require the provision of data to the PC, RC or TOP. In addition, MOD-011 is not mandatory and enforceable in the United States or in most of Canada.</p> <p>IRO-004-2 is applicable to the BA, TOP and TSP, not the GO.</p> <p>Normal and Emergency ratings are not included in R1, which provides for the Facility Rating of the generation equipment. R2 is the first instance of applicability to a GO for these ratings and they apply to transmission equipment (if owned by the GO) from the end point in R1 to the point of interconnection. Therefore these two ratings are appropriate.</p> <p>The remainder of your comment appears to be aimed at compliance issues and the burden of documentation to GOs. The FR SDT went through an exhaustive stakeholder process to develop requirements for GOs that were not burdensome and that did not require the GO to recreate unavailable documentation. R1 only requires a GO to provide "documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Rating will continue up to the high side terminals of the main step up transformer Facility Rating." This could be as simple as saying that your Facility Rating is based on the annual full load test that most GOs run. The actual Facility Rating would be the result of that test. R2 only applies if a GO owns transmission facilities beyond the generator in R1 (if the GO doesn't own transmission type equipment, then R2 does NOT apply). R3 begins the Facility Rating process for TOs.</p> <p>The remainder of the requirements (except R3) apply to GOs, and all of them relate to the output of R1 and R2.</p> <p>The standard allows many ways of meeting the requirements, and the GO does not have to provide a "calculated facility rating". It just needs to provide a rating consistent with its documentation, which can be "design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that</p> |

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| <p>has been verified by testing or engineering analysis", or "Operational information such as commissioning test results, performance testing or performance history, any of which may be supplemented by engineering analyses."</p> <p>The FR SDT reiterates its assertion that this standard should apply to Generator Owners and that the "burden of proof" is minimal for the applicable requirements.</p> | | | | |
| Greg Lange | Public Utility District No. 2 of Grant County | 3 | Negative | <p>We are casting a negative vote for several reasons. First in general we are committed to voting against any additional prescriptive standards language while the industry moves to the performance based methodology in development now. We should not be making it worse before we fix it. More specifically to this standard, statements of attestation such as 2.3 and 3.3 are useless waste of management time. Either the ratings are correct or they are not. The additional words in this version draft still leave the notion of most limiting factor on a generation facility vague and hard to follow. The addition of the transmission facility connection do not help to clarify this issue one bit. Our suggestion is to table this revision until it can be developed into a performance based standard and an accompanying set of guidelines.</p> |
| <p>Response: The FR SDT thanks you for your comment. R2 applies to any transmission type equipment owned by the GO, and R3 applies to transmission facilities owned by the TO. The phrase concerning the "most limiting applicable Equipment Rating" listed in an entity's documentation, in and of itself, will not protect the BES. However, a requirement to include it in your methodology, coupled with a requirement to follow the methodology, will ensure that the most limiting facility is accounted for and adhered to. The Standards Committee has directed drafting teams to continue with the work in progress and not wait for more definition on how to develop a results-based standard.</p> | | | | |
| Gregory L Pieper | Xcel Energy, Inc. | 1 | Negative | <p>Xcel Energy believes that this standard, as drafted, is not acceptable because of the inclusion of generating facilities. The concept of arbitrarily applying a methodology historically used for transmission facilities is fundamentally flawed. The flaw begins with the disconnect between the reliability of the Bulk Electric System and the stated Purpose of the standard which is, "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". There are two distinct functions, planning and operation. For planning purposes, the required output of a facility is determined, and then the elements of the facility are designed to achieve that required output. Applying this standard to a generating facility that is in the planning stage presumes that a random set of electrical equipment is accumulated and calculations are then performed to determine its rating. Also, the Standard Drafting Team has stated</p> |

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| Michael Ibold | Xcel Energy, Inc. | 3 | Negative | in its Consideration of Comments that this standard applies only to electrical facilities. In the design and construction of generating facilities, the limit to the facility output is rarely the electrical equipment. It most often is the prime mover or something behind it. Thus, using a "Facility Rating" derived through this standard for planning purposes, would give an incorrect indication of the actual output of the facility which would tend to reduce grid reliability. For grid operations, the Facility Rating obtained by this standard would also be fictitious for the same reason and in the real world is not used. The ratings used by Transmission Operations are those determined by verification testing as required by MOD-024. This is a demonstrated value that can be realistically relied upon. Any temporary changes in the status of generating facility equipment that would cause a reduction in this demonstrated value are reported to the Transmission Operator per TOP-002. This includes facility rating reductions caused by mechanical equipment behind the generator (which are not covered by the proposed FAC-008) as well as the electrical equipment between the generator and the grid. The Standard Drafting Team has discounted the existence of MOD-024 in the past because it has not been approved by FERC. However, the fact remains that it has been approved by NERC and is being widely followed. In fact, many RTO's and ISO's have performance verification requirements where regional requirements may be lacking. The inclusion of "operational information" in R1.1 as a valid methodology is still flawed, since it would still apply only to the electrical equipment and if applied to all equipment in the facility would merely be duplicative of MOD-024. The conclusion is a calculated facility rating for a generator, when real facility capability data is available, is useless and dangerous for operating purposes, and simply useless for planning purposes. Xcel Energy does agree with, and support, the changes made to Requirement 3 for the Transmission Owner allowing the use of performance history in the methodology. If the applicability to the Generator Owner were removed, Xcel Energy would support the rest of the proposed standard as it is written. |
| Liam Noailles | Northern States Power Co. | 5 | Negative | |

Response: The FR SDT thanks you for your comment. The FR SDT believes that we have been remiss in providing an adequate overview of the intent of the various requirements of FAC-008-2 as they apply to Generator Owners. R1 and R2 apply to Generator Owners and should be considered together. R1 relates to the electrical rating of the generator. The FR SDT posted a previous version of the standard with the term "turbine generator" in R1 (see pre-ballot posting) and stakeholders requested clarity on what was intended. The FR SDT removed the word "turbine" to indicate that R1 was only the electrical rating.

The requirement does not ask for any ratings of specific equipment within the plant but only the rating at the specific points in the requirement. Where R1 ends, R2 begins. R2 relates to transmission equipment (if owned by the GO) from the end point in R1 to the point of interconnection. If a GO owns any transmission type equipment (as noted in Part 2.4.1), then that equipment is treated as transmission facilities and R2 applies. Otherwise, there is no GO applicability for R2. Please note that these are Facility Ratings to be used in long-term planning studies. We agree that a calculated rating should not be used for real-time operations and that the requirements of TOP-002 cover operational revisions to ratings. However, a calculated rating, which may include long-term derates or uprates, or for a planned generator is useful in a long-term planning study.

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| | | | | <p>The FR SDT does not believe that MOD-024 and MOD-025 should be the only basis for determining the Facility Rating because, at best, a single verification by itself following what is required in MOD-024-1 and MOD-025 would be a subset of what is required in complying with FAC-008-2. The purpose of FAC-008 is "To ensure Facility Ratings used in the reliable planning and operation of the BES are determined based on technically sound principles." Prior to any generator being placed in service, "Facility Ratings" for a generator are required for BES planning. FAC-008-2 allows the use of test data and/or performance history.</p> <p>Normal and Emergency ratings are not included in R1, which provides for the Facility Rating of the generation equipment. R2 is the first instance of applicability to a GO for these ratings and they apply to transmission equipment (if any) from the end point in R1 to the point of interconnection. Therefore these two ratings are appropriate.</p> <p>The remainder of your comment appears to be aimed at compliance issues and the burden of documentation to GOs. The FR SDT went through an exhaustive stakeholder process to develop requirements for GOs that were not burdensome and that did not require the GO to recreate unavailable documentation. R1 only requires a GO to provide "documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer. When the Generator Owner does own the main step up transformer, the Facility Rating will continue up to the high side terminals of the main step up transformer Facility Rating." This could be as simple as saying that your Facility Rating is based on the annual full load test that most GOs run. The actual Facility Rating would be the result of that test. R2 only applies if a GO owns transmission facilities beyond the generator in R1 (if the GO doesn't own transmission type equipment, then R2 does NOT apply). R3 begins the Facility Rating process for TOs.</p> <p>The remainder of the requirements (except R3) apply to GOs and all of them relate to the output of R1 and R2.</p> <p>The FR SDT reiterates its assertion that this standard should apply to Generator Owners and that the "burden of proof" is minimal for the applicable requirements.</p> |

Implementation Plan for FAC-008-02 — Facility Ratings

Prerequisite Approvals

There are no other reliability standards or Standard Authorization Requests (SARs), in progress or approved, that must be implemented before this standard can be implemented.

Modified Standards

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings should both be retired when FAC-008-02 becomes effective.

Compliance with Standards

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Proposed Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before the new standard becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

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 |

| SAR Requestor Information | SAR Type <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 |

| | |
|----------------|--|
| Purpose | <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
|----------------|--|

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

Standards Authorization Request Form

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.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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. |

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes | |
| 5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

| Standard No. | Explanation |
|---------------------|--------------------|
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| | |

Related SARs

| SAR ID | Explanation |
|---------------|--------------------|
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Regional Differences

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

The drafting team 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 |

Standards Authorization Request Form

| | | | |
|----------------------------|--|---|---|
| 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. |
|----------------------------|--|---|---|

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

Associated Documents

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

Functional Model Version 3

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

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 |

| SAR Requestor Information | SAR Type <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 |

| |
|--|
| <p>Purpose</p> <p>The purpose of revising these standards is to:</p> <ol style="list-style-type: none"> 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. 2. Consider applicable FERC directives from Order 693 3. Bring the standards into conformance with the latest version of the Reliability Standards Development Procedure and the ERO Rules of Procedure. (Attachment 1) 4. Satisfy the standards procedure requirement for five-year review of the standards. |
|--|

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

Standards Authorization Request Form

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.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <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. |

Standards Authorization Request Form

Reliability and Market Interface Principles

| | |
|--|--|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards. |
| <input 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. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes | |
| 2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes | |
| 3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes | |
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Standards Authorization Request Form

Related Standards

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

| SAR ID | Explanation |
|---------------|--------------------|
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Regional Differences

| Region | Explanation |
|---------------|--------------------|
| ERCOT | |
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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

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Time Horizon

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

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- **Operations Planning** — operating and resource plans from day-ahead up to and including seasonal.
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The violation severity levels should be based on the following criteria:

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| 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 |

Standards Authorization Request Form

| | | | |
|----------------------------|--|---|---|
| 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. |
|----------------------------|--|---|---|

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

Associated Documents

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

Functional Model Version 3

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

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. 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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
- Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
- 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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*]
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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*] [*Time Horizon: Operations Planning*]
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning*]
- R7. Each Transmission Owner and Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. [*Violation Risk Factor: Medium*] [*Time Horizon: Operations Planning*]

C. Measures

- M1. Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement 4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings,, 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 5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement 6).
- M7.** Each Transmission Owner and Generator Owner shall 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), Transmission Owner(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 documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6. The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, Measure M5, and Measure M7 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility's rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 3.2.3 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 3.2.3 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating</p> | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility's rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|---|---|
| | <ul style="list-style-type: none"> 3.2.4 | <ul style="list-style-type: none"> 3.2.4 | methodology three of the following Parts of Requirement R3: <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 3.2.3 3.2.4 | <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 3.2.3 3.2.4 |
| R4 | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request. | The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request. | The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3) |
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request. OR The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5) | The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request. OR The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5) | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned |

Standard FAC-008-2 — Facility Ratings

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|---|
| R7 | Facilities. (R6) | 10% of its solely owned and jointly owned Facilities. (R6) | owned and jointly owned Facilities. (R6) | Facilities. (R6) |
| | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) |

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. **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. Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 1.1. The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.-
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2. The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2. Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 2.1. The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
- Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
- 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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]*
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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] [Time Horizon: Operations Planning]*
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7. Each Transmission Owner and Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

C. Measures

- M1. Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement 4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings,, 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 5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement 6).
- M7.** Each Transmission Owner and Generator Owner shall 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), Transmission Owner(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 documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6. The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, Measure M5, and Measure M7 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

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| | <ul style="list-style-type: none"> 3.2.2 3.2.3 3.2.4 | <ul style="list-style-type: none"> 3.2.2 3.2.3 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 3.2.3 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 3.2.2 3.2.3 3.2.4 |
| R4 | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request. | The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request. | The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3) |
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7) | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) |



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Recirculation Ballot Window Open

March 8–18, 2010

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

Project 2009-06: Facility Ratings

A recirculation ballot window for proposed standard FAC-008-2 — Facility Ratings and an associated implementation plan is now open **until 8 p.m. Eastern on March 18, 2010**.

Please note that three minor corrections have been made to FAC-008-2. A stakeholder noted errata in the “High” Violation Severity Levels (VSLs) for Requirements R5 and R7 – “ore” was replaced with “or.” In addition, an extra period was removed from the first bulleted item in Requirement R1. “Redline to initial ballot” and “clean” versions are posted. The edits are considered errata, not content revisions, allowing the standard to proceed to the recirculation ballot stage.

Instructions

Members of the ballot pool associated with this project may log in and submit their votes from the following page: <https://standards.nerc.net/CurrentBallots.aspx>

Recirculation Ballot Process

The Standards Committee encourages all members of the ballot pool to review the consideration of comments submitted with the initial ballots. In the recirculation ballot, votes are counted by exception only — if a ballot pool member does not submit a revision to that member’s original vote, the vote remains the same as in the first ballot. Members of the ballot pool may:

- Reconsider and change their vote from the first ballot.
- Vote in the second ballot even if they did not vote on the first ballot.
- Take no action if they do not want to change their original vote.

Next Steps

Voting results will be posted and announced after the ballot window closes.

Project Background

This project involves revisions to FAC-008-1 and FAC-009-1 that result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines and also to two of the three applicable FERC directives in Order 693. The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except the requirement 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 this requirement did not have a reliability-related benefit, and voted against the inclusion of a requirement to meet this directive. Therefore, the requirement was removed from this version.

Project page: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Applicability of Standards in Project

Transmission Owner

Generator Owner

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance,
please contact Shaun Streeter at shaun.streeter@nerc.net or at 609.452.8060.*

User Name

Password

Log in

Register

- Ballot Pools
- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

[Home Page](#)

| Ballot Results | |
|-------------------------------|--|
| Ballot Name: | Project 2009-06 - Facility Ratings - FAC-008-2 _rc |
| Ballot Period: | 3/8/2010 - 3/18/2010 |
| Ballot Type: | recirculation |
| Total # Votes: | 268 |
| Total Ballot Pool: | 286 |
| Quorum: | 93.71 % The Quorum has been reached |
| Weighted Segment Vote: | 78.15 % |
| Ballot Results: | The Standard has Passed |

| Summary of Ballot Results | | | | | | | | |
|---------------------------|-------------|----------------|-------------|--------------|-----------|--------------|-----------------|-----------|
| Segment | Ballot Pool | Segment Weight | Affirmative | | Negative | | Abstain # Votes | No Vote |
| | | | # Votes | Fraction | # Votes | Fraction | | |
| 1 - Segment 1. | 80 | 1 | 55 | 0.809 | 13 | 0.191 | 8 | 4 |
| 2 - Segment 2. | 11 | 0.9 | 9 | 0.9 | 0 | 0 | 2 | 0 |
| 3 - Segment 3. | 62 | 1 | 39 | 0.75 | 13 | 0.25 | 7 | 3 |
| 4 - Segment 4. | 20 | 1 | 11 | 0.733 | 4 | 0.267 | 4 | 1 |
| 5 - Segment 5. | 59 | 1 | 34 | 0.667 | 17 | 0.333 | 1 | 7 |
| 6 - Segment 6. | 33 | 1 | 21 | 0.724 | 8 | 0.276 | 3 | 1 |
| 7 - Segment 7. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 - Segment 8. | 8 | 0.7 | 6 | 0.6 | 1 | 0.1 | 0 | 1 |
| 9 - Segment 9. | 6 | 0.4 | 3 | 0.3 | 1 | 0.1 | 2 | 0 |
| 10 - Segment 10. | 7 | 0.4 | 3 | 0.3 | 1 | 0.1 | 2 | 1 |
| Totals | 286 | 7.4 | 181 | 5.783 | 58 | 1.617 | 29 | 18 |

| Individual Ballot Pool Results | | | | |
|--------------------------------|------------------------------------|-----------------|-------------|----------------------|
| Segment | Organization | Member | Ballot | Comments |
| 1 | Allegheny Power | Rodney Phillips | Affirmative | |
| 1 | Ameren Services | Kirit S. Shah | Affirmative | View |
| 1 | American Electric Power | Paul B. Johnson | Affirmative | View |
| 1 | American Transmission Company, LLC | Jason Shaver | Affirmative | |
| 1 | Arizona Public Service Co. | Robert D Smith | Negative | View |
| 1 | Avista Corp. | Scott Kinney | Abstain | |
| 1 | Baltimore Gas & Electric Company | John J. Moraski | Affirmative | View |
| 1 | BC Transmission Corporation | Gordon Rawlings | Affirmative | |

| | | | | |
|---|---|------------------------------|-------------|----------------------|
| 1 | Beaches Energy Services | Joseph S. Stonecipher | Negative | View |
| 1 | Black Hills Corp | Eric Egge | Affirmative | |
| 1 | Bonneville Power Administration | Donald S. Watkins | Affirmative | |
| 1 | Brazos Electric Power Cooperative, Inc. | Tony Kroskey | Abstain | |
| 1 | CenterPoint Energy | Paul Rocha | Abstain | |
| 1 | Central Maine Power Company | Brian Conroy | Affirmative | |
| 1 | City of Vero Beach | Randall McCamish | Negative | |
| 1 | City Utilities of Springfield, Missouri | Jeff Knottek | Abstain | |
| 1 | Consolidated Edison Co. of New York | Christopher L de Graffenried | Affirmative | |
| 1 | Dairyland Power Coop. | Robert W. Roddy | Affirmative | |
| 1 | Dominion Virginia Power | William L. Thompson | Affirmative | |
| 1 | Duke Energy Carolina | Douglas E. Hils | Affirmative | |
| 1 | E.ON U.S. LLC | Larry Monday | Affirmative | View |
| 1 | East Kentucky Power Coop. | George S. Carruba | Affirmative | |
| 1 | Empire District Electric Co. | Ralph Frederick Meyer | Negative | View |
| 1 | Entergy Corporation | George R. Bartlett | Abstain | |
| 1 | Exelon Energy | John J. Blazekovich | Negative | View |
| 1 | FirstEnergy Energy Delivery | Robert Martinko | Affirmative | |
| 1 | Florida Keys Electric Cooperative Assoc. | Dennis Minton | Negative | |
| 1 | Gainesville Regional Utilities | Luther E. Fair | Affirmative | |
| 1 | Georgia Transmission Corporation | Harold Taylor, II | Affirmative | |
| 1 | Great River Energy | Gordon Pietsch | Affirmative | |
| 1 | Hoosier Energy Rural Electric Cooperative, Inc. | Robert Solomon | Abstain | |
| 1 | Hydro One Networks, Inc. | Ajay Garg | Affirmative | |
| 1 | Hydro-Quebec TransEnergie | Albert Poire | Affirmative | |
| 1 | Idaho Power Company | Ronald D. Schellberg | Affirmative | View |
| 1 | ITC Transmission | Elizabeth Howell | Affirmative | |
| 1 | JEA | Ted E Hobson | Affirmative | |
| 1 | Kansas City Power & Light Co. | Michael Gammon | Affirmative | View |
| 1 | Lakeland Electric | Larry E Watt | Negative | View |
| 1 | Lee County Electric Cooperative | John W Delucca | Affirmative | |
| 1 | Lincoln Electric System | Doug Bantam | | |
| 1 | Long Island Power Authority | Jonathan Appelbaum | Affirmative | |
| 1 | Manitoba Hydro | Michelle Rheault | Affirmative | View |
| 1 | MEAG Power | Danny Dees | Affirmative | |
| 1 | MidAmerican Energy Co. | Terry Harbour | Affirmative | |
| 1 | Northeast Utilities | David H. Boguslawski | Affirmative | |
| 1 | Northern Indiana Public Service Co. | Kevin M Largura | Affirmative | |
| 1 | NorthWestern Energy | John Canavan | Affirmative | |
| 1 | Ohio Valley Electric Corp. | Robert Matthey | Affirmative | |
| 1 | Omaha Public Power District | Lorees Tadros | | |
| 1 | Orange and Rockland Utilities, Inc. | Edward Bedder | Affirmative | |
| 1 | Orlando Utilities Commission | Brad Chase | Affirmative | |
| 1 | Otter Tail Power Company | Lawrence R. Larson | Affirmative | |
| 1 | Pacific Gas and Electric Company | Chifong L. Thomas | Affirmative | |
| 1 | PacifiCorp | Mark Sampson | Affirmative | View |
| 1 | Platte River Power Authority | John C. Collins | Affirmative | |
| 1 | Portland General Electric Co. | Frank F. Afranji | Abstain | |
| 1 | Potomac Electric Power Co. | Richard J. Kafka | Affirmative | |
| 1 | PowerSouth Energy Cooperative | Larry D. Avery | Negative | |
| 1 | PP&L, Inc. | Ray Mammarella | | |
| 1 | Progress Energy Carolinas | Sammy Roberts | Affirmative | |
| 1 | Public Service Electric and Gas Co. | Kenneth D. Brown | Affirmative | View |
| 1 | Puget Sound Energy, Inc. | Catherine Koch | Affirmative | |
| 1 | Sacramento Municipal Utility District | Tim Kelley | Affirmative | |
| 1 | Salt River Project | Robert Kondziolka | Negative | View |
| 1 | San Diego Gas & Electric | Linda Brown | Affirmative | |
| 1 | Santee Cooper | Terry L. Blackwell | Affirmative | |
| 1 | SCE&G | Henry Delk, Jr. | Affirmative | |
| 1 | Seattle City Light | Pawel Krupa | Affirmative | |
| 1 | Sierra Pacific Power Co. | Richard Salgo | Negative | View |
| 1 | Southern California Edison Co. | Dana Cabbell | Affirmative | |
| 1 | Southern Company Services, Inc. | Horace Stephen Williamson | Affirmative | |
| 1 | Southern Illinois Power Coop. | William G. Hutchison | Affirmative | |
| 1 | Southwest Transmission Cooperative, Inc. | James L. Jones | Abstain | View |
| 1 | Southwestern Power Administration | Gary W Cox | Negative | |

| | | | | |
|---|--|------------------------------|-------------|----------------------|
| 1 | Sunflower Electric Power Corporation | Noman Lee Williams | | |
| 1 | Tri-State G & T Association Inc. | Keith V. Carman | Negative | View |
| 1 | Tucson Electric Power Co. | John Tolo | Affirmative | |
| 1 | Westar Energy | Allen Klassen | Affirmative | |
| 1 | Western Area Power Administration | Brandy A Dunn | Affirmative | |
| 1 | Xcel Energy, Inc. | Gregory L Pieper | Negative | View |
| 2 | Alberta Electric System Operator | Jason L. Murray | Affirmative | |
| 2 | BC Transmission Corporation | Famaraz Amjadi | Affirmative | |
| 2 | Electric Reliability Council of Texas, Inc. | Chuck B Manning | Abstain | |
| 2 | Florida Municipal Power Pool | Thomas E Washburn | Abstain | |
| 2 | Independent Electricity System Operator | Kim Warren | Affirmative | |
| 2 | ISO New England, Inc. | Kathleen Goodman | Affirmative | |
| 2 | Midwest ISO, Inc. | Jason L Marshall | Affirmative | |
| 2 | New Brunswick System Operator | Alden Briggs | Affirmative | |
| 2 | New York Independent System Operator | Gregory Campoli | Affirmative | |
| 2 | PJM Interconnection, L.L.C. | Tom Bowe | Affirmative | |
| 2 | Southwest Power Pool | Charles H Yeung | Affirmative | View |
| 3 | Alabama Power Company | Bobby Kerley | Affirmative | |
| 3 | Allegheny Power | Bob Reeping | Affirmative | |
| 3 | American Electric Power | Raj Rana | Affirmative | View |
| 3 | Arizona Public Service Co. | Thomas R. Glock | Negative | View |
| 3 | Atlantic City Electric Company | James V. Petrella | Affirmative | |
| 3 | BC Hydro and Power Authority | Pat G. Harrington | Abstain | |
| 3 | Bonneville Power Administration | Rebecca Berdahl | Affirmative | |
| 3 | Central Lincoln PUD | Steve Alexanderson | Negative | View |
| 3 | City of Farmington | Linda R. Jacobson | Negative | View |
| 3 | Cleco Utility Group | Bryan Y Harper | Abstain | |
| 3 | Commonwealth Edison Co. | Stephen Lesniak | Negative | |
| 3 | Consolidated Edison Co. of New York | Peter T Yost | Affirmative | |
| 3 | Consumers Energy | David A. Lapinski | Negative | |
| 3 | Cowlitz County PUD | Russell A Noble | Negative | View |
| 3 | CPS Energy | Edwin Les Barrow | Negative | View |
| 3 | Delmarva Power & Light Co. | Michael R. Mayer | Affirmative | |
| 3 | Detroit Edison Company | Kent Kujala | Affirmative | |
| 3 | Dominion Resources, Inc. | Jalal (John) Babik | Affirmative | |
| 3 | Duke Energy Carolina | Henry Ernst-Jr | Affirmative | View |
| 3 | Entergy Services, Inc. | Matt Wolf | Negative | View |
| 3 | FirstEnergy Solutions | Joanne Kathleen Borrell | | |
| 3 | Florida Municipal Power Agency | Joe McKinney | Abstain | |
| 3 | Florida Power & Light Co. | W. R. Schoneck | Abstain | |
| 3 | Florida Power Corporation | Lee Schuster | Affirmative | |
| 3 | Georgia Power Company | Leslie Sibert | Affirmative | |
| 3 | Georgia System Operations Corporation | R Scott S. Barfield-McGinnis | Abstain | |
| 3 | Grays Harbor PUD | Wesley W Gray | Affirmative | |
| 3 | Great River Energy | Sam Kokkinen | Affirmative | |
| 3 | Gulf Power Company | Gwen S Frazier | Affirmative | |
| 3 | Hydro One Networks, Inc. | Michael D. Penstone | Affirmative | |
| 3 | JEA | Garry Baker | Affirmative | |
| 3 | Kansas City Power & Light Co. | Charles Locke | Affirmative | View |
| 3 | Kissimmee Utility Authority | Gregory David Woessner | Abstain | |
| 3 | Lakeland Electric | Mace Hunter | Affirmative | |
| 3 | Lincoln Electric System | Bruce Merrill | Affirmative | |
| 3 | Louisville Gas and Electric Co. | Charles A. Freibert | Affirmative | View |
| 3 | Manitoba Hydro | Greg C Parent | Affirmative | View |
| 3 | MidAmerican Energy Co. | Thomas C. Mielnik | Affirmative | |
| 3 | Mississippi Power | Don Horsley | Affirmative | |
| 3 | Municipal Electric Authority of Georgia | Steven M. Jackson | Negative | |
| 3 | Muscatine Power & Water | John Bos | | |
| 3 | New York Power Authority | Marilyn Brown | Affirmative | |
| 3 | Niagara Mohawk (National Grid Company) | Michael Schiavone | Affirmative | |
| 3 | Northern Indiana Public Service Co. | William SeDoris | Affirmative | |
| 3 | Orlando Utilities Commission | Ballard Keith Mutters | Abstain | |
| 3 | PacifiCorp | John Apperson | Affirmative | View |
| 3 | Platte River Power Authority | Terry L Baker | Affirmative | |
| 3 | Progress Energy Carolinas | Sam Waters | Affirmative | |
| 3 | Public Service Electric and Gas Co. | Jeffrey Mueller | Affirmative | View |
| 3 | Public Utility District No. 1 of Chelan County | Kenneth R. Johnson | Affirmative | |

| | | | | |
|---|---|---------------------|-------------|----------------------|
| 3 | Public Utility District No. 2 of Grant County | Greg Lange | Negative | View |
| 3 | Sacramento Municipal Utility District | James Leigh-Kendall | Affirmative | |
| 3 | Salt River Project | John T. Underhill | Negative | View |
| 3 | San Diego Gas & Electric | Scott Peterson | | |
| 3 | Santee Cooper | Zack Dusenbury | Affirmative | |
| 3 | Seattle City Light | Dana Wheelock | Affirmative | |
| 3 | South Carolina Electric & Gas Co. | Hubert C. Young | Affirmative | |
| 3 | Southern California Edison Co. | David Schiada | Affirmative | |
| 3 | Tampa Electric Co. | Ronald L Donahey | Affirmative | |
| 3 | Wisconsin Electric Power Marketing | James R. Keller | Negative | View |
| 3 | Wisconsin Public Service Corp. | Gregory J Le Grave | Affirmative | |
| 3 | Xcel Energy, Inc. | Michael Ibold | Negative | View |
| 4 | Alliant Energy Corp. Services, Inc. | Kenneth Goldsmith | Affirmative | View |
| 4 | American Municipal Power - Ohio | Kevin Koloini | Affirmative | |
| 4 | City of New Smyrna Beach Utilities Commission | Timothy Beyrle | Abstain | |
| 4 | Consumers Energy | David Frank Ronk | Affirmative | |
| 4 | Detroit Edison Company | Daniel Herring | Affirmative | View |
| 4 | Florida Municipal Power Agency | Frank Gaffney | Negative | View |
| 4 | Fort Pierce Utilities Authority | Thomas W. Richards | Abstain | |
| 4 | Georgia System Operations Corporation | Guy Andrews | Abstain | |
| 4 | Illinois Municipal Electric Agency | Bob C. Thomas | Affirmative | |
| 4 | Integrays Energy Group, Inc. | Christopher Plante | Affirmative | |
| 4 | Madison Gas and Electric Co. | Joseph G. DePoorter | Affirmative | |
| 4 | Northern California Power Agency | Fred E. Young | Affirmative | |
| 4 | Ohio Edison Company | Douglas Hohlbaugh | Affirmative | |
| 4 | Old Dominion Electric Coop. | Mark Ringhausen | Negative | View |
| 4 | Pacific Northwest Generating Cooperative | Aleka K Scott | | |
| 4 | Public Utility District No. 1 of Snohomish County | John D. Martinsen | Abstain | |
| 4 | Sacramento Municipal Utility District | Mike Ramirez | Affirmative | |
| 4 | Seattle City Light | Hao Li | Affirmative | |
| 4 | Seminole Electric Cooperative, Inc. | Steven R Wallace | Negative | |
| 4 | Wisconsin Energy Corp. | Anthony Jankowski | Negative | View |
| 5 | AEP Service Corp. | Brock Ondayko | Affirmative | View |
| 5 | Amerenue | Sam Dwyer | Affirmative | |
| 5 | Avista Corp. | Edward F. Groce | Abstain | |
| 5 | Black Hills Corp | George Tatar | Affirmative | |
| 5 | Bonneville Power Administration | Francis J. Halpin | Affirmative | |
| 5 | Calpine Corporation | Duncan Brown | Affirmative | |
| 5 | City of Tallahassee | Alan Gale | | |
| 5 | City Water, Light & Power of Springfield | Karl E. Kohlrus | Affirmative | |
| 5 | Colmac Clarion/Piney Creek LP | Harvie D. Beavers | Affirmative | |
| 5 | Competive Power Ventures, Inc. | Mark E. Bennett | | |
| 5 | Consolidated Edison Co. of New York | Edwin E Thompson | Affirmative | |
| 5 | Constellation Power Source Generation, Inc. | Terrence Simon | Affirmative | |
| 5 | Consumers Energy | James B Lewis | Negative | |
| 5 | Covanta Energy | Samuel Cabassa | Affirmative | |
| 5 | Dairyland Power Coop. | Warren Schaefer | Affirmative | |
| 5 | Detroit Edison Company | Ronald W. Bauer | Affirmative | |
| 5 | Dominion Resources, Inc. | Mike Garton | Affirmative | |
| 5 | Dynegy | Greg Mason | Negative | |
| 5 | Entegra Power Group, LLC | Kenneth Parker | Negative | View |
| 5 | Entergy Corporation | Stanley M Jaskot | Negative | View |
| 5 | Exelon Nuclear | Michael Korchynsky | Negative | |
| 5 | FirstEnergy Solutions | Kenneth Dresner | | |
| 5 | FPL Energy | Benjamin Church | Negative | View |
| 5 | Great River Energy | Cynthia E Sulzer | Affirmative | |
| 5 | JEA | Donald Gilbert | Affirmative | |
| 5 | Kansas City Power & Light Co. | Scott Heidtbrink | Affirmative | |
| 5 | Kissimmee Utility Authority | Mike Blough | Negative | |
| 5 | Lakeland Electric | Thomas J Trickey | Negative | |
| 5 | Liberty Electric Power LLC | Daniel Duff | Negative | View |
| 5 | Lincoln Electric System | Dennis Florom | Affirmative | |
| 5 | Louisville Gas and Electric Co. | Charlie Martin | Affirmative | View |
| 5 | Luminant Generation Company LLC | Mike Laney | Negative | View |
| 5 | Manitoba Hydro | Mark Aikens | Affirmative | View |

| | | | | |
|---|--|----------------------|-------------|----------------------|
| 5 | New York Power Authority | Gerald Mannarino | Affirmative | |
| 5 | Northern Indiana Public Service Co. | Michael K Wilkerson | Affirmative | |
| 5 | Occidental Chemical | Michelle DAntuono | | |
| 5 | Oklahoma Gas and Electric Co. | Kim Morphis | | |
| 5 | Orlando Utilities Commission | Richard Kinan | Affirmative | |
| 5 | Pacific Gas and Electric Company | Richard J. Padilla | Affirmative | View |
| 5 | PacifiCorp | Sandra L. Shaffer | Affirmative | View |
| 5 | Portland General Electric Co. | Gary L Tingley | | |
| 5 | PPL Generation LLC | Mark A. Heimbach | Affirmative | View |
| 5 | Progress Energy Carolinas | Wayne Lewis | Affirmative | |
| 5 | PSEG Power LLC | David Murray | Affirmative | View |
| 5 | RRI Energy | Thomas J. Bradish | Negative | View |
| 5 | Sacramento Municipal Utility District | Bethany Wright | Affirmative | |
| 5 | Salt River Project | Glen Reeves | Negative | View |
| 5 | Seattle City Light | Michael J. Haynes | Affirmative | |
| 5 | Seminole Electric Cooperative, Inc. | Brenda K. Atkins | Negative | |
| 5 | South Carolina Electric & Gas Co. | Richard Jones | Affirmative | |
| 5 | Southern Company Generation | William D Shultz | Affirmative | |
| 5 | Tenaska, Inc. | Scott M. Helyer | Negative | |
| 5 | Trans Canada Power | John Fish | | |
| 5 | U.S. Army Corps of Engineers Northwestern Division | Karl Bryan | Affirmative | |
| 5 | U.S. Bureau of Reclamation | Martin Bauer P.E. | Affirmative | |
| 5 | Vandolah Power Company L.L.C. | Douglas A. Jensen | Negative | |
| 5 | Wisconsin Electric Power Co. | Linda Horn | Negative | View |
| 5 | Wisconsin Public Service Corp. | Leonard Rentmeester | Affirmative | |
| 5 | Xcel Energy, Inc. | Liam Noailles | Negative | View |
| 6 | AEP Marketing | Edward P. Cox | Affirmative | View |
| 6 | Bonneville Power Administration | Brenda S. Anderson | Affirmative | |
| 6 | Cleco Power LLC | Matthew D Cripps | Abstain | |
| 6 | Consolidated Edison Co. of New York | Nickesha P Carrol | Affirmative | |
| 6 | Constellation Energy Commodities Group | Chris Lyons | Abstain | |
| 6 | Dominion Resources, Inc. | Louis S Slade | Affirmative | |
| 6 | Duke Energy Carolina | Walter Yeager | Affirmative | |
| 6 | Entegra Power Services | Larry W. Rodriguez | Negative | View |
| 6 | Entergy Services, Inc. | Terri F Benoit | Negative | View |
| 6 | Eugene Water & Electric Board | Daniel Mark Bedbury | Affirmative | |
| 6 | Exelon Power Team | Pulin Shah | Negative | |
| 6 | FirstEnergy Solutions | Mark S Travaglianti | Affirmative | |
| 6 | Florida Power & Light Co. | Silvia P Mitchell | Negative | |
| 6 | Great River Energy | Donna Stephenson | Affirmative | |
| 6 | Kansas City Power & Light Co. | Thomas Saitta | Affirmative | View |
| 6 | Lakeland Electric | Paul Shipps | Abstain | |
| 6 | Lincoln Electric System | Eric Ruskamp | Affirmative | |
| 6 | Louisville Gas and Electric Co. | Daryn Barker | Affirmative | View |
| 6 | Luminant Energy | Thomas Burke | | |
| 6 | Manitoba Hydro | Daniel Prowse | Affirmative | View |
| 6 | New York Power Authority | Thomas Papadopoulos | Affirmative | |
| 6 | Northern Indiana Public Service Co. | Joseph O'Brien | Affirmative | |
| 6 | PacifiCorp | Gregory D Maxfield | Affirmative | |
| 6 | Progress Energy | James Eckelkamp | Affirmative | |
| 6 | PSEG Energy Resources & Trade LLC | James D. Hebson | Affirmative | View |
| 6 | Public Utility District No. 1 of Chelan County | Hugh A. Owen | Affirmative | |
| 6 | RRI Energy | Trent Carlson | Negative | View |
| 6 | Salt River Project | Mike Hummel | Negative | View |
| 6 | Santee Cooper | Suzanne Ritter | Affirmative | |
| 6 | Seattle City Light | Dennis Sismaet | Affirmative | |
| 6 | Seminole Electric Cooperative, Inc. | Trudy S. Novak | Negative | |
| 6 | Southern California Edison Co. | Marcus V Lotto | Affirmative | |
| 6 | Xcel Energy, Inc. | David F. Lemmons | Negative | View |
| 8 | | James A Maenner | Affirmative | |
| 8 | | Roger C Zaklukiewicz | Affirmative | |
| 8 | | Edward C Stein | Affirmative | |
| 8 | Ascendant Energy Services, LLC | Raymond Tran | | |
| 8 | JDRJC Associates | Jim D. Cyrulewski | Affirmative | |
| 8 | Power Energy Group LLC | Peggy Abbadini | Affirmative | |
| 8 | SPS Consulting Group Inc. | Jim R Stanton | Negative | View |



| | | | | |
|----|--|------------------------------|-------------|----------------------|
| 8 | Volkman Consulting, Inc. | Terry Volkman | Affirmative | |
| 9 | California Energy Commission | William Mitchell Chamberlain | Affirmative | |
| 9 | Commonwealth of Massachusetts Department of Public Utilities | Donald E. Nelson | Affirmative | |
| 9 | Maine Public Utilities Commission | Jacob A McDermott | Abstain | |
| 9 | National Association of Regulatory Utility Commissioners | Diane J. Barney | Affirmative | |
| 9 | Oregon Public Utility Commission | Jerome Murray | Abstain | |
| 9 | Utah Public Service Commission | Ric Campbell | Negative | |
| 10 | Electric Reliability Council of Texas, Inc. | Kent Saathoff | Abstain | |
| 10 | Midwest Reliability Organization | Dan R. Schoenecker | Abstain | |
| 10 | New York State Reliability Council | Alan Adamson | Affirmative | |
| 10 | Northeast Power Coordinating Council, Inc. | Guy V. Zito | Affirmative | |
| 10 | ReliabilityFirst Corporation | Jacque Smith | Affirmative | |
| 10 | SERC Reliability Corporation | Carter B Edge | Negative | View |
| 10 | Western Electricity Coordinating Council | Louise McCarren | | |

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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Final Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

Project 2009-06: Facility Ratings

The recirculation ballot for proposed standard FAC-008-2 — Facility Ratings and an associated implementation ended on March 18, 2010.

Ballot Results

Voting statistics are listed below, and the [Ballot Results](#) Web page provides a link to the detailed results:

Quorum: 93.71%

Approval: 78.15%

The ballot pool approved the standard. Ballot criteria details are listed at the end of the announcement.

Next Steps

The standard will be submitted to the NERC Board of Trustees for approval.

Project Background

This project involves revisions to FAC-008-1 and FAC-009-1 that result in a single standard (FAC-008-2 — Facility Ratings) that is responsive to the recommended changes identified in the Standard Review Guidelines and also to two of the three applicable FERC directives in Order 693. The proposed changes to FAC-008-1 and FAC-009-1 have already been through stakeholder review and reached consensus in 2008 on all requirements except the requirement 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 this requirement did not have a reliability-related benefit, and voted against the inclusion of a requirement to meet this directive. Therefore, the requirement was removed from this version.

Project page: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Applicability of Standards in Project

Transmission Owner

Generator Owner

Standards Development Process

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

Ballot Criteria

Approval requires both a (1) quorum, which is established by at least 75% of the members of the ballot pool for submitting either an affirmative vote, a negative vote, or an abstention, and (2) A two-thirds majority of the weighted segment votes cast must be affirmative; the number of votes cast is the sum of affirmative and negative votes, excluding abstentions and nonresponses. If there are no negative votes with reasons from the first ballot, the results of the first ballot shall stand. If, however, one or more members submit negative votes with reasons, a second ballot shall be conducted.

*For more information or assistance,
please contact Lauren Koller at Lauren.Koller@nerc.net*

Project 2009-06 Facility Ratings Implementation Plan

Implementation Plan for FAC-008-3 – Facility Ratings

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should all be retired when FAC-008-03 becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)

Compliance with the Standard

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before FAC-008-3 becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

FAC-008-3
BEGINS HERE

Project 2009-06 Facility Ratings Implementation Plan

Implementation Plan for FAC-008-~~32~~ – Facility Ratings

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, ~~and FAC-008-2 – Facility Ratings~~, should ~~all both~~ be retired when FAC-008-0~~32~~³ becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)

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Compliance with the Standard

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

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Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before ~~the new standard~~ FAC-008-3 becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

Please **DO NOT** use this form to submit comments. Please use the electronic comment form located at the link below to submit comments on the First Posting of FAC-008-3, Facility Ratings (Project 2009-06). The electronic comment form must be completed by **May 2, 2011**.

[Project 2009-06 Facility Ratings](#)

If you have questions please contact Stephen Crutchfield at stephen.crutchfield@nerc.net or by telephone at 609-651-9455.

Background Information

The Facility Ratings Standard Drafting Team (FR SDT) has been tasked with creating a requirement to address a Supplemental SAR to address the reliability concerns related to Facility Ratings initially discussed in paragraphs 756 and 771 of FERC's Order 693, and further explained in paragraph 76 of FERC's "Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay," September 16, 2010. These concerns relate to ensuring broad situational awareness regarding the most limiting elements of Facilities.

In Order 693, FERC explained in paragraph 756:

"...The Commission's proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets."

And provided further direction in paragraph 771:

"...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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."

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

"In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these

facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event."

On February 24, 2011, members of the FR SDT met with NERC and FERC staff to discuss the original directive from FERC Order 693 as well as the subsequent guidance issued in the September 16, 2010 Order.

Reliability Objective Discussion:

During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.

As an example, assume that a Facility has only three pieces of equipment (see Diagram 1 below) and each piece of equipment has its own 'time based' Thermal Rating function. The continuous rating of the Facility would be 'governed' by the Equipment Rating of Equipment 3 (E3). However, for owners that define a shorter term rating, the Facility could safely operate at a rating 'governed' by the Equipment Rating of Equipment 2 (E2) for time less than the E2/3 crossover. Therefore, knowledge of the shorter term rating could assist the Operations Planning Engineer with a strategy to operate (real or contingency) above the established continuous rating, for a period of time, without violating the rating of any equipment of that Facility. For owners that define a very short term rating, an analogous example could be drawn with Equipment 1 and 2.

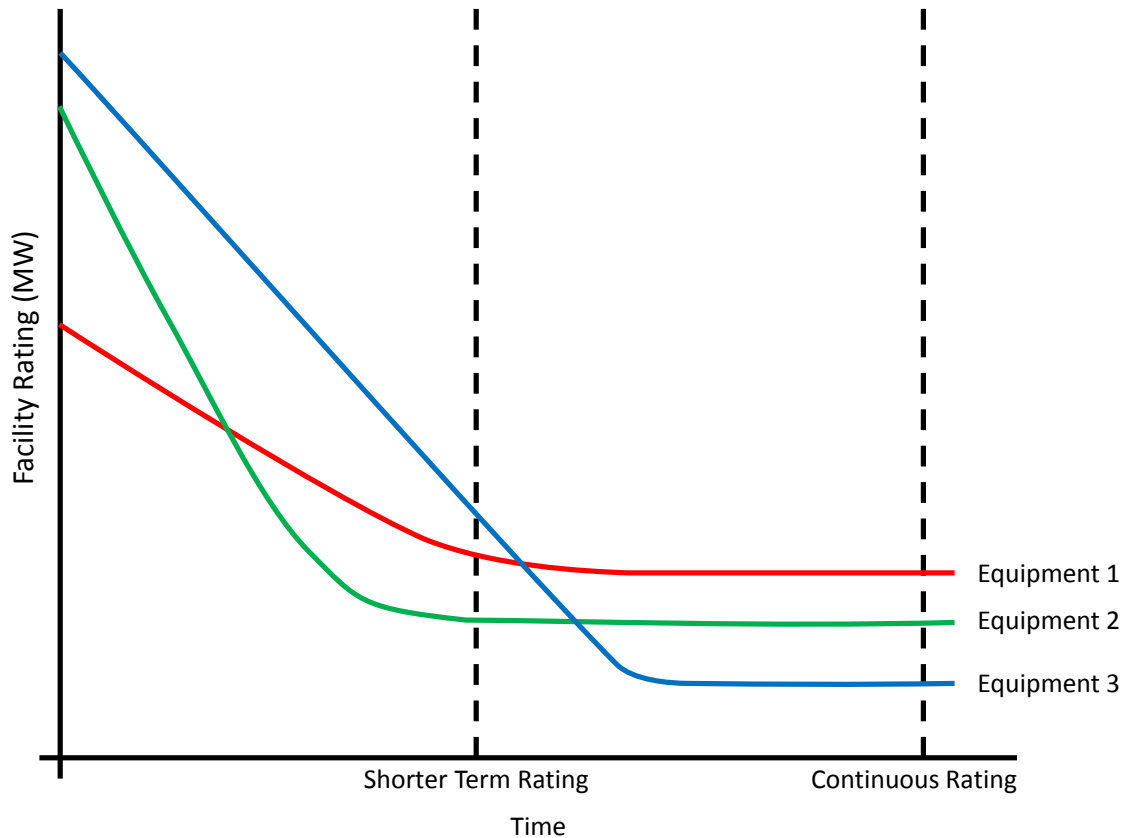
For this example, Requirement 8, Part 1 and its sub-parts requires a Transmission Owner (and the Generator Owner that must comply with Requirement R2) to provide two data points as scheduled by requesting entities.

- For the Continuous Rating: The Facility Rating (the Equipment Rating of E3) and identification of the most limiting equipment of the Facility (E3).
- For the Shorter Term Rating: The Facility Rating (the Equipment Rating for E2) and identification of the most limiting equipment of the Facility (E2).

For this example, Requirement 8, Part 2 and its sub-parts requires a Transmission Owner (and the Generator Owner that must comply with Requirement R2) to provide four data points upon request for a specific subset of Facilities.

- For the Continuous Rating: Identification of the existing next most limiting equipment of the Facility (E2) and its Equipment Rating.
- For the Shorter Term Rating: Identification of the existing next most limiting equipment of the Facility (E1) and its Equipment Rating.

**Diagram 1 – Facility with Three Pieces of Equipment
 Determination of Rating
 For Different Periods of Time**



You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

1. Do you agree that the proposed Requirement R8 addresses the FERC Directive from Order 693, Paragraph 756? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

- Yes
 No

Comments:

2. Do you agree with the proposed Violation Risk Factor, Time Horizon and Violation Severity Levels for requirement R8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

- Yes
 No

Comments:

3. Do you agree with the proposed Measure M8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

- Yes
 No

Comments:

4. Do you agree with the proposed Implementation Plan for FAC-008-3, Facility Ratings? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

- Yes
 No

Comments:

5. If you have any other comments related to the FERC directive (paragraphs 756 and 771) and this Supplemental SAR that you have not already provided in response to the questions above, please provide them here.

Comments:

A. Introduction

1. **Title:** **Facility Ratings**
2. **Number:** FAC-008-3
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. **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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
 - 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
 - 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
 - R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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]*
 - R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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] [Time Horizon: Operations Planning]*
 - R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
 - R7. Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
 - R8. Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide requested information as specified below (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

R7 has been subdivided into two requirements (R7 and R8). To distinguish the 'new' language proposed for R8 from the language that was previously approved under R7, only the new text is shown in redline format.

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s): *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

- 8.1.** As scheduled by the requesting entities:
 - 8.1.1.** Facility Ratings
 - 8.1.2.** Identity of the most limiting equipment of the Facilities
- 8.2.** Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:
 - 8.2.1.** Identity of the existing next most limiting equipment of the Facility
 - 8.2.2.** The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement 4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings, 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 5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement 6).
- M7.** Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R7.
- M8.** Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that

it provided its Facility Ratings and identity of limiting equipment to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R8.

D. Compliance

1. Compliance Monitoring Process

1.1. **Compliance Enforcement Authority**

Regional Entity

1.2. **Compliance Monitoring and Enforcement Processes:**

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

1.3. **Data Retention**

The Generator Owner shall keep its current documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.

The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, and Measure M5, for three calendar years.

The Generator Owner shall keep evidence for Measure M7 for three calendar years.

The Transmission Owner (and Generator Owner that is subject to Requirement R2) shall keep evidence for Measure M8 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.

1.4. **Additional Compliance Information**

None

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|---|
| | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | <p>The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request.</p> | <p>The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request.</p> | <p>The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request.</p> | <p>The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3)</p> |
| R5 | <p>The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5)</p> | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | <p>The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|---|---|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. OR The Generator Owner failed to provide its Facility Ratings to the requesting entities. |
| R8 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 100%, but not less than 95% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the required Rating information to the | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 95%, but not less than 90% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 90%, but not less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the required Rating information to the requesting entity, but did so more |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|---|---|
| | <p>requesting entity, but the information was provided up to and including 15 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 100%, but not less than 95% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 15 calendar days but less than or equal to 25 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 95%, but not less than 90% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 25 calendar days but less than or equal to 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 90%, but no less than 85% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>than 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 85 % of the required Rating information to the requesting entity. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity failed to provide its Rating information to the requesting entity. (R8, Part 8.1)</p> |

A. Introduction

1. **Title:** Facility Ratings
2. **Number:** FAC-008-23
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. **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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
- Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
- 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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]*
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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] [Time Horizon: Operations Planning]*
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7. Each ~~Transmission Owner and~~ Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R8. Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide Facility Ratings requested information as specified below (for its solely and jointly owned Facilities that are existing

R7 and M7 have been subdivided into two requirements (R7 and R8) and two Measures (M7 and M8). To distinguish the 'new' language proposed for R8 and M8 from the language that was previously approved under R7 and M7, only the new text is shown in redline

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

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), Transmission Owner(s) and Transmission Operator(s) ~~as scheduled by such requesting entities;~~ [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]

8.1. As scheduled by the requesting entities:

8.1.1. Facility Ratings

8.1.2. Identity of the most limiting equipment of the Facilities

8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:

8.2.1. Identity of the existing next most limiting equipment of the Facility

8.2.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement 4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings, 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 5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement 6).
- M7.** Each ~~Transmission Owner and~~ Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement ~~7-R7.~~

- M8. Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R87.

D. Compliance

1. Compliance Monitoring Process

1.1. **Compliance Enforcement Authority**

Regional Entity

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

~~Not Applicable~~

~~1.3.1.2.~~ **Compliance Monitoring and Enforcement Processes:**

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

~~1.4.1.3.~~ **Data Retention**

The Generator Owner shall keep its current documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.

The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, ~~Measure M5~~, and Measure ~~M7~~M5, for three calendar years.

The Generator Owner shall keep evidence for Measure M7 for three calendar years.

The Transmission Owner (and Generator Owner that is subject to Requirement R2) shall keep evidence for Measure M8 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.

~~4.5.1.4.~~ **Additional Compliance Information**

None

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request. | The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request. | The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3) |
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|---------------------|--|---|---|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The responsible entity Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. | The responsible entity Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. | The responsible entity Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. | The responsible entity Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. <u>OR</u> <u>The Generator Owner failed to provide its Facility Ratings to the requesting entities.</u> |
| R7 R8 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to 15 calendar days. (R7 R8, Part 8.1) <u>OR</u> <u>The responsible entity provided less than 100%, but not less than 95% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided the required Rating information to the</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7 R8, Part 8.1) <u>OR</u> <u>The responsible entity provided less than 95%, but not less than 90% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7 R8, Part 8.1) <u>OR</u> <u>The responsible entity provided less than 90%, but not less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7 R8), Part 8.1) <u>OR</u> <u>The responsible entity provided less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided the required Rating information to the requesting entity, but did so more</u> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|--|
| | <p><u>requesting entity, but the information was provided up to and including 15 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 100%, but not less than 95% of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> | <p><u>The responsible entity provided the required Rating information to the requesting entity, but did so more 15 calendar days but less than or equal to 25 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 95%, but not less than 90% of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> | <p><u>The responsible entity provided the required Rating information to the requesting entity, but did so more than 25 calendar days but less than or equal to 35 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 90%, but no less than 85% of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> | <p><u>than 35 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 85 % of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity failed to provide its Rating information to the requesting entity. (R8, Part 8.1)</u></p> |

Standard Authorization Request Form

| | |
|----------------------------|---|
| Title of Proposed Standard | Supplemental SAR for Project 2009-06 Facility Ratings |
| Request Date | March 13, 2011 |
| Date SC Approved Posting | March 14, 2011 |

| SAR Requester Information | | SAR Type <i>(Check a box for each one that applies.)</i> | |
|----------------------------------|-------------------------|---|--|
| Name | Andrew Rodriquez | <input type="checkbox"/> | New Standard |
| Primary Contact | Andrew Rodriquez | <input checked="" type="checkbox"/> | Revision to existing Standard FAC-008-2 |
| Telephone | 609-947-3885 | <input type="checkbox"/> | Withdrawal of existing Standard |
| Fax | | | |
| E-mail | andy.rodriquez@nerc.net | <input type="checkbox"/> | Expedited |

Purpose (Describe what the standard action will achieve in support of bulk power system reliability.)

To address the reliability concerns related to Facility Ratings initially discussed in paragraphs 756 and 771 of FERC's Order 693, and further explained in paragraph 76 of FERC's "Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay," issued September 16, 2010. These concerns relate to ensuring that information that may be helpful to operations and planning entities regarding the rating of the most limiting equipment of a Facility. NERC believes that industry can address these concerns through an equally effective and efficient alternative to the proposal directed by the Commission involving the development of a single additional requirement in FAC-008 – Facility Ratings.

The Commission has issued an agenda indicating it may issue an Order on March 17, 2011 that will establish a deadline for completion and filing by June 15, 2011.

Industry Need (Provide a justification for the development or revision of the standard, including an assessment of the reliability and market interface impacts of implementing or not implementing the standard action.)

In Order 693, FERC explained in paragraph 756:

"...The Commission's proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets."

And provided further direction in paragraph 771:

"...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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."

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

"In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the

overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event.”

NERC believes the concerns discussed in paragraph 76 are legitimate concerns that Stakeholders can address through an equally effective and efficiently alternative to the proposal directed by the Commission through the addition of a single requirement to the latest approved version of FAC-008-2 – Facility Ratings. The additional requirement will provide entities the opportunity to obtain additional details about the ratings of equipment that may be helpful for Reliability Coordinators, Transmission Operators, Transmission Planners, and Planning Coordinators when developing some operational plans or when conducting some planning studies.

Taking such action is consistent with the FERC Orders and the original SAR for the predecessor to this project: Project 2006-09 Facility Ratings.

NERC must produce a standard that addresses this directive to comply with paragraph 29 of FERC’s March 18 Order Directing NERC to Propose a Modification of ERO Rules of Procedure:

“Moreover, consistent with the Commission’s regulations, we direct the ERO, within 90 days of our subsequent order on proposed modifications to the ERO’s rules, to comply with the Commission’s directive in Order No. 693 to modify Reliability Standard FAC-008-1. As explained in greater detail in Order No. 693, the required modifications include (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.”

NERC currently anticipates the Commission issuing such an order on March 17, 2010, which would result in a deadline for completion of June 15, 2011.

NERC does not expect there to be any market impacts from this standards action.

Brief Description (Provide a paragraph that describes the scope of this standard action.)

NERC proposes to add an additional requirement to FAC-008-2 that will address the area of concern expressed in the Commission’s orders. This SAR is limited solely to the addition of this requirement and the associated measure and compliance information needed to support the requirement.

Detailed Description (Provide a description of the proposed project with sufficient details for the standard drafting team to execute the SAR.)

NERC proposes to add a requirement to FAC-008-2 that addresses the following directive from Order 693:

(3) for each facility, identify the limiting component and, for critical facilities, the resulting increase in rating if that component is no longer limiting.”

Standards Authorization Request Form

Further, NERC requests that measures and Compliance Elements be developed in support of this requirement.

Standards Authorization Request Form

Reliability Functions

| The Standard will Apply to the Following Functions <i>(Check box for each one that applies.)</i> | | |
|---|-------------------------------|---|
| <input type="checkbox"/> | Reliability Assurer | Monitors and evaluates the activities related to planning and operations, and coordinates activities of Responsible Entities to secure the reliability of the bulk power system within a Reliability Assurer Area and adjacent areas. |
| <input type="checkbox"/> | Reliability Coordinator | Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view. |
| <input type="checkbox"/> | 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 Authority | 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 its portion of the Planning Coordinator's Area. |
| <input checked="" type="checkbox"/> | Transmission Owner | Owns and maintains transmission facilities. |
| <input type="checkbox"/> | Transmission Operator | Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area. |
| <input type="checkbox"/> | Transmission Planner | Develops a >one year plan for the reliability of the interconnected Bulk Electric System within the Transmission Planner Area. |
| <input type="checkbox"/> | Transmission Service Provider | Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff). |
| <input type="checkbox"/> | Distribution Provider | Delivers electrical energy to the End-use customer. |
| <input type="checkbox"/> | Generator Owner | Owns and maintains generation facilities. |
| <input type="checkbox"/> | Generator Operator | Operates generation unit(s) to provide real and reactive power. |
| <input type="checkbox"/> | Purchasing-Selling Entity | Purchases or sells energy, capacity, and necessary reliability-related services as required. |
| <input type="checkbox"/> | Load-Serving Entity | Secures energy and transmission service (and reliability-related services) to serve the End-use Customer. |

Reliability and Market Interface Principles

| | |
|--|---|
| Applicable Reliability Principles <i>(Check box for all that apply.)</i> | |
| <input checked="" type="checkbox"/> | 1. Interconnected bulk power 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 power 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 power 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 power 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 power systems. |
| <input type="checkbox"/> | 6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions. |
| <input checked="" type="checkbox"/> | 7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis. |
| <input type="checkbox"/> | 8. Bulk power systems shall be protected from malicious physical or cyber attacks. |
| Does the proposed Standard comply with all of the following Market Interface Principles? <i>(Select 'yes' or 'no' from the drop-down box.)</i> | |
| 1. A reliability standard shall not give any market participant an unfair competitive advantage. Yes | |
| 2. A reliability standard shall neither mandate nor prohibit any specific market structure. Yes | |
| 3. A reliability standard shall not preclude market solutions to achieving compliance with that standard. Yes | |
| 4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes | |

Standards Authorization Request Form

Related Standards

| Standard No. | Explanation |
|---------------------|---|
| FAC-008-2 | Facility Ratings – FAC-008-2 was developed and approved by its ballot pool and the NEC Board of Trustees but has not been filed for approval by any regulatory or governmental authority. FAC-008-2 will be replaced by FAC-008-3 and only FAC-008-3 will be filed for regulatory and governmental approvals. |
| | |
| | |

Related SARs

| SAR ID | Explanation |
|----------------------------------|--|
| Original SAR for Project 2009-06 | The SAR for Project 2009-06 is being supplemented to expand the scope of the project to address all three directives associated with FAC-008-1 as identified in Order 693. |
| Original SAR for Project 2006-09 | The SAR for Project 2009-06 replaced the SAR for Project 2006-09. |
| | |
| | |
| | |
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| | |

Regional Variances

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



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Project 2009-06 Facility Ratings Expansion

Ballot Pool Forming March 17 – April 16, 2011

Formal Comment Period Open March 17 – May 2, 2011

Now available at: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Ballot Pool Open through 8 a.m. on April 16, 2011

A ballot pool is being formed for the balloting of revisions to FAC-008-2 to address a directive from Order 693 that was not addressed in the development of FAC-008-2. The Standards Committee has authorized posting a Supplemental SAR and associated standard and implementation plan for a 45-day formal comment period with a new ballot pool formed during the first 30 days of the comment period and an initial ballot conducted during the last 10 days of that comment period. The ballot pool will be open through 8 a.m. on April 16, 2011.

Registered Ballot Body members may join the ballot pool to be eligible to vote in the upcoming ballot at the following page: <https://standards.nerc.net/BallotPool.aspx>

During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list server for this ballot pool is: bp-2009-06_FAC_RATING_in@nerc.com

Members who join the ballot pool to vote on the standard will automatically be entered in a separate pool to participate in the non-binding poll of the associated violation risk factor (VRF) and violation severity levels (VSLs).

Formal 45-day Comment Period Open through 8 p.m. on Monday, May 2, 2011

A supplemental SAR and revisions to FAC-008-2, along with an implementation plan and revisions to the associated VRF and VSLs have been posted for a formal 45-day comment period through May 2, 2011. The sole focus of this supplemental SAR and proposed revisions to FAC-008-2 – Facility Ratings is to address a directive from Order 693 that is related to FAC-008-1 and was not addressed in the development of FAC-008-2. NERC is required to file a version of FAC-008 that addresses all directives from Order 693 related to FAC-008 by June 15, 2011.

The Standards Committee has waived the initial 30-day comment period for this posting giving consideration to the fact that the issue being addressed with this new requirement in FAC-008-3 is not new – previous attempts to develop a requirement to address this directive were posted several times in 2008 and also giving consideration to the anticipated due date of June 15, 2011. The Standards Committee noted that this waiver does not conflict with ANSI’s requirements since the 30-day comment period in NERC’s standard development process is not required by ANSI.

Instructions for Commenting

Please use this [electronic form](#) to submit comments. If you experience any difficulties in using the electronic form, please contact Monica Benson at monica.benson@nerc.net. An off-line, unofficial copy of the comment form is posted on the project page: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Next Steps

An initial ballot and non-binding poll will be conducted during the final 10 days of the 45-day comment period, from Friday, April 22nd through Monday, May 2, 2011.

Background

The Facility Ratings Standard Drafting Team (FR SDT) has been tasked with creating a requirement to address an unresolved directive initially discussed in paragraphs 756 and 771 of FERC's Order 693, and further explained in paragraph 76 of FERC's "Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay," September 16, 2010. The issues discussed in these paragraphs concern the reliability-related use of information about the most limiting piece of equipment that comprises a Facility.

In Order 693, FERC explained in paragraph 756:

"...The Commission's proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets."

And provided further direction in paragraph 771:

"...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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."

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

"In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event."

On February 24, 2011, members of the FR SDT met with NERC and FERC staff to discuss the original directive from FERC Order 693 as well as the subsequent guidance issued in the September 16, 2010 Order. The members of the FR SDT used this new information to develop the proposed revisions to FAC-008-2 that are posted for stakeholder comment and ballot.

Standards Process

The [Standard Processes Manual](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

For more information or assistance, please contact Monica Benson,
Standards Process Administrator, at monica.benson@nerc.net or at 404-446-2560.

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Princeton, NJ 08540
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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Project 2009-06 Facility Ratings Expansion

Ballot Window Open Through May 2, 2011

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

An initial ballot of revisions to FAC-008-2 and a non-binding poll of the associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) is open now through 8 p.m. Eastern on Monday, May 2, 2011.

FERC issued an Order on March 17, 2011 that requires NERC to file a version of FAC-008 that addresses all directives from Order 693 related to FAC-008 by June 15, 2011. Two of the three directives were already addressed in the version of FAC-008 that was approved by its ballot pool on March 18, 2010. The standard posted for ballot includes Requirements R8 to address the third directive as described more fully in the background information provided at the end of this announcement.

Instructions for Balloting Revisions to FAC-008-2

Members of the ballot pool associated with this project may log in and submit their votes from the following page: <https://standards.nerc.net/CurrentBallots.aspx>. In addition, members of the ballot pool to vote on the standard were automatically entered in a separate pool to participate in the concurrent, non-binding poll for the VRFs and VSLs.

Special Instructions for Submitting Comments with a Ballot

Comments submitted with ballots are extremely valuable to help the drafting team revise its work. In an effort to reduce the burden on stakeholders providing comments, the drafting team requests that all comments (both those associated with a ballot and those submitted by stakeholders not balloting) be submitted through the electronic comment form posted at http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html. This will ensure that stakeholders only provide a single set of comments, but have an opportunity to notify the drafting team if they have provided comments associated with a ballot.

During the successive ballot window, members of the ballot pool associated with this project may log in and submit their votes from the following page: <https://standards.nerc.net/CurrentBallots.aspx>. **When submitting a ballot, simply record a “Comments submitted” or “No Comments” in the comments field of the ballot to indicate whether comments were submitted.**

Documents for this project, including an off-line unofficial copy of the questions listed in the comment form, are posted at the following site:

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Next Steps

The drafting team will consider all comments received.

Background

The Facility Ratings Standard Drafting Team (FR SDT) has been tasked with creating a requirement to address the reliability concerns related to Facility Ratings initially discussed in paragraphs 756 and 771 of FERC's Order 693, and further explained in paragraph 76 of FERC's "Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay," September 16, 2010. These concerns relate to ensuring broad situational awareness regarding the most limiting elements of Facilities.

In Order 693, FERC explained in paragraph 756:

"...The Commission's proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets."

And provided further direction in paragraph 771:

"...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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."

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

"In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event."

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Individual or group. (46 Responses)
Name (31 Responses)
Organization (31 Responses)
Group Name (15 Responses)
Lead Contact (15 Responses)
Question 1 (44 Responses)
Question 1 Comments (46 Responses)
Question 2 (35 Responses)
Question 2 Comments (46 Responses)
Question 3 (37 Responses)
Question 3 Comments (46 Responses)
Question 4 (34 Responses)
Question 4 Comments (46 Responses)
Question 5 (0 Responses)
Question 5 Comments (46 Responses)

| |
|--|
| |
| Group |
| Imperial Irrigation District |
| Jesus Sammy Alcaraz |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| IID has submitted a NO vote with comments during the ballot period. Provided is IID justification for the NO vote: We agree the R8 requirement addresses the Commission's directive, however we are seeking only clarification of the standard's language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment: 8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Equipment's Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1. |
| Individual |
| Jonathan Appelbaum |
| United Illuminating Company |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| R8.2 "... for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit. limiting Total Transfer Capability. impeding generator |

deliverability, or impeding service to a major city or load pocket:" "Major City" is an undefined term. It is akin to terms like Bulk Power System, and Integrated. Everyone has an opinion on what it means. What are the properties utilized to identify a municipality as a "Major City". These properties/attributes should be in an attachment. Does 8.2 refer to any load pocket or only Major Load Pockets. How is a Major Load Pocket determined? These properties/attributes should be in an attachment.

Group

Northeast Power Coordinating Council

Guy Zito

No

8.2 should be deleted. What it requires goes beyond what is mandated in the FERC Directive. However, regarding the language in 8.2, major city, and load pocket must be defined. Those terms are vague, and subject to interpretation. 8.1.2 should be revised to read: Identity of the most limiting equipment of the Facilities applicable to each individual Normal and Emergency rating required to be provided.

Individual

Nathaniel Larson

New Harquahala Generating Co.

Yes

Yes

Yes

Yes

Individual

Dan Roethemeyer

Dynegy Inc.

Yes

We agree proposed R8 addresses the FERC directive; however, by including GO in R8, R7 and R8 seem redundant with respect to the GO. Suggest deleting R7 or include "subject to R1" after Generator Owner in R7. Also, R8 requires a TO to provide information to itself. Suggest deleting TO as a recipient from itself.

Yes

We agree; however, similar to our comment in #1 above, M8 requires a TO to provide information to itself.

Yes

Individual

Thad Ness

American Electric Power

Yes

| |
|--|
| See response to Question 5. |
| No |
| The Violation Risk Factor for 8.2 is the same as that required for 8.1. The real-time reliability need for the data required in 8.2 is questionable, at best. Since this data need not be supplied prior to 30 days after requested, it is inconsistent with a VRF of "Medium". Rather for 8.2 it should be "Lower". |
| Yes |
| M8 is consistent with R8, but this consistency should not be confused with the reliability need for the data related to R8.2, which is questionable. |
| Yes |
| |
| The data required in R8.1.1 (Facility rating(s)) is essential to operate the BES reliably in real-time. However, the identification of that equipment in R8.1.2 has limited value in real time operation. Although consistent with the FERC Orders referenced with the related SAR, the identification of the "next most" limiting equipment, and the associated equipment rating is not useful in real-time operation, and could – if misunderstood – be detrimental to the reliability of the BES. Knowledge only of the rating of the "next most limiting equipment" alone is insufficient to be useful in real-time operation. To be useful other information, such as the time for which the next most limiting equipment might govern the Facility Rating rather than the most limiting equipment, must be known. However, if that time information was provided, that knowledge effectively assigns a 'short term' rating to the Facility in question. If that were the objective of the FERC Orders, then greater clarity and understanding and potential usefulness could have been achieved by simply requiring a short term rating (i.e. a 1-hour rating for a Facility that meets the definition contained in the preamble to R8.2). In the planning horizon, all the rating of equipment that comprises a Facility will be known, or become known, as a natural part of the planning process. Therefore, a Requirement calling for this information is at best, of minimal value. Despite these stated reservations, the SDT has provided the most benign method to respond to the FERC Orders. |
| Individual |
| Robert Casey |
| Georgia Transmission Corporation |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| A. The follow comment uses the Comment form example definitions and Diagram 1 labeling from the Reliability Objective Discussion section – labeling of point (E2) and (E3) was added to Diagram 1 for clarity. We believe that the intent of the Directive's requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of equipment 3 could result in equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, (E3) continuous rating and (E2) shorter term rating, would seem to meet the Directive's clarified requirement. In cases where the limiting equipment's continuous rating is equal to its emergency rating (equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The "Reliability Objective Discussion" and R 8.2.2 goes much further by suggesting that four data points are required being the continuous and emergency ratings for limiting and next most limiting equipment. B. The R8 requirement does reflect the Directive however we believe that item (3) and item (4) are undefined terms. |
| Individual |
| Jack Stamper |
| Clark Public Utilities |
| Yes |

| |
|--|
| |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| Please add a Version History box to the bottom of this proposed standard clearly stating that it is a complete revision, absorbing facility rating requirements from FAC-008-01, FAC-009-01, FAC-008-2. There is a similar occurrence in the proposed PRC-005-2 revision. This provides a confirmation of the retirement of these other standards and leaves no room for doubt. |
| Individual |
| John Bee |
| Exelon |
| Yes |
| Although Requirement R8 addresses the FERC directive, this proposed requirement appears to provide no reliability benefit. The current standard requires that all ratings "shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility". The proposed Requirement R8 specifies that if requested, a new facility rating based on the second most limiting component be provided even though an existing facility rating based on the most limiting component already exists. If the transmission system is operated utilizing the facility rating based on the second most limiting component, operators could exceed the equipment rating of the first most limiting component and damage that piece of equipment as its rating capability would be exceeded. If the facility rating based on the second most limiting component is intended to be used by operations support staff so they could evaluate the need for a shorter duration rating for a future planned event, it still would have no value. If a shorter duration rating needs to be established, then simply knowing the rating of the second most limiting component of an existing rating is meaningless because it is based on a different duration. When determining a facility rating all component ratings comprising the facility must be considered based on the planned rating duration, not just the second most limiting component. Thus the confusion and possible reliability harm caused by providing a facility rating based on the second most limiting component shows that knowing the second most limiting component for the current ratings has no value. |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| |
| Individual |
| John Bee |
| Exelon - 2 |
| Yes |
| Although Requirement R8 addresses the FERC directive, this proposed requirement appears to provide no reliability benefit. The current standard requires that all ratings "shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility". The proposed Requirement R8 specifies that if requested, a new facility rating based on the second most limiting component be provided even though an existing facility rating based on the most limiting component already exists. If the transmission system is operated utilizing the facility rating based on the second most limiting component, operators could exceed the equipment rating of the first most limiting component and damage that piece of equipment as its rating capability would be exceeded. If the facility rating based on the second most limiting component is intended to be used by operations support staff so they could evaluate the need for a shorter duration rating for a future planned event, |

it still would have no value. If a shorter duration rating needs to be established, then simply knowing the rating of the second most limiting component of an existing rating is meaningless because it is based on a different duration. When determining a facility rating all component ratings comprising the facility must be considered based on the planned rating duration, not just the second most limiting component. Thus the confusion and possible reliability harm caused by providing a facility rating based on the second most limiting component shows that knowing the second most limiting component for the current ratings has no value.

Yes

Yes

Yes

Individual

Edvina Uzunovic

The Valley Group, a Nexans company

Yes

In December 2010, NERC Smart Grid Task Force published Report "Reliability Considerations from the Integration of Smart Grid", and in it, there is an excerpt on "Integration of Smart Grid Technology into the Bulk Power System", Section 3, page 12. In this excerpt, it is stated that Smart Grid provides the ability to create an overarching, coordinated and hierarchical approach to automation, control and effectiveness. Among examples of smart grid technologies, Dynamic Thermal Circuit Rating (DTCR) devices were numbered. Although the objective of NERC Project 2009-06 is to identify the limiting component(s) and next limiting component(s) for all critical facilities, and not about Smart Grid integration; however, it should be beneficial to state a need for smart grid technologies integration, especially DTCR devices, into this NERC project. While the paramount importance is to maintain the reliability and integrity of the bulk power system, it is of equal importance to introduce reliability and economic benefits that Smart Grid technologies are bringing. Careful planning, coordination, and possibly review of the current Facility Rating Methodologies should be encouraged and introduced at present time. Static transmission line ratings, and static ratings of power system equipment in general, belong to past practices, and entities should be encouraged to embrace Smart Grid into their systems.

In December 2010, NERC Smart Grid Task Force published Report "Reliability Considerations from the Integration of Smart Grid", and in it, there is an excerpt on "Integration of Smart Grid Technology into the Bulk Power System", Section 3, page 12. In this excerpt, it is stated that Smart Grid provides the ability to create an overarching, coordinated and hierarchical approach to automation, control and effectiveness. Among examples of smart grid technologies, Dynamic Thermal Circuit Rating (DTCR) devices were numbered. Although the objective of NERC Project 2009-06 is to identify the limiting component(s) and next limiting component(s) for all critical facilities, and not about Smart Grid integration; however, it should be beneficial to state a need for smart grid technologies integration, especially DTCR devices, into this NERC project. While the paramount importance is to maintain the reliability and integrity of the bulk power system, it is of equal importance to introduce reliability and economic benefits that Smart Grid technologies are bringing. So careful planning, coordination, and possibly review of the current Facility Rating Methodologies should be encouraged and introduced at present time. Static transmission line ratings, and static ratings of power system equipment in general, belong to past practices, and entities should be encouraged to embrace Smart Grid into their systems.

Group

Dominion

Louis Slade

| |
|--|
| Yes |
| Yes |
| Yes |
| Yes |
| Group |
| SPP Reliability Standards Development |
| Jonathan Hayes |
| No |
| The order mentions that the increase in rating also should be provided along with the second most limiting element rating. |
| Yes |
| Yes |
| Yes |
| Individual |
| Ed Davis |
| Entergy Services, Inc |
| Comments: We recommend that radially operated transmission facilities be excluded from this standard and that be accomplished with an exclusion in the Applicability section: 4.1. Transmission Owner (radially operated transmission facilities excluded) 4.2. Generator Owner (radially operated transmission facilities excluded) |
| Individual |
| Kirit Shah |
| Ameren |
| No |
| The clarification from the Commission seems to require the additional rating and limiting equipment only for the specific facilities related to 1) IROL, 2) TTC, 3) generation deliverability, or 4) transmission service to municipals or load pockets. Therefore, if this must be included, we believe that Requirement R8.1.2 should be removed from R8.1 and included in R8.2. |
| No |
| Ratings (normal and emergency) should be provided by the requested date. The limiting equipment of the facility rating should be made available upon request, as needed for reliability concerns. The second limit and the corresponding limiting equipment should also be made available upon request, as needed for reliability concerns. |
| Yes |
| The implementation plan as proposed would be acceptable if the requirements of the proposed standard would be modified, as discussed in items 1 and 3 above and below in item 5. |

We would agree to provide limited additional rating information for reliability needs, but most of the reasons identified by the FERC and the SDT are not for reliability. We agree that an IROL is a reliability need and additional rating and equipment information may be appropriate for discussion to formulate corrective plans to mitigate IROLs. However, we are not convinced that we need a standard to provide that information as it can be readily obtained through existing planning and operating channels, upon request. We are in favor of increased situational awareness and providing operators with information that they need to maintain system reliability, but we are also aware that too much information may be overwhelming, and all ratings data for all equipment is not needed for system operation. We have discussed these proposed additional requirements with our Transmission Operations and Operations Planning personnel, and we all agree that this additional ratings information is not needed to maintain or increase situational awareness or to develop effective Operating Plans or Planning Assessments prior to real-time operations. We do not see a need to provide second limit information in the operating horizon to address TTC calculations, generator deliverability concerns, or transmission service to load pockets. Limits to TTC may not be a reliability concern unless the incremental transfer capability is negative or a very low value. Generator deliverability and available transmission services are market products, and processes and procedures are in place for market participants to address those issues. Low values of either quantity indicate congestion concerns between the generators and the LSEs rather than reliability issues. In addition, from our perspective, system upgrades to allow the second limits to become the most limiting facilities typically cannot be completed in the operating horizon. Therefore, we do not believe that second limits need to be provided in the operating horizon. We listened to the NERC Webinar presented by the SDT and appreciated the opportunity to submit questions, but we were not convinced that there is a reliability need for all the reasons given. It appears that the SDT is still attempting to build a case to support the FERC directives to provide the additional ratings information. However, we view this proposal as a repackaged version of an earlier proposal. The industry has voiced its opinion on the need for the additional rating information on several occasions now, and each time the industry has overwhelmingly said "No, these requirements are not needed to maintain reliability". We see no reason to change our earlier position, and therefore cannot support the latest proposed revisions to FAC-008. Below are additional reasons why the most limiting equipment and the second most limiting equipment and ratings should not be provided, except upon request: 1. There is no need to provide the most limiting equipment information for all facilities as the overwhelming majority of these facilities would rarely result in an IROL or SOL. 2. The Reliability Coordinator, Transmission Operator, and Planning Coordinator need to honor the existing ratings that are in place, and not worry about the second limits. The revised standard PRC-023 should eliminate relay limits as the first or second limits for nearly all facilities, so the concern for the system falling apart for single contingency events should be significantly reduced. 3. Providing this second limit information would be another record keeping nightmare for the Reliability Coordinator, Transmission Operator, and Planning Coordinator, as some of these entities can barely manage the ratings information that they presently have. 4. When IROL or SOL are identified, this should encourage discussion between the Reliability Coordinator, Transmission Operator, and Planning Coordinator and the local transmission owner or local transmission operator. These entities should work together to understand the System requirements and develop mitigation, if needed. Providing this additional rating information to entities prior to its request and without the benefits of discussion encourages operating decisions to be made unilaterally.

Group

Pacific Northwest Small Public Power Utility Comment Group

Steve Alexanderson

No

The SDT stated in the recent webinar that they did not consider R7 and R8 to be onerous. Data requests would be infrequent and for specific facilities. The comment group disagrees, since every audit consists of a full data request for all actively monitored standards. Affected entities may be expected to provide the data for every facility at each audit. Please add language to the two requirements indicating that data requests are only for operating the interconnected BES reliably, and not for compliance assessment.

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| |
| Please see http://www.nerc.com/filez/enforcement/FinalFiled_ANOP_NOC-505.pdf for an example of how FAC-009-1 R1 and R2 (to be replaced by FAC-008-3 R6 and R7) for an example of how these regulations are being applied improperly to radially operated local distribution systems. Suggest "4.1. Transmission Owner (radially operated facilities excluded)." |
| Group |
| PacifiCorp |
| Sandra Shaffer |
| Yes |
| PacifiCorp acknowledges that proposed Requirement R8 addresses the FERC directive in Paragraph 756. However, the Standards Drafting Team carried over from Order 693 some ambiguous language that may require clarification. Paragraph 756 directs that NERC include language requiring entities to identify the next most limiting component for facilities for which the thermal rating causes an impediment to service to "major cities or load pockets." Requirement R8.2 necessarily contains this requirement as directed by the Commission. It is unclear to PacifiCorp what the Standards Drafting Team would define as a "major" city. Also, it is unclear whether the term "major" is intended to apply to load pockets as well and, if so, what is considered a "major" load pocket. Regardless of whether "major" applies to load pockets, further clarification also is needed regarding what is meant by the term "load pocket." PacifiCorp requests modification of Requirement R8 to clarify this element. |
| Yes |
| |
| Yes |
| |
| Yes |
| PacifiCorp does not believe that the proposed Implementation Plan, which provides for a 12-month period before FAC-008-03 becomes effective, allows for sufficient time for entities to update their Facility Rating Methodology and their associated Facility Ratings. The Implementation Plan for this standard should be tied to the implementation of the NERC Alert for FAC-008. The Implementation Plan should reflect that the effective date for compliance with this standard is 12 months after the close of the activities required under that NERC Alert (currently scheduled for December 31, 2013). While PacifiCorp understands that the NERC Alert is not equivalent to a mandatory Reliability Standard, it nonetheless imposes significant compliance and operational burdens on registered entities and, only after the close of those activities responsive to the NERC Alert, can entities properly comply with the modifications in FAC-008-3 directed by the Commission. |
| Under FAC-008-3 Requirement R8, each Transmission Owner and Generator Owner (subject to Requirement R2) shall provide certain information, including facility ratings information, to the listed registered entities. The information to be provided includes, according to the proposed Requirement R8, information related to "solely and jointly owned Facilities that are existing Facilities, new Facilities, modifications to existing Facilities and re-ratings of existing Facilities)." The requirement for all Transmission Owners and Generator Owners to submit data for jointly owned facilities will mostly likely result in the following: 1) duplicative information being submitted by joint-owners of the same Facilities; and 2) while only one joint owner is likely to have responsibility for developing facility ratings, other joint owners may become liable under this requirement for activities over which they do not have clear authority to perform. Requirement R8, as written, is relatively clear and unambiguous and PacifiCorp agrees with what appears to be the intent of the requirement (i.e. that there are no gaps in facilities ratings that occur due to joint-ownership arrangements). However, due to ambiguity as to which entity or entities to which the requirement may be applicable, the standard may not be enforced effectively or equitably. PacifiCorp suggests that, to resolve this issue, the standard should require that an entity that jointly-owns Facilities designate a single registered entity as responsible for the provision of the required information. |
| Group |
| Bonneville Power Administration |
| Denise Koehn |
| No |

We believe we understand the intent of the requirement, but do not believe that it is adequately communicated. Therefore, we are suggesting alternative language for R8.2 and R8.2.2 that if included would allow us to vote yes during the next ballot. Revised language: 8.2 Within 30 calendar days (or a later date if specified by the requesting entity), for any requested Facility that has equipment with a Thermal Rating that limits the requesting entity's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Yes

Yes

Yes

There are several additional edits needed to the current draft of FAC-008-3 that would remove confusion or increase understanding. These are as follows: In A.5 - Define the acronym BOT In B.R8 and B.R3 - International Council on Large Electric Systems (CIGRE) should be replaced with International Electrotechnical Commission (IEC) or removed and left with IEEE only as an example. Although CIGRE performs studies and provides recommendations the standards are developed in IEC. In M4 – (Revise) Each Transmission Owner shall... (to) Each Transmission or Generator Owner shall... and remove the second sentence which is a repetitive statement already covered by the first sentence. There is a mixed use of reference to requirements as R(number) or just a number. For consistency: In M4 – Change ... accordance to Requirement 4 to ... accordance to Requirement R4 In M5 – Change ... accordance to Requirement 5 to ... accordance to Requirement R5 IN M6 – Change ... R2 and R3 (Requirement 6) to ... R2 and R3 and R6

Individual

David Thorne

Pepco Holdings Inc

No

Although the proposed R8 contains the "words" from the FERC directives, the requirement does not directly increase reliability in real time, may cause operational confusion and is more appropriately addressed in the long term planning function not in the Operations Planning time horizon. For either the 1st limiting component or the next, both should be by request only. If the entity needs it let them request. In many cases the entity will never use the component data in operations. The actual piece of equipment that limits a facilities rating does not enter into operators decisions made in the operational time frame. The system limits are either an IROL or an SOL. Other procedures call for the operators to monitor the normal ratings and the contingency limits (or IROLs or SOLs) and take actions prior the flows reaching those limits. If the limits are violated due to a multiple facility trip there is a specified time frame to correct the violation. Use of the "next" most limiting piece of equipment is not practical or appropriate in real time operations. The requirement uses terms that are not defined: deliverability, major city and load pocket. Although that is the words used by FERC in Order 693, they do not conform to existing terminology and methodology in operating the BES. Maybe the situations when a request could be made for the second limit/rating ought to be any IROL, SOL or BES facility limitation.

No

The time horizon for supplying the limiting component should be in the planning horizon.

No

The measure should take into account if the requesting entity does not require the limiting components or the next limiting rating.

Yes

Individual

Joe Petaski

| |
|--|
| Manitoba Hydro |
| No |
| It is unclear which facilities the additional thermal rating information will be required for. FERC asked for additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets. It is open to interpretation whether a facility is actually an impediment to generator deliverability or an impediment to load serving: -Should one perform n-1 analysis and determine whether a thermal limit is violated? Or is n-2 analysis necessary? -Is a radial feed to a generator an impediment to delivery? -What constitutes a major city or load pocket? One would assume at least 300 MW to be consistent with some other NERC reporting requirements. Requirement R8 should be rewritten to clarify which facilities this additional thermal rating information will be required for. Perhaps making it a bright line standard (for example facilities greater than 300 kV) would be a simpler approach. |
| No |
| The VRF should be Lower. Requirement 8.2 only requires the entity to provide information, and this information is the next most limiting element not the most limiting element. |
| Yes |
| |
| Yes |
| |
| Given the wide range in assumptions in short time overload, NERC should provide guidance for model building and assessments. NERC should outline the ratings to include (eg. should each entity have 15 minute, 30 minute, 1 hour, 4 hour, 8 hour, etc. ratings?) and should suggest how these ratings are documented, communicated and used. Also, the industry has previously rejected the requirement to identify the next most limiting facility based on the fact that it was not a reliability need, but commercially driven want. In its explanation as to why the next most limiting element is required FERC and the SDT have failed to show a reliability need. In Diagram 1 of the Unofficial Comment Form, it is obvious that if a transmission owner provides a continuous and a shorter term rating, the continuous rating of the facility is based on Equipment 3 and the shorter term rating is based on Equipment 2. There is no need to provide two continuous and two shorter term ratings from a reliability perspective. |
| Individual |
| Patricia Robertson |
| BC Hydro and Power Authority |
| No |
| We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot. 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. |
| |
| Yes |
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| Individual |
| Andrew Pusztai |
| American Transmission Company, LLC |
| Yes |
| ATC proposes revising the wording of Requirement R8 to more carefully refer to the Thermal Ratings of the requested Facilities: (see changes below) R8.1 . . . R8.1.1 Thermal Ratings for the requested Facilities R8.1.2 Identify the limiting equipment associated with the Thermal Ratings of the requested Facilities R8.2 . . . R8.2.1 Next Thermal Ratings for the requested Facilities beyond the most limiting equipment R8.2.2 Identify the limiting equipment associated with the next Thermal Ratings of the requested Facilities These revisions are proposed by ATC because a Thermal Rating for a Facility could be based on more than one piece or type of equipment. For example, a Facility could have two switches with the same rating or two different items (breaker and relay) with the same rating. Conversely, the piece or type of equipment associated with the Thermal Rating and the next Thermal Rating could be one single item. For example, the equipment could be the line conductor, but different sections of the line conductor could have different ratings due to different ground clearances, wind exposure, or conductor types. |
| Yes |
| ATC agrees, however, believes the Violation Risk Factor for requirement 8 should be changed to "Low" and the Time Horizon for requirement 8 should be "Planning". Information pertaining to a second limit is informational because an operator at the desk cannot act on this information without obtaining additional information or technical support. Furthermore, the fact that the information must be specifically requested validates a lower risk level. |
| Yes |
| |
| Yes |
| |
| |
| Individual |
| Brian Jacoby |
| BGE |
| Yes |
| No comment. |
| Yes |
| No comment. |
| Yes |
| No comment. |
| Yes |
| No comment. |
| No comment. |
| Individual |
| Darrin Adams |
| East Kentucky Power Cooperative |
| Yes |
| |
| Yes |
| |
| No |
| EKPC does not believe that the identity of the limiting equipment is necessary to provide a reliable BES. Therefore, this information should not be required in R8 or M8. |

| |
|---|
| Yes |
| It is not clear how requiring identification of the most limiting component and the second most limiting component results in a more reliable system. The identity of these components may vary over a range of ambient temperatures and network topology conditions. It would be nearly impossible to capture this information in a static published document for all possible system operating conditions. Furthermore, the time and effort involved in identifying and documenting the increase in Facility Ratings based on the second most limiting component outweighs the benefits of knowing this information. From a reliability perspective, demonstrating that Facility Ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. The system will be operated using these Facility Ratings to maintain system reliability. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue, and therefore should not be a requirement included in a Reliability Standard. Another issue with Requirement 8 is that the terms "most limiting equipment" and "next most limiting equipment" are not well defined, particularly when taken in conjunction with paragraph 76 of FERC's September 16, 2010 Order. The example given in that paragraph seems to indicate that the most limiting equipment is the component that is limiting for normal conditions, whereas the next most limiting equipment is the component that is limiting for contingency conditions. This does not appear to be the intent of Requirement 8. Clarifying language is necessary to eliminate the confusion. |
| Group |
| Southern Company Transmission |
| JT Wood |
| No |
| The R8 requirement does reflect the Directive however we believe that item (3) should be limited to generators who have firm transmission service. We also have concerns over the undefined terms used in item (4) "major cities" and "load pockets". Also see question 5 comments. Proposed change 8.2.1. If a Facility has a shorter term rating higher than its continuous rating such that another piece of equipment in the Facility would become the most limiting in the shorter term then the identity of the existing next most limiting equipment of the Facility 8.2.2. If the condition in 8.2.1 exists then provide the Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Otherwise indicate to the requestor that the limit provided in 8.1 applies. |
| Yes |
| Yes |
| Yes |
| The follow comment uses the Comment form example definitions and Diagram 1 labeling from the Reliability Objective Discussion section – labeling of point (E2) and (E3) was added to Diagram 1 for clarity. We believe that the intent of the Directive's requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of equipment 3 could result in equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, (E3) continuous rating and (E2) shorter term rating, would seem to meet the Directive's clarified requirement. In cases where the limiting equipment's continuous rating is equal to its emergency rating (equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The "Reliability Objective Discussion" and R 8.2.2 goes much further by suggesting that four data points are required being the continuous and emergency ratings for limiting and next most limiting equipment. |
| Individual |
| Tony Kroskey |
| Brazos Electric Power Cooperative |
| No |
| See response to Question 5. |

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| From a reliability perspective, demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. Even though the SDT has developed what some may consider a reasonable compromise by requiring identification of the second most limiting component, it is not clear how this results in a more reliable system. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue. The proposed standard lacks clarity. For example, part of the purpose from FERC 693 was to 'identify the limiting component(s) and define the increase in rating based on the next limiting component(s) for all critical facilities'. How does the proposed requirement give an entity guidance on how to detail the increase and what are considered 'all critical facilities'? Is simply having it in the MLSE sufficient? |
| Individual |
| Jim Keller |
| We Energies |
| No |
| R8 applies only to Generator Owners subject to R2, that is, those who own the GSU and high-voltage leads to the transmission interconnection point. This Requirement needs to be clarified to indicate whether it applies only to the equipment between the GSU and the transmission interconnection point, or if it applies to all the equipment between the generator and the interconnection point. |
| Yes |
| |
| Yes |
| |
| We maintain that the changes based on the FERC directive should not be applied to Generator Owners. The connection from the generator to the transmission system is a radial connection which by its nature does not significantly impact the power transfer capability across the Bulk Electric System. The effort and cost for Generator Owners to be subject to these additional requirements is not accompanied by an increase in reliability, and is therefore not justified. |
| Individual |
| Claudiu Cadar |
| GDS Associates |
| Yes |
| a. We do agree that the proposed requirement R8 addresses FERC directive from Order 693, Paragraph 756, however we disagree with the language used within the requirement in several instances as follows: • The applicability to the GO should not be stated in parenthesis. We suggest rewording such as "Each Transmission Owner and Generator Owner shall provide [...]" • The information provided by the GO and TO is based upon their own process and schedule and may not coordinate with the request from the RC, TP, etc. FR SDT explained that "If one party declines to agree to a schedule, then both parties could be in violation of the requirement. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC", however we believe that rather to pile up the entities found noncompliant due to the schedule incompatibility, the standard shall be adjusted to permit reasonable timeframes. • It is unclear why two most limiting pieces of equipment must be identified. If a Generator or Transmission Owner must notify and provide its Facility Ratings for new or re-rated facilities as required in R7 what purpose does the second limiting factor have? |
| No |
| a. Development of a percentage based Violation Severity Level seems arbitrary and capricious. There is no assistance provided in understanding what constitutes a required Rating information submittal. Smaller projects with less equipment will be penalized greater. b. We do not see how the percentages on which the responsible entities have missed to provide the required information to the requesting |

entities can be estimated. c. We can agree on the proposed number of days used in the VSLs criteria, but not if the schedule is entirely decided by the requesting entity.

No

a. The applicability to the GO should not be stated in parenthesis. We suggest rewording such as "Each Transmission Owner and Generator Owner shall have [...]"

Yes

a. Title • The title of proposed version 3 of the standard states simply "Facility Rating" while the current FAC-008-1 is defined as the "Facility Rating Methodology". We agree on this if there is a reason to combine the two FAC-008 and FAC-009 altogether, otherwise the title should be kept the same. b. Requirement R1 • While it is indicated that the line of demarcation between generation facilities and transmission facilities is the step up transformer, the equipment after the generator step up transformer is usually considered, and rightfully so, a generator lead. The unilateral assertion that equipment after the generator step up transformer be considered transmission type equipment is incorrect. This sets up a situation where all Generator Owners would be seen as a Transmission Owners, which is not proper. • The main step-up transformer is not an appropriate reference in the standard. Although FR SDT have previously agreed that "the main step up transformer may not be the point of interconnection", and explained that the R1 and R2 should be considered together as "R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection", this would not support the main purpose of the standard as to be generally applicable on all and any of the various generation facility topologies. While in R1 the GO is required to have "documentation for determining the Facility Ratings", R2 requires the GO to have "a documented methodology for determining Facility Ratings (Facility Rating Methodology)". In other words R1 it seems to require the actual Facility Ratings along with the premises related to how these were determined including the methodology, while R2 requires only the methodology. FR SDT's justification is in contradiction with the language used. We suggest rewording both requirements R1 and R2 as to reference only the point of interconnection and not some specific equipment. • Why is nameplate rating left out of the first bullet in R1.1 but included in the first bullet of R2.1? Is this an indication that nameplate data is not a valid rating methodology? Are the rating methodologies not left to the entity to determine? • What is meant by engineering analyses? This term is very broad and can be interpreted multiple ways. Would this not add confusion to the Audit process as different Regions interpret engineering analyses in different ways? Could this not bring about unequal enforcement? c. Requirement R2 • While R1 references ANSI and IEEE, requirement R2 references IEEE and CIGRE standards. Even though, as explained by the FR SDT, "ANSI/IEEE/GIGRE, etc, are examples and are meant to provide flexibility" the language of the standard should not be ambiguous or to reflect a selective and impartial approach. We suggest that any reference to technical standards to be provided such as "[...] industry standards (e.g. Institute of Electrical and Electronic Engineers (IEEE) standard / International Council on Large Electric Systems (CIGRE) standards / American National standard Institute (ANSI) standards, etc.)". • Why isn't the verbiage in Requirement 2.1 first bullet carried throughout the document (R2.2.2 & R3.2.2)? • Second bullet on R2.1 would detail the acronym for IEEE while the first reference of these standards in R1.1 is inadvertently missing this. Generally, the acronyms are explained at their first use in the text of the document. Please see also prior comment and correct the language accordingly. • What determines the average temperature at 2.2.3? How many years of data must be analyzed to provide an average? How are unusual events or variations handled? • We assume that the details pertaining the ambient conditions at 2.2.3 are meant to widen and clarify to which extent these should be considered, however we believe that the statement "[...] as they vary in real-time)" would rather confuse the GO as they may figure the likelihood of a dynamic approach. We suggest rephrasing such as "Ambient conditions (as considered by the Generator Owner based upon local conditions or / and industry standards)" • Although the footnote 1 is to serve as an example for what type of operating limitations to be considered, we believe that this can generate confusion. For instance the GO can understand that is required to consider various operating limits determined by any equipment temporarily taken out of service. While we believe that FR SDT has not envisioned this approach, we suggest deleting the word "temporary" from the footnote. • We consider that the language used at 2.4 is not the best choice. We suggest rephrasing this as follows: "2.4. The process by which the Rating of equipment that comprises a Facility is determined reflecting all of the following: 2.4.1. The equipment addressed including, but not be limited by the conductors,

transformers, relay protective devices, terminal equipment, series and shunt compensation devices, etc. 2.4.2. The corresponding equipment Rating characterized at a minimum, by its Normal and Emergency Ratings (or Continuous / Shorter Term Ratings)" d. Requirement R3 • See R1, R2 comment pertaining the standards reference. • See R2 comment pertaining the ambient conditions • See R2 comment pertaining the operating limitations • We consider that the language used at 3.4 is not the best choice. See comment and suggested changes at 2.4 e. Requirement R4 • Not sure why the GO is required to make available the documentation for determining the Facility Ratings along with the methodology, while the TO is required to provide only the methodology. • The number of calendar days (21) to provide information is unusual. Most Standards have a period of 30 or 45 calendar days. Should there be consistency amongst all Standards? Would the change from 15 to 21 to 30 impact reliability? f. Requirement R5, R6, R7, R8 • It seem that there is some overlap in between this standard and FAC-009-1

Individual

Bill Middaugh

Tri-State G&T

Yes

No

There is room for confusion where the VSLs for R7 and R8 use the phrase "missed meeting the schedules." Depending on the intent, it should perhaps be changed to "missed meeting one or more schedules" or "missed meeting all of the schedules" in each of the VSLs.

Yes

Yes

None

Group

Luminant Power

Mike Laney

Yes

Yes

Yes

Yes

Luminant agrees that the Facility Rating standard should be revised and thanks the Standard Drafting Team (SDT) for their work and the opportunity to comment. The standard appears to be written to be more applicable to transmission owners and associated equipment and not to that of Generation Owners (GO). Luminant is concerned that the draft standard is not always clear as to what ratings are expected from GOs, and offers the following comments for consideration by the SDT. Requirement R1 is not clear what Ratings documentation has to be developed by the GO. The standard should only apply to the generating unit output capability, and then the equipment from the generator leads to the Point of Interconnection (POI). The requirements should not apply to the individual components that make up the generating unit such as boiler components, feedwater systems, condensate systems, environmental controls, etc. Getting into the details and systems that compose a generation unit would not provide any substantial benefit to the rating of the unit. Requirement R2.4 seems to imply the scope from the generating leads out to the POI, but it needs to be specifically clarified in the standard. Requirement R1 should contain a provision where the rating of a generating unit can be based upon a regulatory or legal limit to unit output. R1.2 appears unnecessary as the prime R1 requirement implies an accurate overall rating. Requirement R2.2 is confusing as to how it applies in relation to R2.1, in particular if the GO uses OEM information to rate the equipment. The footnote on

2.2.4, Operating limitations should be removed. Other NERC standards require unit conditions such as temporary deratings or unit capability changes to be reported to the BA or TOP in a timely manner. Requirement R2 has a Time Horizon of Long Term Planning, and temporary derates do not appear to fit that criteria. Requirement 2.4.2 requests both the normal and emergency rating for equipment from the MPT to the POI. While that may be needed and modeled for some situations, it is not necessary for all facilities. For example, at a generating facility where the lines, breakers, buswork and other electrical components from the MPT to the POI were designed and constructed well in excess of the output capability of the generating unit (and there is no transmission thru flow), the connections may not all be modeled to that level of detail. Luminant suggests the following language revision for 2.4.2: "The scope of the Ratings addressed shall include as a minimum both Normal and Emergency Ratings, where applicable and when requested by the Planning Authority or Planning Coordinator". Requirement R7 needs a boundary on the timeframe for a response. The way the current requirement is written, a requesting entity to send a notice to a TO or GO that they are scheduled to provide information one day later. Luminant suggests the language be modified as follows: "...as scheduled by such requesting entities, but not sooner than 30 calendar days from the date of a specific request". Requirement R8 seems to imply that the applicable GO equipment is that in R2, it is not explicit. In a generating plant, there is a wide variety of equipment that may have a thermal rating. It appears the intent was to address Thermal Ratings for transmission type equipment only. Please clarify that for the GO, R8 only applies to GO equipment from the MPT to the POI. Requirement 8.1 (similar to R7) needs a boundary on the timeframe for a response. Luminant suggests the language be modified as follows: "As scheduled by the requesting entities, but not sooner than 30 calendar days from the date of a specific request". Requirements 8.2.1 and 8.2.2 could be combined as follows: "The identity and Equipment Rating of the next most limiting equipment of the Facility". The Requirement R8 proposed changes have an applicability to Generator Owners, however the SAR Applicability Section only has the Transmission Owner box checked.

Group

Southern Company Generation (SCG) Technical Services

Bill Shultz

No

The R8 requirement does reflect the Directive however we believe that item (3) should be limited to generation having firm transmission service. Proposed change: 8.2.1. If a Facility has a shorter term rating higher than its continuous rating such that another piece of equipment in the Facility would become the most limiting in the shorter term then the identity of the existing next most limiting equipment of the Facility 8.2.2. If the condition in 8.2.1 exists then provide the Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Otherwise indicate to the requestor that the limit provided in 8.1 applies.

Yes

Yes

Yes

The following comment uses the Comment form example definitions and Diagram 1 from the Reliability Objective Discussion section: We believe that the intent of the Directive's requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of Equipment 3 could result in Equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, the Equipment 3 continuous rating and the Equipment 2 shorter term rating, would seem to meet the Directive's clarified requirement. In cases where the limiting equipment's continuous rating is equal to its emergency rating (Equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The "Reliability Objective Discussion" and R 8.2.2 goes much further by suggesting that four data points (two for Equipment 3 and two for Equipment 2) are required being the continuous and emergency ratings for limiting and next most limiting equipment.

Individual

Rex Roehl

| |
|---|
| Indeck Energy Services |
| No |
| The FERC order addresses limiting elements for different time periods, continuous versus short term. R8 is drafted based upon the diagram in the printed comment form which misses FERC's point. At either the continuous duty period (eg 24 hours) or at the emergency (eg 4 hour) duty period, the limiting element will always limit the equipment. The FERC order identifies the difference between the E3 limiting in the continuous duty period and E2 in the emergency duty period. And if the duty period was further modified, such as to 15 minute duty period, then a different element such as E1 might be limiting. R8 doesn't grasp FERC's issue. An IROL or other analysis would seem to be for a different period than what some TO's or GO's would rate their facilities at based upon R2. R8 should define in the Request to the TO or GO, what duty period is relevant for the particular condition that is being analyzed (eg 15 minutes or 4 hours) and request a rating for that duty period. |
| No |
| The VSL's are focused on a TO with numerous ratings to provide. A GO might only have one. The GO violation would always be Severe. The number of ratings not provided should be an "either or" with the percentage, such as: Lower VSL: The responsible entity failed to provide more than 5 Ratings or provided less than 100%, but not less than 95% of the required Rating information to all of the requesting entities. Moderate VSL: The responsible entity failed to provide more than 10 Ratings or provided less than 100%, but not less than 90% of the required Rating information to all of the requesting entities. High VSL: The responsible entity failed to provide up to 15 Ratings or provided less than 100%, but not less than 85% of the required Rating information to all of the requesting entities. Lower VSL: The responsible entity failed to provide up to 20 Ratings or provided less than 85% of the required Rating information to all of the requesting entities. |
| No |
| M8 fails to indicate that the TO or GO only need evidence of responding to specific requests. |
| |
| |
| Group |
| Public Service Enterprise Group |
| Mikhail Flakovich |
| No |
| Comment #1 PSEG suggest numbering the 4 scenarios in section 8.2, similar to how it was numbered in the FERC paragraph 756. Also, the FERC paragraph used the word "causing" but the standard used the word "having". Therefore it would read as: "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as causing one of the following 1. An Interconnection Reliability Operating Limit (IROL); 2. A limitation of Total Transfer Capability, 3. Impeding generator deliverability, or; 4. Impeding service to a major city or load pocket." Comment #2: Would the requesting entity be allowed to ask for this data at each of the registered entity's facilities at the same time, or would it only be one facility at a time? |
| Yes |
| |
| Yes |
| |
| Yes |
| |
| N/A |
| Individual |
| Michael Schiavone |
| Niagara Mohawk (National Grid Company) |
| Yes |
| While we agree R8 meets the FERC Directive, we believe there are things that can still be done to improve the requirement. 1. Eliminate requirement R 8.2 (reproduced below). There is a lot of ambiguity in the term "major city or load pocket" and hence the proposal to completely eliminate the |

requirement. 2. For R 8.1.2 "identity of the most limiting equipment of the Facilities" RSC believes this would be applicable to each individual Normal and Emergency rating, and be required to be provided. We believe this proposed revision may have gone beyond the intent of the FERC Directive.

No

The selection of 100% to 95%, and 95% to 90%, etc, seems arbitrary and not based on a reliability reason. It is T hard to understand how one would classify whether the information provided would fall into those percentage categories and would then cause the risk to move from low to severe.

Yes

Yes

1) We feel it is most appropriate that the requesting party as proposed needs to have a legitimate reliability reason for requesting the information and they would be limited to the particular functional entities noted in the requirement as drafted. 2) National Grid already provides responsible parties (including the appropriate Reliability Coordinator, Planning Coordinator, and Transmision Operators) with ratings of shorter terms than continuous, as well as ambient based ratings, which can and do get applied to handle certain type of scenarios presented in the webinar. National Grid believes that there is no special request needed for these parties to obtain such ratings, nor is there a need to ignore any equipment in development of such ratings. Moreover, ignoring existing equipment raises question of what potential reliability impacts would come along with this approach. 3) The treatment of multiple instances of same sized equipment (like several 800A disconnect switches in a circuit), is left unclear. In the webinar, one NERC response said to lump them all together and go to next higher limit. Another said to indicate such was the case that several pieces of equipment impose same limit. It was apparent that the only recourse would be to include language in each entity's ratings methodology should address how this is handled. It is suggested that this issue be addressed in the standard otherwise it will likely need to be addressed in a CAN or Interpretation Request. 4) Description of how this info would be used implied that ops planner might exceed the most limiting element rating and go to next most so long as it was not a closely following relay limit that could put circuit at risk of pulling out. It is not clear to us how a system could be operated in excess of equipment ratings for the appropriate duration. The fact that we establish Short Time E emergency (STE) and Long Time Emergency (LTE) ratings higher than normal ratings that get applied in emergency situations for shorter than normal continuous timeframes seemed to be ignored.

Individual

Saurabh Saksena

National Grid

Yes

While we agree R8 meets the FERC Directive, we believe there are things that can still be done to improve the requirement. 1. Eliminate requirement R 8.2 (reproduced below). There is a lot of ambiguity in the term "major city or load pocket" and hence the proposal to completely eliminate the requirement. 2. For R 8.1.2 "identity of the most limiting equipment of the Facilities" National Grid believes this would be applicable to each individual Normal and Emergency rating, and be required to be provided. We believe this proposed revision may have gone beyond the intent of the FERC Directive.

No

The selection of 100% to 95%, and 95% to 90%, etc, seems arbitrary and not based on a reliability reason. It is hard to understand how one would classify whether the information provided would fall into those percentage categories and would then cause the risk to move from low to severe.

Yes

Yes

1) National Grid feels it is most appropriate that the requesting party as proposed needs to have a legitimate reliability reason for requesting the information and they would be limited to the particular functional entities noted in the requirement as drafted. 2) National Grid already provides responsible

parties (including the appropriate Reliability Coordinator, Planning Coordinator, and Transmission Operators) with ratings of shorter terms than continuous, as well as ambient based ratings, which can and do get applied to handle certain type of scenarios presented in the webinar. National Grid believes that there is no special request needed for these parties to obtain such ratings, nor is there a need to ignore any equipment in development of such ratings. Moreover, ignoring existing equipment raises question of what potential reliability impacts would come along with this approach. 3) The treatment of multiple instances of same sized equipment (like several 800A disconnect switches in a circuit), is left unclear. In the webinar, one NERC response said to lump them all together and go to next higher limit. Another said to indicate such was the case that several pieces of equipment impose same limit. It was apparent that the only recourse would be to include language in each entity's ratings methodology should address how this is handled. It is suggested that this issue be addressed in the standard otherwise it will likely need to be addressed in a CAN or Interpretation Request. 4) Description of how this info would be used implied that ops planner might exceed the most limiting element rating and go to next most so long as it was not a closely following relay limit that could put circuit at risk of pulling out. It is not clear to us how a system could be operated in excess of equipment ratings for the appropriate duration. The fact that we establish Short Time Emergency (STE) and Long Time Emergency (LTE) ratings higher than normal ratings that get applied in emergency situations for shorter than normal continuous timeframes seemed to be ignored.

Group

SRP

Cynthia Oder

No

The language of requirement R8.2 seems to allow a utility to wait until a request is received to prepare the information. However, if a neighboring utility asked for bulk electric system data, the 30 calendar day time limit would not be enough.

Yes

Yes

No

NERC does not specify how to handle the common situation where several switches and breakers in a substation bay have the same rating. Do you pick one 3000 Amp breaker, and the 3000 Amp switch next to it is "second most limiting," or do you group all of the 3000 Amp devices as most limiting? When clearance to ground limits a line rating in a certain span, the next upgrade could be a nearby span, and could only be slightly higher. Such results would not provide a good gauge of the cost of a meaningful increase in the line rating. An increase in one line rating wouldn't necessarily add to an IROL (Interconnection Reliability Operating Limit) or TTC (Total Transfer Capability). Extensive power flow, stability and voltage studies are usually needed to know that.

A significant amount of staff time would be required to comply with the proposed "next most limiting element" requirement. It's not clear that the information would be of value to FERC or NERC. In many cases the administrative burden on the utilities would only provide trivial or self-evident results.

Individual

RoLynda Shumpert

South Carolina Electric and Gas

Yes

Yes

Yes

Yes

| |
|---|
| Individual |
| Dennis Sismaet |
| Seattle City Light |
| No |
| <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| No |
| <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| No |
| <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| No |
| <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we</p> |

believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot. 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1

Individual

Jason L. Marshall

ACES Power Marketing

Yes

While it likely will satisfy the FERC directive, proposed Requirement R8 is ambiguous, leaves much room for interpretation, and causes some confusion. For instance, when would an IROL be expected to have a thermal limit? Violations of IROLs by definition can expose a widespread area to cascading outages, uncontrolled separation or instability. When does exceeding a thermal limit ever do this? Since TTCs fluctuate based on system conditions, what studies would the limiting TTC target? Studies used to support posting ATCs/AFCs? Near-term seasonal assessment studies? Long-term transmission planning studies? Many TSPs have automated tools that recalculate TTC every hour for the next 168 hours. It would not make sense to use these hourly TTCs as they change too rapidly but we are left wandering what the drafting team had in mind. What does impeding generator deliverability and impeding service to a major city or load pocket mean? We assume that the drafting team means limits deliverability or service. Impede is a poor choice of words as all lines have impedance and, thus, impede service and deliverability. Use of a major city or load pocket is ambiguous and should be avoided. What constitutes a major city? The top 10 largest cities by population in the U.S.? The top 100 largest cities? What constitutes a large load pocket? 100 MW of load, 200 MW of load? By using ambiguous terms, there will surely be unequal enforcement of the requirement for several years until those details are worked out in the audit and enforcement processes. Now is the time to resolve these ambiguities.

Group

NERC Standards Review Subcommittee

Bruce Wertz

Yes

No

We agree that the "Medium" rating for R8.1 is correct since it is due immediately. However, the VRF for R8.2 should be "Lower" since the data is not required immediately for real-time operations.

Yes

Yes

The FERC directive may be too prescriptive in requiring a second limiting element and its facility

rating. What might be useful in real-time operations would be a short-term rating of a facility (i.e. one hour rating) that may be already supplied in R2, which requires normal and emergency ratings.

Group

MISO Standards Collaborators

Marie Knox

Yes

We propose revising the wording of Requirement R8 to more carefully refer to the Thermal Ratings of the requested Facilities: (see changes below) R8.1 . . . R8.1.1 Thermal Ratings for the requested Facilities R8.1.2 Identify the limiting equipment associated with the Thermal Ratings of the requested Facilities R8.2 . . . R8.2.1 Next Thermal Ratings for the requested Facilities beyond the most limiting equipment R8.2.2 Identify the limiting equipment associated with the next Thermal Ratings of the requested Facilities These revisions are proposed because a Thermal Rating for a Facility could be based on more than one piece or type of equipment. For example, a Facility could have two switches with the same rating or two different items (breaker and relay) with the same rating. Conversely, the piece or type of equipment associated with the Thermal Rating and the next Thermal Rating could be one single item. For example, the equipment could be the line conductor, but different sections of the line conductor could have different ratings due to different ground clearances, wind exposure, or conductor types. For R8.2, we have four areas of concern for the second most limiting piece of equipment of a Facility. These four items are, "Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket" and they are the exact words that the commission used in FERC Order 693, paragraph 756. The SDT should apply the "equally efficient and effective" rule of thumb and clarify what "impeding service to a major city or load pocket" means. Furthermore paragraph 771 states that "... (3) for each facility, identify the limiting component and, for critical facilities, the resulting increase in rating if that component is no longer limiting". The Commission uses the word "critical facilities". We recommend that the SDT rewrite R8.2 to read; 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested critical Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket . Entities have a list of these "critical facilities" and this will ensure that Facility Ratings are used in the reliable planning and operation of the Bulk Electric System.

Yes

We agree, however, the Violation Risk Factor for requirement 8 should be changed to "Low" and the Time Horizon for requirement 8 should be "Planning". Information pertaining to a second limit is informational because an operator at the desk cannot act on this information without obtaining additional information or technical support. Furthermore, the fact that the information must be specifically requested validates a lower risk level.

Yes

Yes

The MISO has some concern with the implementation of the FAC-008-3 standard because it does not benefit or enhance reliability.

Individual

Armin Klusman

CenterPoint Energy

R8.1.2 requires Transmission Owners and applicable Generator Owners to provide the "Identity of the most limiting equipment of the Facilities (as scheduled by the requesting entities)". The identification of the most limiting equipment of the Facilities is not part of the typical planning process; that is, this information is not submitted for the development of steady-state planning models. In addition,

commercially available power system planning software programs do not accept such data. CenterPoint Energy recommends that the identification of the most limiting equipment of the Facilities be provided only upon request and within 30 days of a request. This will result in R8.1: "Facility Ratings as scheduled by the requesting entity", R8.2: "Identity of the most limiting equipment of the Facilities as requested within 30 days (or a later date if specified by the requester)", and R8.3: "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.3.1. Identity of the existing next most limiting equipment of the Facility 8.3.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.3.1."

Individual

Terri Pyle

Oklahoma Municipal Power Authority

Yes

Yes

Yes

Yes

Individual

B. Vijayraghavan

Pacific Gas & electric Comapny

No

Please consider following revisions: 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits USE OF the Requester's FacilitIES by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Yes

Individual

Alice Ireland

Xcel Energy

No

Xcel Energy does not believe that the proposed Requirement 8 meets the intent of Paragraph 756 of Order 693, nor is it related to reliability. We believe FERC's directive was focused on the "prior identification of this second limiting component" in order to allow entities an opportunity to take mitigating actions that may help avoid events that could lead to cascading. This would indicate to us that FERC wanted to see a planning requirement, which would then potentially lead to maintenance and operational subsequent actions. As drafted, the requirement does not encourage proactive planning-related activities. In practice, planning entities may request this information and perform such proactive assessments. But, there is no requirement for them to do so, as we believe FERC had intended. Furthermore, from a system operations perspective, there is no reliability benefit gained from knowing the 2nd most limiting element and its rating. The 1st most limiting factor must be

respected and the system must be operated in a manner that doesn't violate that limit. Knowledge of the 2nd most limiting factor, or any other limiting factor, does not affect the operation of the system. If the intent of this requirement was to focus on the planning of the BES, it is misguided and could lead to erroneous assumptions. In paragraph 76 of its September 16, 2010 Order Denying Rehearing, FERC recognizes that facility ratings can change under different operating conditions. Indeed, the discussion centers around the fact that different equipment can use different time periods to determine the ratings, i.e. 4 hour, 8 hour, or ½ hour). The standard only asks for an ambiguous next most limiting element. On the Xcel Energy systems, there are 4 ratings that are considered; summer normal, summer emergency, winter normal and winter emergency. It is not unusual for different pieces of equipment to be the limiting (or 2nd most limiting) element depending upon the rating under investigation. To determine the increase in a facility rating if the most limiting element is no longer in place, one would need to investigate all four ratings. In order to come up with a meaningful increase in a facility's rating, a more detailed study would be required, and simply identifying the 2nd most limiting element and that element's rating may not give an accurate picture of the system. Therefore, the requestor would also need to identify the time period that is under investigation (summer, winter, normal, continuous, emergency or short-term), and would require information around how the requested rating was developed. In addition, further consideration is needed regarding the term "next most limiting element." For instance, if your facility contains 3 CTs that all have the same equipment rating, does the "next most limiting element" mean the second of 3 CTs (in this example)? Or, does it mean the element after any and all equipment that currently limits the rating of the facility? Another example could be a jumper and a switch, both with the same equipment rating. Does the "next most limiting element" mean the switch (assuming the jumper was listed as the most limiting element)? Obviously, if multiple pieces of equipment have the same rating, then providing another piece of equipment with the same rating doesn't provide any new information. However, only providing the equipment with the next highest rating could seriously understate the work involved in getting to that higher rating. There could be multiple pieces of equipment that must be replaced to get to a higher rating. Likewise, further consideration and refinement is needed for the terms "major city" and "load pocket". Depending upon the perspective of the various parties involved, what constitutes a major city or load pocket could greatly vary. Additionally, there could be a city or load pocket on a radial line that has no effect whatsoever on the BES. Instead, we recommend defining a "major city" or "load pocket" in quantitative terms such as a certain population or megawatts, as is the case in EOP-004-1.

Yes

No

Yes

As explained in the response to question 1 above, if the purpose of Requirement 8 is to aid in the operation of the BES, it does not accomplish this, since the most limiting element must be respected. Knowledge of a higher rating (from the next most limiting element) could give an operator a false sense that the system could be operated at a higher limit. If the purpose of Requirement 8 is to aid in planning, there is a lot of additional information that would be required. In order to determine a new facility rating assuming the current most limiting factor is not present, then a study period longer than the proposed 30 days may be required. There are many factors that would need to be considered in making this determination. With that said, Xcel Energy feels that this type of planning analysis is already occurring and minimal increase in reliability would be gained by such a requirement. Transmission Planners are already tasked with developing plans to serve projected loads at various generation/load patterns. To properly do this, information must already be evaluated with area utilities on increasing ratings when needed. If the real goal is to determine what would need to be done to bring a facility up to a higher rating, the requesting entity should identify a target loading level (MVA) for the analysis in their request to the entity that owns the equipment. This study would be based on a requested loading level (MVA), as one could not derive this from the next limiting element. The proposed requirement also presupposes that all limitations are thermal in nature. For some northern entities, while the most limiting factor may be equipment, the next most limiting factor in the ability to move power may be a presidential permit. Likewise, for a generating facility, the next most limiting factor may be a piece of equipment in the balance of the plant (boiler, turbine, etc.).

The requirement does not seem to recognize this. Finally, Xcel Energy believes the requirement should more clearly define who can request the "next most limiting element". While the requirement clearly states who the information must be provided to, it does not seem to limit who can request that information. Limiting who can request this information would help keep this requirement more focused on reliability, and may prevent market participants from making requests that are not focused on reliability. Xcel Energy proposes the following modification to R8.1 and R8.2: 8.1. As scheduled by the requesting entities (associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s)) 8.1.1. Facility Ratings 8.1.2. Identity of the most limiting equipment of the Facilities 8.2. Within 30 calendar days (or a later date if specified by a requesting entity), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Group

IRC Standards Review Committee

Greg Campoli

No

Requirement 8.2 goes beyond what is mandated in the FERC Directive. Knowledge of these additional ratings is currently required through a collection of data in other IRO/TOP/TPL Standards. In addition Requirement 8.2 introduces the terms major city, and load pocket. These terms are not defined and would be subject to interpretation. This would result in a request for interpretation or a compliance application notice. If the requirement is retained, 8.1.2 should be revised to read: Identity of the most limiting equipment of the Facilities applicable to each individual Normal and Emergency rating required to be provided. However, as stated, this is a redundant requirement.

FAC-008-2, R8 is redundant with respect IRO-010 R1 that requires the RC to ask for needed data; and R3 requires TOs and GOs to provide that facility data. It is not clear the purpose of R8.2.1, it appears to be ambiguous and lacks transparency. There is no identification of who defines a "major city" much less what constitutes a "major city". Similarly there is no identification of who defines a "load pocket" much less what constitutes a "load pocket". FAC-008 R8 could further reduces reliability because if the requirement were effected it would allow 30 days response time to reporting such data. NERC Standards MOD-012 & 013 also provides that such data is exchanged and coordinated among all entities. Unlike the IRO standards that require identification of data and the time frame to submit the data, the FAC-008 requires the request to be completed within 30 days. Waiting 30 days for data that is needed in the next day's operation adversely impacts real time operations. Requirement R8 and its sub-parts to supply the second most limiting element for a piece of equipment serve no purpose. IRO-008 requires the RC to assess its area both day head, as well as every 30 minutes during the day. IRO-009 requires the RC to enact "preventive measures" if an IROL is predicted. The approval of and adherence to these two standards will ensure that the second most limiting component is never an issue. These two IRO standards that "the" most limiting element be respected not just for actual overloads but for predicted overloads. At no time is it allowable for an entity to exceed an established normal rating, only to observe the next most limiting element. The Models used by the RCs will define the level of detail of the data that needs to be provided. If the component data is needed then the RC will request the data be provided per IRO-010, and will be analyzed per IRO-008. If the data is not modeled than having the TO and GO submit that information is not an effective use of time or manpower. The Industry has posted a conforming set of requirements for TOPs, making this request premature or redundant.

| Non-Binding Results | |
|-------------------------------|---|
| Non-Binding Poll Name: | Project 2009-06 Facility Ratings - Non-binding Poll for VRFs and VSLs_in |
| Poll Period: | 4/21/2011 - 5/2/2011 |
| Ballot Type: | Initial |
| Total # Opinions: | 160 |
| Total Ballot Pool: | 344 |
| Summary Results: | 75.58 % of those who registered to participate provided an opinion or abstention; 73% of those who provided an opinion indicated support for the VRFs and VSLs. |

| Individual Ballot Pool Results | | | | |
|--------------------------------|--|--|--|--|
|--------------------------------|--|--|--|--|

| Segment | Organization | Member | Ballot | Comments |
|---------|--------------|--------|--------|----------|
|---------|--------------|--------|--------|----------|

| | | | | |
|---|---------------------------------------|-----------------------|-------------|----------------------|
| 1 | AltaLink Management Ltd. | Rick Spyker | | |
| 1 | Ameren Services | Kirit S. Shah | Abstain | |
| 1 | American Electric Power | Paul B. Johnson | Negative | View |
| 1 | American Transmission Company, LLC | Andrew Z Puztai | Abstain | |
| 1 | Arizona Public Service Co. | Robert D Smith | Abstain | |
| 1 | Associated Electric Cooperative, Inc. | John Bussman | Abstain | |
| 1 | Austin Energy | James Armke | Abstain | |
| 1 | Avista Corp. | Scott Kinney | Abstain | |
| 1 | Baltimore Gas & Electric Company | Gregory S Miller | Abstain | View |
| 1 | BC Hydro and Power Authority | Patricia Robertson | Abstain | |
| 1 | Beaches Energy Services | Joseph S. Stonecipher | Affirmative | |
| 1 | Black Hills Corp | Eric Egge | Affirmative | |
| 1 | Bonneville Power Administration | Donald S. Watkins | Affirmative | |
| 1 | CenterPoint Energy Houston Electric | Dale G Bodden | Negative | |

| | | | | |
|---|--|------------------------------|-------------|----------------------|
| 1 | Central Maine Power Company | Kevin L Howes | Abstain | |
| 1 | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | Chang G Choi | Abstain | |
| 1 | Clark Public Utilities | Jack Stamper | Affirmative | |
| 1 | Colorado Springs Utilities | Paul Morland | Affirmative | |
| 1 | Consolidated Edison Co. of New York | Christopher L de Graffenried | Negative | View |
| 1 | Dairyland Power Coop. | Robert W. Roddy | Affirmative | |
| 1 | Deseret Power | James Tucker | Affirmative | |
| 1 | Dominion Virginia Power | Michael S Crowley | Abstain | |
| 1 | Duke Energy Carolina | Douglas E. Hils | Affirmative | |
| 1 | Entergy Services, Inc. | Edward J Davis | Affirmative | |
| 1 | FirstEnergy Energy Delivery | Robert Martinko | Affirmative | |
| 1 | Gainesville Regional Utilities | Luther E. Fair | Abstain | |
| 1 | GDS Associates, Inc. | Claudiu Cadar | Negative | View |
| 1 | Georgia Transmission Corporation | Harold Taylor, II | | |
| 1 | Great River Energy | Gordon Pietsch | Affirmative | |
| 1 | Hoosier Energy Rural Electric Cooperative, Inc. | Robert Solomon | Negative | |
| 1 | Hydro One Networks, Inc. | Ajay Garg | Abstain | |
| 1 | Hydro-Quebec TransEnergie | Bernard Pelletier | | |
| 1 | Idaho Power Company | Ronald D. Schellberg | Affirmative | |
| 1 | Imperial Irrigation District | Tino Zaragoza | Affirmative | |
| 1 | International Transmission Company Holdings Corp | Michael Moltane | Affirmative | |
| 1 | JEA | Ted E Hobson | Affirmative | |
| 1 | Lakeland Electric | Larry E Watt | Affirmative | |

| | | | | |
|---|--|----------------------|-------------|----------------------|
| 1 | Lee County Electric Cooperative | John W Delucca | Abstain | |
| 1 | Lincoln Electric System | Doug Bantam | | |
| 1 | Los Angeles Department of Water & Power | Ly M Le | Affirmative | |
| 1 | Lower Colorado River Authority | Martyn Turner | Affirmative | |
| 1 | Manitoba Hydro | Joe D Petaski | Negative | View |
| 1 | MEAG Power | Danny Dees | Abstain | |
| 1 | Mid-Continent Area Power Pool | Larry E. Brusseau | Abstain | |
| 1 | MidAmerican Energy Co. | Terry Harbour | Negative | |
| 1 | Minnkota Power Coop. Inc. | Richard Burt | Affirmative | |
| 1 | Muscatine Power & Water | Tim Reed | | |
| 1 | National Grid | Saurabh Saksena | | |
| 1 | Nebraska Public Power District | Richard L. Koch | | |
| 1 | New Brunswick Power Transmission Corporation | Randy MacDonald | Negative | |
| 1 | New York Power Authority | Arnold J. Schuff | Negative | |
| 1 | New York State Electric & Gas Corp. | Raymond P Kinney | Affirmative | |
| 1 | Northeast Utilities | David H. Boguslawski | Affirmative | |
| 1 | Northern Indiana Public Service Co. | Kevin M Largura | Affirmative | |
| 1 | NorthWestern Energy | John Canavan | Affirmative | |
| 1 | Ohio Valley Electric Corp. | Robert Matthey | Negative | |
| 1 | Omaha Public Power District | Douglas G Peterchuck | Affirmative | |
| 1 | Oncor Electric Delivery | Michael T. Quinn | Affirmative | |
| 1 | Orlando Utilities Commission | Brad Chase | Abstain | |
| 1 | Pacific Gas and Electric Company | Bangalore | | |

| | | | | |
|---|--|--------------------|-------------|----------------------|
| | | Vijayraghavan | | |
| 1 | PacifiCorp | Colt Norrish | Negative | |
| 1 | PECO Energy | Ronald Schloendorn | Affirmative | |
| 1 | Platte River Power Authority | John C. Collins | Negative | View |
| 1 | Potomac Electric Power Co. | David Thorne | Negative | View |
| 1 | PPL Electric Utilities Corp. | Brenda L Truhe | Abstain | |
| 1 | Progress Energy Carolinas | Sammy Roberts | Affirmative | |
| 1 | Public Service Electric and Gas Co. | Kenneth D. Brown | Abstain | |
| 1 | Public Utility District No. 1 of Chelan County | Chad Bowman | Abstain | |
| 1 | Public Utility District No. 1 of Okanogan County | Dale Dunckel | Abstain | |
| 1 | Rochester Gas and Electric Corp. | John C. Allen | Affirmative | |
| 1 | Sacramento Municipal Utility District | Tim Kelley | Abstain | |
| 1 | Salt River Project | Robert Kondziolka | Abstain | |
| 1 | Santee Cooper | Terry L. Blackwell | Affirmative | |
| 1 | Seattle City Light | Pawel Krupa | | |
| 1 | Sierra Pacific Power Co. | Rich Salgo | | |
| 1 | Snohomish County PUD No. 1 | Long T Duong | Abstain | |
| 1 | South Texas Electric Cooperative | Richard McLeon | Abstain | |
| 1 | Southern Company Services, Inc. | Robert A Schaffeld | Affirmative | View |
| 1 | Sunflower Electric Power Corporation | Noman Lee Williams | | |
| 1 | Tampa Electric Co. | Beth Young | Affirmative | |
| 1 | Tennessee Valley Authority | Larry Akens | Abstain | |
| 1 | Tri-State G & T Association, Inc. | Tracy Sliman | Affirmative | View |

| | | | | |
|---|--|-------------------------------|-------------|----------------------|
| 1 | Tucson Electric Power Co. | John Tolo | Negative | |
| 1 | United Illuminating Co. | Jonathan Appelbaum | Affirmative | |
| 1 | Western Area Power Administration | Brandy A Dunn | Affirmative | |
| 1 | Xcel Energy, Inc. | Gregory L Pieper | | |
| 2 | Alberta Electric System Operator | Mark B Thompson | Abstain | |
| 2 | BC Hydro | Venkataramakrishnan Vinnakota | Abstain | |
| 2 | California ISO | Gregory Van Pelt | | |
| 2 | Electric Reliability Council of Texas, Inc. | Chuck B Manning | | |
| 2 | Independent Electricity System Operator | Kim Warren | | |
| 2 | ISO New England, Inc. | Kathleen Goodman | | |
| 2 | Midwest ISO, Inc. | Marie Knox | | |
| 2 | New Brunswick System Operator | Alden Briggs | Abstain | |
| 2 | New York Independent System Operator | Gregory Campoli | Abstain | |
| 2 | Southwest Power Pool | Charles H Yeung | Abstain | View |
| 3 | Alabama Power Company | Richard J. Mandes | Affirmative | View |
| 3 | Ameren Services | Mark Peters | Abstain | |
| 3 | APS | Steven Norris | Abstain | |
| 3 | Atlantic City Electric Company | NICOLE BUCKMAN | Negative | |
| 3 | BC Hydro and Power Authority | Pat G. Harrington | Abstain | |
| 3 | Blachly-Lane Electric Co-op | Bud Tracy | | |
| 3 | Bonneville Power Administration | Rebecca Berdahl | Affirmative | |
| 3 | Central Electric Cooperative, Inc. (Redmond, Oregon) | Dave Markham | | |

| | | | | |
|---|---------------------------------------|--------------------|-------------|--|
| 3 | Central Lincoln PUD | Steve Alexanderson | Negative | |
| 3 | City of Austin dba Austin Energy | Andrew Gallo | Abstain | |
| 3 | City of Farmington | Linda R. Jacobson | Affirmative | |
| 3 | City of Green Cove Springs | Gregg R Griffin | | |
| 3 | City of Redding | Bill Hughes | Abstain | |
| 3 | Clearwater Power Co. | Dave Hagen | | |
| 3 | Cleco Corporation | Michelle A Corley | | |
| 3 | Colorado Springs Utilities | Lisa Cleary | Affirmative | |
| 3 | ComEd | Bruce Krawczyk | Affirmative | |
| 3 | Consolidated Edison Co. of New York | Peter T Yost | Negative | |
| 3 | Constellation Energy | Carolyn Ingersoll | Negative | |
| 3 | Consumers Energy | David A. Lapinski | Abstain | |
| 3 | Consumers Power Inc. | Roman Gillen | | |
| 3 | Coos-Curry Electric Cooperative, Inc | Roger Meader | | |
| 3 | Cowlitz County PUD | Russell A Noble | Affirmative | |
| 3 | Delmarva Power & Light Co. | Michael R. Mayer | Negative | |
| 3 | Detroit Edison Company | Kent Kujala | Affirmative | |
| 3 | Dominion Resources Services | Michael F Gildea | Abstain | |
| 3 | Douglas Electric Cooperative | Dave Sabala | | |
| 3 | Duke Energy Carolina | Henry Ernst-Jr | Affirmative | |
| 3 | East Kentucky Power Coop. | Sally Witt | Affirmative | |
| 3 | Entergy | Joel T Plessinger | | |
| 3 | Fall River Rural Electric Cooperative | Bryan Case | | |
| 3 | FirstEnergy Solutions | Kevin Querry | Affirmative | |

| | | | | |
|---|---|----------------------------|-------------|----------------------|
| 3 | Florida Power Corporation | Lee Schuster | Affirmative | |
| 3 | Gainesville Regional Utilities | Kenneth Simmons | Affirmative | |
| 3 | Georgia Power Company | Anthony L Wilson | Affirmative | View |
| 3 | Georgia System Operations Corporation | Scott S. Barfield-McGinnis | Abstain | |
| 3 | Great River Energy | Sam Kokkinen | Affirmative | |
| 3 | Hydro One Networks, Inc. | David L Kiguel | Abstain | |
| 3 | Imperial Irrigation District | Jesus S. Alcaraz | Affirmative | |
| 3 | Kansas City Power & Light Co. | Charles Locke | | |
| 3 | Kissimmee Utility Authority | Gregory David Woessner | Affirmative | |
| 3 | Lakeland Electric | Mace Hunter | Affirmative | |
| 3 | Lane Electric Cooperative, Inc. | Rick Crinklaw | | |
| 3 | Lincoln Electric Cooperative, Inc. | Michael Henry | | |
| 3 | Lincoln Electric System | Bruce Merrill | Affirmative | |
| 3 | Los Angeles Department of Water & Power | Daniel D Kurowski | | |
| 3 | Lost River Electric Cooperative | Richard Reynolds | | |
| 3 | Louisville Gas and Electric Co. | Charles A. Freibert | | |
| 3 | Manitoba Hydro | Greg C. Parent | Negative | View |
| 3 | Mississippi Power | Don Horsley | Affirmative | View |
| 3 | Municipal Electric Authority of Georgia | Steven M. Jackson | Negative | View |
| 3 | Muscatine Power & Water | John S Bos | Affirmative | |
| 3 | Nebraska Public Power District | Tony Eddleman | Abstain | |
| 3 | New York Power Authority | Marilyn Brown | Affirmative | |
| 3 | Niagara Mohawk (National Grid Company) | Michael Schiavone | Abstain | |

| | | | | |
|---|---|-----------------------|-------------|----------------------|
| 3 | Northern Indiana Public Service Co. | William SeDoris | Affirmative | |
| 3 | Northern Lights Inc. | Jon Shelby | | |
| 3 | NRG Energy Power Marketing, Inc. | Rick Keetch | | |
| 3 | Okanogan County Electric Cooperative, Inc. | Ray Ellis | | |
| 3 | Omaha Public Power District | Blaine R. Dinwiddie | Affirmative | |
| 3 | Orange and Rockland Utilities, Inc. | David Burke | Abstain | |
| 3 | Orlando Utilities Commission | Ballard Keith Mutters | Abstain | |
| 3 | Owensboro Municipal Utilities | Thomas T Lyons | Affirmative | |
| 3 | Pacific Gas and Electric Company | John H Hagen | Affirmative | |
| 3 | PacifiCorp | John Apperson | | |
| 3 | Platte River Power Authority | Terry L Baker | Negative | View |
| 3 | Progress Energy Carolinas | Sam Waters | Affirmative | |
| 3 | Public Service Electric and Gas Co. | Jeffrey Mueller | Abstain | |
| 3 | Public Utility District No. 2 of Grant County | Greg Lange | Negative | |
| 3 | Raft River Rural Electric Cooperative | Heber Carpenter | | |
| 3 | Sacramento Municipal Utility District | James Leigh-Kendall | Abstain | |
| 3 | Salmon River Electric Cooperative | Ken Dizes | | |
| 3 | Salt River Project | John T. Underhill | | |
| 3 | San Diego Gas & Electric | Scott Peterson | | |
| 3 | Santee Cooper | Zack Dusenbury | Affirmative | |
| 3 | Seattle City Light | Dana Wheelock | | |
| 3 | Snohomish County PUD No. 1 | Mark Oens | Abstain | |
| 3 | South Carolina Electric & Gas Co. | Hubert C Young | Affirmative | |

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|---|---|--------------------|-------------|----------------------|
| 3 | Southern California Edison Co. | David Schiada | | |
| 3 | Tacoma Public Utilities | Travis Metcalfe | Abstain | |
| 3 | Tampa Electric Co. | Ronald L Donahey | Affirmative | |
| 3 | Tennessee Valley Authority | Ian S Grant | Abstain | |
| 3 | Umatilla Electric Cooperative | Steve Eldrige | | |
| 3 | West Oregon Electric Cooperative, Inc. | Marc Farmer | | |
| 3 | Wisconsin Electric Power Marketing | James R. Keller | Negative | |
| 3 | Wisconsin Public Service Corp. | Gregory J Le Grave | | |
| 3 | Xcel Energy, Inc. | Michael Ibold | Abstain | |
| 4 | Alliant Energy Corp. Services, Inc. | Kenneth Goldsmith | Affirmative | |
| 4 | American Municipal Power | Kevin Koloini | Negative | |
| 4 | Blue Ridge Power Agency | Duane S Dahlquist | Affirmative | |
| 4 | Central Lincoln PUD | Shamus J Gamache | Negative | View |
| 4 | City of Austin dba Austin Energy | Reza Ebrahimian | Abstain | |
| 4 | City of New Smyrna Beach Utilities Commission | Timothy Beyrle | | |
| 4 | City of Redding | Nicholas Zettel | Abstain | |
| 4 | City Utilities of Springfield, Missouri | John Allen | Affirmative | |
| 4 | Consumers Energy | David Frank Ronk | | |
| 4 | Cowlitz County PUD | Rick Syring | Affirmative | |
| 4 | Florida Municipal Power Agency | Frank Gaffney | Affirmative | |
| 4 | Georgia System Operations Corporation | Guy Andrews | Abstain | |
| 4 | Illinois Municipal Electric Agency | Bob C. Thomas | Abstain | |
| 4 | Imperial Irrigation District | Diana U Torres | Affirmative | |

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|---|---|---------------------|-----------------------------|----------------------|
| 4 | Integrus Energy Group, Inc. | Christopher Plante | Abstain | |
| 4 | LaGen | Richard Comeaux | Abstain | |
| 4 | Madison Gas and Electric Co. | Joseph G. DePoorter | Abstain | |
| 4 | Modesto Irrigation District | Spencer Tacke | | |
| 4 | Ohio Edison Company | Douglas Hohlbaugh | Affirmative | |
| 4 | Oklahoma Municipal Power Authority | Terri Pyle | Affirmative | View |
| 4 | Old Dominion Electric Coop. | Mark Ringhausen | | |
| 4 | Pacific Northwest Generating Cooperative | Aleka K Scott | | |
| 4 | Public Utility District No. 1 of Snohomish County | John D. Martinsen | Abstain | |
| 4 | Sacramento Municipal Utility District | Mike Ramirez | Abstain | |
| 4 | Seattle City Light | Hao Li | | |
| 4 | Seminole Electric Cooperative, Inc. | Steven R Wallace | Affirmative | |
| 4 | Tacoma Public Utilities | Keith Morissette | Abstain | |
| 4 | Wisconsin Energy Corp. | Anthony Jankowski | Abstain | |
| 5 | Amerenue | Sam Dwyer | Abstain | |
| 5 | Arizona Public Service Co. | Edward Cambridge | | |
| 5 | Avista Corp. | Edward F. Groce | Abstain | |
| 5 | BC Hydro and Power Authority | Clement Ma | Abstain | |
| 5 | Bonneville Power Administration | Francis J. Halpin | Affirmative | |
| 5 | BrightSource Energy, Inc. | Chifong Thomas | Affirmative | |
| 5 | Chelan County Public Utility District #1 | John Yale | Abstain | |
| 5 | City and County of San Francisco | Daniel Mason | | |
| 5 | City of Austin dba Austin Energy | Jeanie Doty | Abstain | |

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|---|--|--------------------|-------------|----------------------|
| 5 | City of Grand Island | Jeff Mead | Abstain | |
| 5 | City of Redding | Paul A Cummings | Abstain | |
| 5 | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | Max Emrick | Abstain | |
| 5 | City of Tallahassee | Alan Gale | Abstain | |
| 5 | Cleco Power | Stephanie Huffman | | |
| 5 | Colorado Springs Utilities | Jennifer Eckels | Affirmative | |
| 5 | Consolidated Edison Co. of New York | Wilket (Jack) Ng | Negative | |
| 5 | Constellation Power Source Generation, Inc. | Amir Y Hammad | Abstain | |
| 5 | Consumers Energy | James B Lewis | Negative | View |
| 5 | Cowlitz County PUD | Bob Essex | Affirmative | |
| 5 | Detroit Edison Company | Christy Wicke | Affirmative | |
| 5 | Dominion Resources, Inc. | Mike Garton | Abstain | |
| 5 | Duke Energy | Dale Q Goodwine | Affirmative | |
| 5 | Dynegy Inc. | Dan Roethemeyer | Affirmative | |
| 5 | E.ON Climate & Renewables North America, LLC | Dana Showalter | Abstain | |
| 5 | Electric Power Supply Association | John R Cashin | | |
| 5 | Entergy Corporation | Stanley M Jaskot | | |
| 5 | Exelon Nuclear | Michael Korchynsky | | |
| 5 | ExxonMobil Research and Engineering | Martin Kaufman | Abstain | |
| 5 | FirstEnergy Solutions | Kenneth Dresner | Affirmative | |
| 5 | Florida Municipal Power Agency | David Schumann | Affirmative | |
| 5 | Great River Energy | Preston L Walsh | Affirmative | |

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|---|--|-----------------------|-------------|----------------------|
| 5 | Green Country Energy | Greg Froehling | Affirmative | |
| 5 | Indeck Energy Services, Inc. | Rex A Roehl | | |
| 5 | JEA | John J Babik | Affirmative | |
| 5 | Liberty Electric Power LLC | Daniel Duff | | |
| 5 | Lincoln Electric System | Dennis Florom | Affirmative | |
| 5 | Los Angeles Department of Water & Power | Kenneth Silver | Affirmative | |
| 5 | Lower Colorado River Authority | Tom Foreman | Affirmative | |
| 5 | Luminant Generation Company LLC | Mike Laney | Negative | View |
| 5 | Manitoba Hydro | S N Fernando | Negative | View |
| 5 | Massachusetts Municipal Wholesale Electric Company | David Gordon | | |
| 5 | MEAG Power | Steven Grego | Negative | View |
| 5 | MidAmerican Energy Co. | Christopher Schneider | | |
| 5 | Muscatine Power & Water | Mike Avesing | Affirmative | |
| 5 | Nebraska Public Power District | Don Schmit | Abstain | |
| 5 | New Harquahala Generating Co. LLC | Nathaniel Larson | | |
| 5 | New York Power Authority | Gerald Mannarino | Affirmative | |
| 5 | NRG Energy, Inc. | Patricia A. Lynch | | |
| 5 | Occidental Chemical | Michelle DAntuono | Negative | View |
| 5 | Oglethorpe Power Corporation | Scott McGough | | |
| 5 | Omaha Public Power District | Mahmood Z. Safi | Affirmative | |
| 5 | Ontario Power Generation Inc. | Colin Anderson | Negative | View |
| 5 | Orlando Utilities Commission | Richard Kinas | | |
| 5 | Pacific Gas and Electric Company | Richard J. Padilla | | |

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|---|--|---------------------|-------------|----------------------|
| 5 | Platte River Power Authority | Pete Ungerman | Negative | |
| 5 | Portland General Electric Co. | Gary L Tingley | | |
| 5 | PowerSouth Energy Cooperative | Tim Hattaway | Abstain | |
| 5 | PPL Generation LLC | Annette M Bannon | Abstain | |
| 5 | Progress Energy Carolinas | Wayne Lewis | Affirmative | |
| 5 | PSEG Fossil LLC | Mikhail Falkovich | Abstain | |
| 5 | Public Service Enterprise Group Incorporated | Dominick Grasso | | |
| 5 | Sacramento Municipal Utility District | Bethany Hunter | Abstain | |
| 5 | Salt River Project | Glen Reeves | Negative | |
| 5 | Santee Cooper | Lewis P Pierce | Affirmative | |
| 5 | Seattle City Light | Michael J. Haynes | Abstain | |
| 5 | Seminole Electric Cooperative, Inc. | Brenda K. Atkins | | |
| 5 | Snohomish County PUD No. 1 | Sam Nietfeld | Abstain | |
| 5 | Southern California Edison Co. | Denise Yaffe | Affirmative | |
| 5 | Southern Company Generation | William D Shultz | Affirmative | |
| 5 | Tenaska, Inc. | Scott M. Helyer | Abstain | |
| 5 | Tennessee Valley Authority | David Thompson | Abstain | |
| 5 | Trans Canada Power | John Fish | | |
| 5 | U.S. Army Corps of Engineers | Melissa Kurtz | Affirmative | |
| 5 | U.S. Bureau of Reclamation | Martin Bauer P.E. | Abstain | |
| 5 | Vandolah Power Company L.L.C. | Douglas A. Jensen | Affirmative | |
| 5 | Wisconsin Electric Power Co. | Linda Horn | Negative | |
| 5 | Wisconsin Public Service Corp. | Leonard Rentmeester | | |
| 6 | AEP Marketing | Edward P. Cox | Negative | View |

| | | | | |
|---|--|-----------------------|-------------|----------------------|
| 6 | Arizona Public Service Co. | Justin Thompson | | |
| 6 | Black Hills Power | andrew heinle | | |
| 6 | Bonneville Power Administration | Brenda S. Anderson | Affirmative | |
| 6 | City of Austin dba Austin Energy | Lisa L Martin | Abstain | |
| 6 | City of Redding | Marvin Briggs | Abstain | |
| 6 | Cleco Power LLC | Robert Hirschak | | |
| 6 | Colorado Springs Utilities | Lisa C Rosintoski | Affirmative | |
| 6 | Consolidated Edison Co. of New York | Nickesha P Carrol | Negative | |
| 6 | Constellation Energy Commodities Group | Brenda Powell | Abstain | |
| 6 | Dominion Resources, Inc. | Louis S. Slade | Abstain | |
| 6 | Duke Energy Carolina | Walter Yeager | Affirmative | |
| 6 | Entergy Services, Inc. | Terri F Benoit | | |
| 6 | Exelon Power Team | Pulin Shah | Affirmative | |
| 6 | FirstEnergy Solutions | Mark S Travaglianti | Abstain | View |
| 6 | Florida Municipal Power Agency | Richard L. Montgomery | Affirmative | |
| 6 | Florida Municipal Power Pool | Thomas E Washburn | Affirmative | |
| 6 | Florida Power & Light Co. | Silvia P. Mitchell | | |
| 6 | Great River Energy | Donna Stephenson | | |
| 6 | Kansas City Power & Light Co. | Jessica L Klinghoffer | | |
| 6 | Lincoln Electric System | Eric Ruskamp | Affirmative | |
| 6 | Manitoba Hydro | Daniel Prowse | Negative | View |
| 6 | Muscatine Power & Water | Brandy D Olson | | |
| 6 | New York Power Authority | William Palazzo | Affirmative | |
| 6 | Northern Indiana Public Service | Joseph O'Brien | Affirmative | |

| | Co. | | | |
|---|--|--------------------------|-------------|----------------------|
| 6 | NRG Energy, Inc. | Alan R. Johnson | Abstain | |
| 6 | Omaha Public Power District | David Ried | Affirmative | |
| 6 | Orlando Utilities Commission | Claston Augustus Sunanon | | |
| 6 | Platte River Power Authority | Carol Ballantine | Negative | View |
| 6 | PPL EnergyPlus LLC | Mark A Heimbach | Abstain | |
| 6 | Progress Energy | John T Sturgeon | Affirmative | |
| 6 | PSEG Energy Resources & Trade LLC | Peter Dolan | Abstain | |
| 6 | Public Utility District No. 1 of Chelan County | Hugh A. Owen | Abstain | |
| 6 | Sacramento Municipal Utility District | Claire Warshaw | Abstain | |
| 6 | Salt River Project | Steven J Hulet | | |
| 6 | Santee Cooper | Suzanne Ritter | Affirmative | |
| 6 | Seattle City Light | Dennis Sismaet | Negative | View |
| 6 | South California Edison Company | Lujuanna Medina | Affirmative | |
| 6 | Tacoma Public Utilities | Michael C Hill | Abstain | |
| 6 | Tampa Electric Co. | Benjamin F Smith II | Affirmative | |
| 6 | Tennessee Valley Authority | Marjorie S. Parsons | Abstain | |
| 8 | | Roger C Zaklukiewicz | Affirmative | |
| 8 | | James A Maenner | Affirmative | |
| 8 | | Edward C Stein | Affirmative | |
| 8 | JDRJC Associates | Jim D. Cyrulewski | Affirmative | |
| 8 | Utility Services, Inc. | Brian Evans-Mongeon | Abstain | |
| 8 | Volkman Consulting, Inc. | Terry Volkman | | |

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|----|--|---------------------|-------------|----------------------|
| 9 | National Association of Regulatory Utility Commissioners | Diane J. Barney | Affirmative | |
| 9 | Snohomish County PUD No. 1 | William Moojen | | |
| 10 | Midwest Reliability Organization | James D Burley | Abstain | |
| 10 | New York State Reliability Council | Alan Adamson | Affirmative | |
| 10 | Northeast Power Coordinating Council, Inc. | Guy V. Zito | Abstain | |
| 10 | ReliabilityFirst Corporation | Anthony E Jablonski | Negative | View |
| 10 | SERC Reliability Corporation | Carter B. Edge | Abstain | |
| 10 | Texas Reliability Entity | Larry D. Grimm | Affirmative | |
| 10 | Western Electricity Coordinating Council | Steven L. Rueckert | Affirmative | |
| | | | | |

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- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

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| Ballot Results | |
|-------------------------------|---|
| Ballot Name: | Project 2009-06: Facility Ratings_in |
| Ballot Period: | 4/21/2011 - 5/2/2011 |
| Ballot Type: | Initial |
| Total # Votes: | 295 |
| Total Ballot Pool: | 343 |
| Quorum: | 86.01 % The Quorum has been reached |
| Weighted Segment Vote: | 48.74 % |
| Ballot Results: | The standard will proceed to recirculation ballot. |

| Summary of Ballot Results | | | | | | | | | |
|---------------------------|-------------|----------------|-------------|--------------|------------|--------------|-----------------|-----------|--|
| Segment | Ballot Pool | Segment Weight | Affirmative | | Negative | | Abstain # Votes | No Vote | |
| | | | # Votes | Fraction | # Votes | Fraction | | | |
| 1 - Segment 1. | 85 | 1 | 38 | 0.481 | 41 | 0.519 | 4 | 2 | |
| 2 - Segment 2. | 10 | 0.5 | 1 | 0.1 | 4 | 0.4 | 3 | 2 | |
| 3 - Segment 3. | 87 | 1 | 20 | 0.308 | 45 | 0.692 | 6 | 16 | |
| 4 - Segment 4. | 28 | 1 | 11 | 0.5 | 11 | 0.5 | 2 | 4 | |
| 5 - Segment 5. | 77 | 1 | 20 | 0.357 | 36 | 0.643 | 4 | 17 | |
| 6 - Segment 6. | 41 | 1 | 16 | 0.471 | 18 | 0.529 | 2 | 5 | |
| 7 - Segment 7. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 8 - Segment 8. | 6 | 0.4 | 4 | 0.4 | 0 | 0 | 1 | 1 | |
| 9 - Segment 9. | 2 | 0.1 | 1 | 0.1 | 0 | 0 | 0 | 1 | |
| 10 - Segment 10. | 7 | 0.6 | 5 | 0.5 | 1 | 0.1 | 1 | 0 | |
| Totals | 343 | 6.6 | 116 | 3.217 | 156 | 3.383 | 23 | 48 | |

| Individual Ballot Pool Results | | | | |
|--------------------------------|---------------------------------------|------------------|-------------|----------------------|
| Segment | Organization | Member | Ballot | Comments |
| 1 | Ameren Services | Kirit S. Shah | Negative | View |
| 1 | American Electric Power | Paul B. Johnson | Negative | View |
| 1 | American Transmission Company, LLC | Andrew Z Puztai | Affirmative | View |
| 1 | Arizona Public Service Co. | Robert D Smith | Affirmative | |
| 1 | Associated Electric Cooperative, Inc. | John Bussman | Negative | View |
| 1 | Austin Energy | James Armke | Negative | View |
| 1 | Avista Corp. | Scott Kinney | Negative | |
| 1 | Baltimore Gas & Electric Company | Gregory S Miller | Affirmative | View |

| | | | | |
|---|--|------------------------------|-------------|----------------------|
| 1 | BC Hydro and Power Authority | Patricia Robertson | Negative | View |
| 1 | Beaches Energy Services | Joseph S. Stonecipher | Affirmative | |
| 1 | Black Hills Corp | Eric Egge | Affirmative | |
| 1 | Bonneville Power Administration | Donald S. Watkins | Negative | View |
| 1 | CenterPoint Energy Houston Electric | Dale G Bodden | Negative | |
| 1 | Central Maine Power Company | Kevin L Howes | Negative | View |
| 1 | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | Chang G Choi | Negative | View |
| 1 | Clark Public Utilities | Jack Stamper | Affirmative | |
| 1 | Colorado Springs Utilities | Paul Morland | Negative | View |
| 1 | Consolidated Edison Co. of New York | Christopher L de Graffenried | Negative | View |
| 1 | Dairyland Power Coop. | Robert W. Roddy | Affirmative | |
| 1 | Deseret Power | James Tucker | Abstain | |
| 1 | Dominion Virginia Power | Michael S Crowley | Affirmative | |
| 1 | Duke Energy Carolina | Douglas E. Hils | Affirmative | |
| 1 | Entergy Services, Inc. | Edward J Davis | Negative | View |
| 1 | FirstEnergy Energy Delivery | Robert Martinko | Affirmative | |
| 1 | Gainesville Regional Utilities | Luther E. Fair | Affirmative | |
| 1 | GDS Associates, Inc. | Claudiu Cadar | Negative | View |
| 1 | Georgia Transmission Corporation | Harold Taylor, II | Affirmative | View |
| 1 | Great River Energy | Gordon Pietsch | Affirmative | |
| 1 | Hoosier Energy Rural Electric Cooperative, Inc. | Robert Solomon | Negative | View |
| 1 | Hydro One Networks, Inc. | Ajay Garg | Negative | View |
| 1 | Hydro-Quebec TransEnergie | Bernard Pelletier | Negative | View |
| 1 | Idaho Power Company | Ronald D. Schellberg | Negative | View |
| 1 | Imperial Irrigation District | Tino Zaragoza | Negative | View |
| 1 | International Transmission Company Holdings Corp | Michael Moltane | Affirmative | |
| 1 | JEA | Ted E Hobson | Affirmative | |
| 1 | Lakeland Electric | Larry E Watt | Affirmative | |
| 1 | Lee County Electric Cooperative | John W Delucca | Affirmative | |
| 1 | Lincoln Electric System | Doug Bantam | | |
| 1 | Los Angeles Department of Water & Power | Ly M Le | Affirmative | |
| 1 | Lower Colorado River Authority | Martyn Turner | Affirmative | |
| 1 | Manitoba Hydro | Joe D Petaski | Negative | View |
| 1 | MEAG Power | Danny Dees | Negative | View |
| 1 | Mid-Continent Area Power Pool | Larry E. Brusseau | Abstain | |
| 1 | MidAmerican Energy Co. | Terry Harbour | Negative | View |
| 1 | Minnkota Power Coop. Inc. | Richard Burt | Affirmative | |
| 1 | Muscatine Power & Water | Tim Reed | Affirmative | View |
| 1 | National Grid | Saurabh Saksena | Abstain | View |
| 1 | Nebraska Public Power District | Richard L. Koch | | |
| 1 | New Brunswick Power Transmission Corporation | Randy MacDonald | Negative | View |
| 1 | New York Power Authority | Arnold J. Schuff | Negative | View |
| 1 | New York State Electric & Gas Corp. | Raymond P Kinney | Negative | View |
| 1 | Northeast Utilities | David H. Boguslawski | Affirmative | |
| 1 | Northern Indiana Public Service Co. | Kevin M Largura | Affirmative | |
| 1 | NorthWestern Energy | John Canavan | Affirmative | |
| 1 | Ohio Valley Electric Corp. | Robert Matthey | Affirmative | |
| 1 | Omaha Public Power District | Douglas G Peterchuck | Affirmative | |
| 1 | Oncor Electric Delivery | Michael T. Quinn | Affirmative | |
| 1 | Orlando Utilities Commission | Brad Chase | Affirmative | |
| 1 | Pacific Gas and Electric Company | Bangalore Vijayraghavan | Affirmative | |
| 1 | PacifiCorp | Colt Norrish | Negative | |
| 1 | PECO Energy | Ronald Schloendorn | Affirmative | |
| 1 | Platte River Power Authority | John C. Collins | Negative | View |
| 1 | Potomac Electric Power Co. | David Thorne | Negative | View |
| 1 | PPL Electric Utilities Corp. | Brenda L Truhe | Affirmative | |
| 1 | Progress Energy Carolinas | Sammy Roberts | Affirmative | |
| 1 | Public Service Electric and Gas Co. | Kenneth D. Brown | Affirmative | View |
| 1 | Public Utility District No. 1 of Chelan County | Chad Bowman | Negative | View |
| 1 | Public Utility District No. 1 of Okanogan County | Dale Dunkel | Affirmative | |
| 1 | Rochester Gas and Electric Corp. | John C. Allen | Negative | View |
| 1 | Sacramento Municipal Utility District | Tim Kelley | Negative | View |
| 1 | Salt River Project | Robert Kondziolka | Negative | View |

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|---|--|-------------------------------|-------------|----------------------|
| 1 | Santee Cooper | Terry L. Blackwell | Affirmative | |
| 1 | Seattle City Light | Pawel Krupa | Negative | View |
| 1 | Sierra Pacific Power Co. | Rich Salgo | Negative | View |
| 1 | Snohomish County PUD No. 1 | Long T Duong | Negative | View |
| 1 | South Texas Electric Cooperative | Richard McLeon | Abstain | |
| 1 | Southern Company Services, Inc. | Robert A Schaffeld | Negative | View |
| 1 | Sunflower Electric Power Corporation | Noman Lee Williams | Negative | View |
| 1 | Tampa Electric Co. | Beth Young | Affirmative | |
| 1 | Tennessee Valley Authority | Larry Akens | Negative | View |
| 1 | Tri-State G & T Association, Inc. | Tracy Sliman | Affirmative | View |
| 1 | Tucson Electric Power Co. | John Tolo | Negative | View |
| 1 | United Illuminating Co. | Jonathan Appelbaum | Negative | View |
| 1 | Western Area Power Administration | Brandy A Dunn | Affirmative | |
| 1 | Xcel Energy, Inc. | Gregory L Pieper | Negative | View |
| 2 | Alberta Electric System Operator | Mark B Thompson | Affirmative | |
| 2 | BC Hydro | Venkataramakrishnan Vinnakota | Negative | View |
| 2 | California ISO | Gregory Van Pelt | | |
| 2 | Electric Reliability Council of Texas, Inc. | Chuck B Manning | | |
| 2 | Independent Electricity System Operator | Kim Warren | Negative | View |
| 2 | ISO New England, Inc. | Kathleen Goodman | Negative | View |
| 2 | Midwest ISO, Inc. | Marie Knox | Abstain | View |
| 2 | New Brunswick System Operator | Alden Briggs | Abstain | |
| 2 | New York Independent System Operator | Gregory Campoli | Abstain | |
| 2 | Southwest Power Pool | Charles H Yeung | Negative | View |
| 3 | Alabama Power Company | Richard J. Mandes | Negative | View |
| 3 | Ameren Services | Mark Peters | Negative | |
| 3 | APS | Steven Norris | Affirmative | |
| 3 | Atlantic City Electric Company | NICOLE BUCKMAN | Negative | |
| 3 | BC Hydro and Power Authority | Pat G. Harrington | Negative | View |
| 3 | Blachly-Lane Electric Co-op | Bud Tracy | | |
| 3 | Bonneville Power Administration | Rebecca Berdahl | Negative | View |
| 3 | Central Electric Cooperative, Inc. (Redmond, Oregon) | Dave Markham | Negative | View |
| 3 | Central Lincoln PUD | Steve Alexanderson | Negative | View |
| 3 | City of Austin dba Austin Energy | Andrew Gallo | Negative | View |
| 3 | City of Farmington | Linda R. Jacobson | Negative | View |
| 3 | City of Green Cove Springs | Gregg R Griffin | | |
| 3 | City of Redding | Bill Hughes | Negative | View |
| 3 | Clearwater Power Co. | Dave Hagen | | |
| 3 | Cleco Corporation | Michelle A Corley | Negative | View |
| 3 | Colorado Springs Utilities | Lisa Cleary | Negative | View |
| 3 | ComEd | Bruce Krawczyk | Affirmative | |
| 3 | Consolidated Edison Co. of New York | Peter T Yost | Negative | View |
| 3 | Constellation Energy | Carolyn Ingersoll | Negative | View |
| 3 | Consumers Energy | David A. Lapinski | Abstain | |
| 3 | Consumers Power Inc. | Roman Gillen | Negative | View |
| 3 | Coos-Curry Electric Cooperative, Inc | Roger Meader | Negative | View |
| 3 | Cowlitz County PUD | Russell A Noble | Negative | View |
| 3 | Delmarva Power & Light Co. | Michael R. Mayer | Negative | |
| 3 | Detroit Edison Company | Kent Kujala | Affirmative | |
| 3 | Dominion Resources Services | Michael F Gildea | Affirmative | |
| 3 | Douglas Electric Cooperative | Dave Sabala | Negative | View |
| 3 | Duke Energy Carolina | Henry Ernst-Jr | Affirmative | |
| 3 | East Kentucky Power Coop. | Sally Witt | Negative | View |
| 3 | Entergy | Joel T Plessinger | Negative | View |
| 3 | Fall River Rural Electric Cooperative | Bryan Case | | |
| 3 | FirstEnergy Solutions | Kevin Querry | Affirmative | |
| 3 | Florida Power Corporation | Lee Schuster | Affirmative | |
| 3 | Gainesville Regional Utilities | Kenneth Simmons | Affirmative | |
| 3 | Georgia Power Company | Anthony L Wilson | Negative | View |
| 3 | Georgia System Operations Corporation | Scott S. Barfield-McGinnis | Abstain | |
| 3 | Great River Energy | Sam Kokkinen | Affirmative | |
| 3 | Hydro One Networks, Inc. | David L Kiguel | Negative | View |
| 3 | Imperial Irrigation District | Jesus S. Alcaraz | Negative | View |
| 3 | Kansas City Power & Light Co. | Charles Locke | | |
| 3 | Kissimmee Utility Authority | Gregory David Woessner | Affirmative | |

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|---|---|-----------------------|-------------|------|
| 3 | Lakeland Electric | Mace Hunter | Affirmative | |
| 3 | Lane Electric Cooperative, Inc. | Rick Crinklaw | | |
| 3 | Lincoln Electric Cooperative, Inc. | Michael Henry | Negative | View |
| 3 | Lincoln Electric System | Bruce Merrill | Affirmative | |
| 3 | Los Angeles Department of Water & Power | Daniel D Kurowski | | |
| 3 | Lost River Electric Cooperative | Richard Reynolds | | |
| 3 | Louisville Gas and Electric Co. | Charles A. Freibert | Abstain | View |
| 3 | Manitoba Hydro | Greg C. Parent | Negative | View |
| 3 | Mississippi Power | Don Horsley | Negative | View |
| 3 | Municipal Electric Authority of Georgia | Steven M. Jackson | Negative | View |
| 3 | Muscatine Power & Water | John S Bos | Affirmative | View |
| 3 | Nebraska Public Power District | Tony Eddleman | Abstain | |
| 3 | New York Power Authority | Marilyn Brown | Negative | |
| 3 | Niagara Mohawk (National Grid Company) | Michael Schiavone | Abstain | |
| 3 | Northern Indiana Public Service Co. | William SeDoris | Affirmative | |
| 3 | Northern Lights Inc. | Jon Shelby | | |
| 3 | NRG Energy Power Marketing, Inc. | Rick Keetch | | |
| 3 | Okanogan County Electric Cooperative, Inc. | Ray Ellis | Negative | View |
| 3 | Omaha Public Power District | Blaine R. Dinwiddie | Affirmative | |
| 3 | Orange and Rockland Utilities, Inc. | David Burke | Abstain | |
| 3 | Orlando Utilities Commission | Ballard Keith Mutters | Negative | View |
| 3 | Owensboro Municipal Utilities | Thomas T Lyons | Affirmative | |
| 3 | Pacific Gas and Electric Company | John H Hagen | Negative | View |
| 3 | PacifiCorp | John Apperson | | |
| 3 | Platte River Power Authority | Terry L Baker | Negative | View |
| 3 | Progress Energy Carolinas | Sam Waters | | |
| 3 | Public Service Electric and Gas Co. | Jeffrey Mueller | Affirmative | View |
| 3 | Public Utility District No. 2 of Grant County | Greg Lange | Negative | View |
| 3 | Raft River Rural Electric Cooperative | Heber Carpenter | Negative | View |
| 3 | Sacramento Municipal Utility District | James Leigh-Kendall | Negative | View |
| 3 | Salmon River Electric Cooperative | Ken Dizes | Negative | View |
| 3 | Salt River Project | John T. Underhill | Negative | View |
| 3 | San Diego Gas & Electric | Scott Peterson | | |
| 3 | Santee Cooper | Zack Dusenbury | Affirmative | |
| 3 | Seattle City Light | Dana Wheelock | Negative | View |
| 3 | Snohomish County PUD No. 1 | Mark Oens | Negative | View |
| 3 | South Carolina Electric & Gas Co. | Hubert C Young | Affirmative | |
| 3 | Southern California Edison Co. | David Schiada | | |
| 3 | Tacoma Public Utilities | Travis Metcalfe | Negative | View |
| 3 | Tampa Electric Co. | Ronald L Donahey | Affirmative | |
| 3 | Tennessee Valley Authority | Ian S Grant | Negative | View |
| 3 | Umatilla Electric Cooperative | Steve Eldrige | Negative | View |
| 3 | West Oregon Electric Cooperative, Inc. | Marc Farmer | | |
| 3 | Wisconsin Electric Power Marketing | James R. Keller | Negative | |
| 3 | Wisconsin Public Service Corp. | Gregory J Le Grave | | |
| 3 | Xcel Energy, Inc. | Michael Ibold | Negative | View |
| 4 | Alliant Energy Corp. Services, Inc. | Kenneth Goldsmith | Affirmative | |
| 4 | American Municipal Power - Ohio | Kevin Koloini | Affirmative | |
| 4 | Blue Ridge Power Agency | Duane S Dahlquist | Affirmative | |
| 4 | Central Lincoln PUD | Shamus J Gamache | Negative | View |
| 4 | City of Austin dba Austin Energy | Reza Ebrahimian | Negative | View |
| 4 | City of New Smyrna Beach Utilities Commission | Timothy Beyrle | | |
| 4 | City of Redding | Nicholas Zettel | Negative | View |
| 4 | City Utilities of Springfield, Missouri | John Allen | Affirmative | |
| 4 | Consumers Energy | David Frank Ronk | | |
| 4 | Cowlitz County PUD | Rick Syring | Negative | View |
| 4 | Florida Municipal Power Agency | Frank Gaffney | Affirmative | |
| 4 | Georgia System Operations Corporation | Guy Andrews | Abstain | |
| 4 | Illinois Municipal Electric Agency | Bob C. Thomas | Affirmative | |
| 4 | Imperial Irrigation District | Diana U Torres | Negative | View |
| 4 | Integrus Energy Group, Inc. | Christopher Plante | Affirmative | |
| 4 | LaGen | Richard Comeaux | Abstain | |
| 4 | Madison Gas and Electric Co. | Joseph G. DePoorter | Affirmative | View |
| 4 | Modesto Irrigation District | Spencer Tacke | Negative | View |
| 4 | Ohio Edison Company | Douglas Hohlbaugh | Affirmative | |
| 4 | Oklahoma Municipal Power Authority | Terri Pyle | Affirmative | View |

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|---|--|-----------------------|-------------|----------------------|
| 4 | Old Dominion Electric Coop. | Mark Ringhausen | | |
| 4 | Pacific Northwest Generating Cooperative | Aleka K Scott | | |
| 4 | Public Utility District No. 1 of Snohomish County | John D. Martinsen | Negative | View |
| 4 | Sacramento Municipal Utility District | Mike Ramirez | Negative | View |
| 4 | Seattle City Light | Hao Li | Negative | View |
| 4 | Seminole Electric Cooperative, Inc. | Steven R Wallace | Affirmative | |
| 4 | Tacoma Public Utilities | Keith Morisette | Negative | View |
| 4 | Wisconsin Energy Corp. | Anthony Jankowski | Negative | View |
| 5 | Amerenue | Sam Dwyer | Negative | |
| 5 | Arizona Public Service Co. | Edward Cambridge | Affirmative | |
| 5 | Avista Corp. | Edward F. Groce | Negative | |
| 5 | BC Hydro and Power Authority | Clement Ma | Negative | View |
| 5 | Bonneville Power Administration | Francis J. Halpin | Negative | View |
| 5 | BrightSource Energy, Inc. | Chifong Thomas | Affirmative | |
| 5 | Chelan County Public Utility District #1 | John Yale | Negative | View |
| 5 | City and County of San Francisco | Daniel Mason | | |
| 5 | City of Austin dba Austin Energy | Jeanie Doty | Negative | |
| 5 | City of Grand Island | Jeff Mead | Negative | View |
| 5 | City of Redding | Paul A Cummings | Negative | View |
| 5 | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | Max Emrick | Negative | View |
| 5 | City of Tallahassee | Alan Gale | Affirmative | |
| 5 | Cleco Power | Stephanie Huffman | Negative | View |
| 5 | Colorado Springs Utilities | Jennifer Eckels | Negative | View |
| 5 | Consolidated Edison Co. of New York | Wilket (Jack) Ng | Negative | View |
| 5 | Constellation Power Source Generation, Inc. | Amir Y Hammad | Negative | View |
| 5 | Consumers Energy | James B Lewis | Negative | View |
| 5 | Cowlitz County PUD | Bob Essex | Negative | View |
| 5 | Detroit Edison Company | Christy Wicke | Affirmative | |
| 5 | Dominion Resources, Inc. | Mike Garton | Affirmative | |
| 5 | Duke Energy | Dale Q Goodwine | Affirmative | |
| 5 | Dynegy Inc. | Dan Roethemeyer | | |
| 5 | E.ON Climate & Renewables North America, LLC | Dana Showalter | Abstain | |
| 5 | Electric Power Supply Association | John R Cashin | | |
| 5 | Entergy Corporation | Stanley M Jaskot | | |
| 5 | Exelon Nuclear | Michael Korchynsky | Affirmative | |
| 5 | ExxonMobil Research and Engineering | Martin Kaufman | Abstain | |
| 5 | FirstEnergy Solutions | Kenneth Dresner | Affirmative | |
| 5 | Florida Municipal Power Agency | David Schumann | Affirmative | |
| 5 | Great River Energy | Preston L Walsh | Affirmative | |
| 5 | Green Country Energy | Greg Froehling | Affirmative | |
| 5 | Indeck Energy Services, Inc. | Rex A Roehl | | |
| 5 | JEA | John J Babik | Negative | View |
| 5 | Liberty Electric Power LLC | Daniel Duff | | |
| 5 | Lincoln Electric System | Dennis Florom | Affirmative | |
| 5 | Los Angeles Department of Water & Power | Kenneth Silver | Affirmative | |
| 5 | Lower Colorado River Authority | Tom Foreman | Negative | View |
| 5 | Luminant Generation Company LLC | Mike Laney | Negative | View |
| 5 | Manitoba Hydro | S N Fernando | Negative | View |
| 5 | Massachusetts Municipal Wholesale Electric Company | David Gordon | | |
| 5 | MEAG Power | Steven Grego | Negative | View |
| 5 | MidAmerican Energy Co. | Christopher Schneider | | |
| 5 | Muscatine Power & Water | Mike Avesing | Affirmative | |
| 5 | Nebraska Public Power District | Don Schmit | Abstain | |
| 5 | New Harquahala Generating Co. LLC | Nathaniel Larson | | |
| 5 | New York Power Authority | Gerald Mannarino | Negative | View |
| 5 | NRG Energy, Inc. | Patricia A. Lynch | | |
| 5 | Occidental Chemical | Michelle D'Antuono | Negative | View |
| 5 | Oglethorpe Power Corporation | Scott McGough | | |
| 5 | Omaha Public Power District | Mahmood Z. Safi | Affirmative | |
| 5 | Ontario Power Generation Inc. | Colin Anderson | Negative | View |
| 5 | Orlando Utilities Commission | Richard Kinas | Negative | View |
| 5 | Pacific Gas and Electric Company | Richard J. Padilla | Negative | View |
| 5 | Platte River Power Authority | Pete Ungerman | Negative | View |
| 5 | Portland General Electric Co. | Gary L Tingley | | |

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|---|--|--------------------------|-------------|------|
| 5 | PowerSouth Energy Cooperative | Tim Hattaway | | |
| 5 | PPL Generation LLC | Annette M Bannon | Abstain | |
| 5 | Progress Energy Carolinas | Wayne Lewis | Affirmative | |
| 5 | PSEG Fossil LLC | Mikhail Falkovich | Affirmative | |
| 5 | Public Service Enterprise Group Incorporated | Dominick Grasso | | |
| 5 | Sacramento Municipal Utility District | Bethany Hunter | Negative | View |
| 5 | Salt River Project | Glen Reeves | Negative | View |
| 5 | Santee Cooper | Lewis P Pierce | Affirmative | |
| 5 | Seattle City Light | Michael J. Haynes | Negative | View |
| 5 | Seminole Electric Cooperative, Inc. | Brenda K. Atkins | | |
| 5 | Snohomish County PUD No. 1 | Sam Nietfeld | Negative | |
| 5 | Southern California Edison Co. | Denise Yaffe | Affirmative | |
| 5 | Southern Company Generation | William D Shultz | Negative | View |
| 5 | Tenaska, Inc. | Scott M. Helyer | Negative | |
| 5 | Tennessee Valley Authority | David Thompson | Negative | View |
| 5 | Trans Canada Power | John Fish | | |
| 5 | U.S. Army Corps of Engineers | Melissa Kurtz | Negative | View |
| 5 | U.S. Bureau of Reclamation | Martin Bauer P.E. | Negative | View |
| 5 | Vandolah Power Company L.L.C. | Douglas A. Jensen | Affirmative | |
| 5 | Wisconsin Electric Power Co. | Linda Horn | Negative | |
| 5 | Wisconsin Public Service Corp. | Leonard Rentmeester | | |
| 6 | AEP Marketing | Edward P. Cox | Negative | View |
| 6 | Arizona Public Service Co. | Justin Thompson | Affirmative | |
| 6 | Black Hills Power | andrew heinle | | |
| 6 | Bonneville Power Administration | Brenda S. Anderson | Negative | |
| 6 | City of Austin dba Austin Energy | Lisa L Martin | Negative | View |
| 6 | City of Redding | Marvin Briggs | Negative | View |
| 6 | Cleco Power LLC | Robert Hirschak | Negative | View |
| 6 | Colorado Springs Utilities | Lisa C Rosintoski | Negative | View |
| 6 | Consolidated Edison Co. of New York | Nickesha P Carrol | Negative | View |
| 6 | Constellation Energy Commodities Group | Brenda Powell | Negative | View |
| 6 | Dominion Resources, Inc. | Louis S. Slade | Affirmative | |
| 6 | Duke Energy Carolina | Walter Yeager | Affirmative | |
| 6 | Entergy Services, Inc. | Terri F Benoit | Negative | View |
| 6 | Exelon Power Team | Pulin Shah | Affirmative | |
| 6 | FirstEnergy Solutions | Mark S Travaglianti | Affirmative | |
| 6 | Florida Municipal Power Agency | Richard L. Montgomery | Affirmative | |
| 6 | Florida Municipal Power Pool | Thomas E Washburn | Affirmative | |
| 6 | Florida Power & Light Co. | Silvia P. Mitchell | Affirmative | |
| 6 | Great River Energy | Donna Stephenson | | |
| 6 | Kansas City Power & Light Co. | Jessica L Klinghoffer | | |
| 6 | Lincoln Electric System | Eric Ruskamp | Affirmative | |
| 6 | Manitoba Hydro | Daniel Prowse | Negative | View |
| 6 | Muscatine Power & Water | Brandy D Olson | | |
| 6 | New York Power Authority | William Palazzo | Negative | View |
| 6 | Northern Indiana Public Service Co. | Joseph O'Brien | Affirmative | |
| 6 | NRG Energy, Inc. | Alan R. Johnson | Abstain | |
| 6 | Omaha Public Power District | David Ried | Affirmative | |
| 6 | Orlando Utilities Commission | Claston Augustus Sunanon | Negative | View |
| 6 | Platte River Power Authority | Carol Ballantine | Negative | View |
| 6 | PPL EnergyPlus LLC | Mark A Heimbach | Abstain | |
| 6 | Progress Energy | John T Sturgeon | Affirmative | |
| 6 | PSEG Energy Resources & Trade LLC | Peter Dolan | Affirmative | |
| 6 | Public Utility District No. 1 of Chelan County | Hugh A. Owen | Negative | View |
| 6 | Sacramento Municipal Utility District | Claire Warshaw | Negative | View |
| 6 | Salt River Project | Steven J Hulet | | |
| 6 | Santee Cooper | Suzanne Ritter | Affirmative | |
| 6 | Seattle City Light | Dennis Sismaet | Negative | View |
| 6 | South California Edison Company | Lujuanna Medina | Affirmative | |
| 6 | Tacoma Public Utilities | Michael C Hill | Negative | View |
| 6 | Tampa Electric Co. | Benjamin F Smith II | Affirmative | |
| 6 | Tennessee Valley Authority | Marjorie S. Parsons | Negative | View |
| 8 | | Roger C Zaklukiewicz | Affirmative | View |
| 8 | | James A Maenner | Affirmative | |
| 8 | | Edward C Stein | Affirmative | |
| 8 | JDRJC Associates | Jim D. Cyrulewski | Affirmative | |
| 8 | Utility Services, Inc. | Brian Evans-Mongeon | Abstain | |



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|----|--|---------------------|-------------|----------------------|
| 8 | Volkman Consulting, Inc. | Terry Volkman | | |
| 9 | National Association of Regulatory Utility Commissioners | Diane J. Barney | Affirmative | |
| 9 | Snohomish County PUD No. 1 | William Moojen | | |
| 10 | Midwest Reliability Organization | James D Burley | Affirmative | |
| 10 | New York State Reliability Council | Alan Adamson | Affirmative | |
| 10 | Northeast Power Coordinating Council, Inc. | Guy V. Zito | Abstain | View |
| 10 | ReliabilityFirst Corporation | Anthony E Jablonski | Affirmative | View |
| 10 | SERC Reliability Corporation | Carter B. Edge | Affirmative | View |
| 10 | Texas Reliability Entity | Larry D. Grimm | Affirmative | |
| 10 | Western Electricity Coordinating Council | Steven L. Rueckert | Negative | View |
| | | | | |

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 Washington Office: 1120 G Street, N.W. : Suite 990 : Washington, DC 20005-3801

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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement Project 2009-06 Facility Ratings Initial Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

An initial ballot on revisions to FAC-008- Facility Ratings, and a concurrent non-binding poll of associated VRF and VSLs concluded on May 2, 2011.

Ballot Results for Revisions to FAC-008

Voting statistics are listed below, and the [Ballot Results](#) Web page provides a link to the detailed results:

Quorum: 86.01 %

Approval: 48.74 %

Non-binding Poll Results for Associated VRF and VSLs

Of those who registered to participate, 47% provided an opinion; 73% of those who provided an opinion indicated support for the VRFs and VSLs that were proposed.

Next Steps

The drafting team will post its consideration of all comments, along with clean and redline versions of the standard showing any changes the drafting team makes to respond to comments, and a recirculation ballot will be conducted. In order for the ERO to be in compliance with the applicable directives, the revisions to FAC-008 must be filed with FERC no later than June 15, 2011.

Background:

As the ERO, NERC must address all directives in Orders issued by FERC. The Facility Ratings Standard Drafting Team (FR SDT) has been tasked with creating a requirement to address a Supplemental SAR to address the reliability concerns related to Facility Ratings initially discussed in paragraphs 756 and 771 of FERC's Order 693, and further explained in paragraph 76 of FERC's "Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay," September 16, 2010. These concerns relate to ensuring broad situational awareness regarding the most limiting elements of Facilities.

In Order 693, FERC explained in paragraph 756:

"...The Commission's proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets."

And provided further direction in paragraph 771:



“...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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.”

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

“In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event.”

On February 24, 2011, members of the FR SDT met with NERC and FERC staff to discuss the original directive from FERC Order 693 as well as the subsequent guidance issued in the September 16, 2010 Order.

Standards Process

The [Standard Processes Manual](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Monica Benson,
Standards Process Administrator, at monica.benson@nerc.net or at 404-446-2560.*

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Princeton, NJ 08540
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Consideration of Comments on Facility Ratings Expansion — (Project 2009-06)

The Facility Ratings Drafting Team thanks all commenters who submitted comments on the First Posting of FAC-008-3, Facility Ratings (Project 2009-06). This standard was posted for a 45-day public comment period from March 17, 2011 through May 2, 2011 and an initial ballot of the standard and a non-binding poll of the associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) were conducted from April 21 through May 2, 2011.

Stakeholders were asked to provide feedback on the standard through a special electronic comment form and members of the ballot pool provided comments either through the comment form or with their ballots or with the non-binding poll. There were 45 sets of comments submitted with a comment form; 48 balloters submitted comments either with a comment form or with a ballot. This report includes all comments submitted with a comment form or with a ballot or with the non-binding poll of the VRFs and VSLs.

http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html

Summary Consideration of Comments:

Many commenters had concerns with the language of the new Requirement R8 and its parts and subparts and asked for additional clarity. The three main concerns were

- 1) clarify which entities can request the information identified in Requirement R8,
- 2) clarify that the information requested is limited to thermal ratings, and
- 3) clarify terms including "generator deliverability", "major city," and "load pocket".

The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket.

With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities under their authority are impacted. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. This will provide better guidance with respect to "generator deliverability," "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed as requesting the information do not necessarily own Facilities.

- The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities.
- The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities.
- The Transmission Operator does not necessarily own assets but has operational authority over those Facilities.
- The Transmission Owner does own its Facilities and has authority over those Facilities.

The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.

The FRSDT also modified R8, Part 8.2.2 to change the term, "Equipment Rating" to "Thermal Rating" for clarity in support of stakeholder comments.

The proposed clarified Requirement R8 is shown below:

Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that **limits the use of Facilities under the requester's authority by causing the requester has identified as having** any of the following: 1) A an Interconnection Reliability Operating Limit, 2) A limitation **ing**-of Total Transfer Capability, 3) An impediment **ng** to generator deliverability, or 4) An impediment to **impeding** service to a major **city-or** load **center pocket**:

8.2.1 Identity of the existing next most limiting equipment of the Facility

8.2.2 The **Equipment**-Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Most commenters agreed with the proposed VRFs, VSLs and Time Horizons. Some commenters had concerns with the use of percentages in the VSLs. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found. Some commenters suggested that the VRF for R8 should be lower. The VRF for R8 matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.

Other commenters suggested that the Time Horizon for R8 should be Long-term Planning. The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.

Minor revisions were made to the VSLs for R7 and R8 as follows:

1. The first VSL under the Lower category needs the words "and including" inserted prior to the "15 calendar days" language. The last part of the sentence should state "but missed meeting the schedules by up to and including 15 calendar days. This extra language would further clarify that if an entity reported its Facility Ratings on the 15th day, they would fall under the "Lower" VSL.

2. For the VSLs which incorporate percentages, the VSL percentages are not inclusive. The words "or equal to" should be incorporated into such VSLs. For

example, the second VSL under the Lower category should state “The responsible entity provided less than 100%, but not less than or equal to 95%...” This type of change should be incorporated in all four of the VSL categories.

The majority of commenters agree with the Measure M8. A couple of commenters had suggestions for including language that limits the scope to requested data and other specific language. The FRSDT believes that the phrase “in accordance with Requirement R8” contained in M8 is sufficient language to tie the measure to the requirement and provide the linkage suggested by the commenters.

The majority of commenters agree with the implementation plan. One commenter suggested that NERC provide guidance on how to handle certain specific situations. The FRSDT maintains that the requirements are written to allow entities flexibility in determining their Facility Ratings Methodology and the subsequent Facility Ratings. The requirements allow for entities to handle both common and unique situations without being prescriptive. Another commenter suggested changing the effective date to match the end date of a NERC Alert relating to FAC-008. The FRSDT believes that the requirements under FAC-008-3 are not onerous and that entities are performing the work today that will be required under FAC-008-3.

Several commenters requested clarification or edits to the standard which are outside of the scope of the Supplemental SAR. These comments will be placed in the NERC Issues Database for consideration on the next revision to the standard.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Herb Schrayshuen, at 609-452-8060 or at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

Index to Questions, Comments, and Responses

1. Do you agree that the proposed Requirement R8 addresses the FERC Directive from Order 693, Paragraph 756? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 22

2. Do you agree with the proposed Violation Risk Factor, Time Horizon and Violation Severity Levels for requirement R8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 78

3. Do you agree with the proposed Measure M8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 89

4. Do you agree with the proposed Implementation Plan for FAC-008-3, Facility Ratings? If not, please explain why not and if possible, provide an alternative that would be acceptable to you. 94

5. If you have any other comments related to the FERC directive (paragraphs 756 and 771) and this Supplemental SAR that you have not already provided in response to the questions above, please provide them here. 98

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities
- 10 — Regional Reliability Organizations, Regional Entities

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
|---|----------------------|---|--------------------------------------|--------------------------------|---|---|---|---|---|---|---|---|----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. | Group | Jesus Sammy Alcaraz | Imperial Irrigation District | X | | X | X | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | David Barajas | IID | WECC | 1, 3, 4 | | | | | | | | | |
| 2. | Group | Guy Zito | Northeast Power Coordinating Council | | | | | | | | | | X |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Alan Adamson | New York State Reliability Council, LLC | NPCC | 10 | | | | | | | | | |
| 2. | Gregory Campoli | New York Independent System Operator | NPCC | 2 | | | | | | | | | |
| 3. | Kurtis Chong | Independent Electricity System Operator | NPCC | 2 | | | | | | | | | |
| 4. | Sylvain Clermont | Hydro-Quebec TransEnergie | NPCC | 1 | | | | | | | | | |
| 5. | Chris de Graffenried | Consolidated Edison Co. of New York, Inc. | NPCC | 1 | | | | | | | | | |
| 6. | Gerry Dunbar | Northeast Power Coordinating Council | | 10 | | | | | | | | | |
| 7. | Brian Evans-Mongeon | Utility Services | NPCC | 8 | | | | | | | | | |
| 8. | Mike Garton | Dominion Resources Services, Inc. | NPCC | 5 | | | | | | | | | |
| 9. | Brian L. Gooder | Ontario Power Generation Incorporated | NPCC | 5 | | | | | | | | | |
| 10. | Kathleen Goodman | ISO - New England | NPCC | 2 | | | | | | | | | |
| 11. | David Kiguel | Hydro One Networks Inc. | NPCC | 1 | | | | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | | | | | | |
| 12. Michael R. Lombardi | Northeast Utilities | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 13. Randy MacDonald | New Brunswick Power Transmission | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 14. Bruce Metruck | New York Power Authority | NPCC | 6 | | | | | | | | | | | | | | | | | |
| 15. Chantel Haswell | FPL Group, Inc. | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 16. Lee Pedowicz | Northeast Power Coordinating Council | NPCC | 10 | | | | | | | | | | | | | | | | | |
| 17. Robert Pellegrini | The United Illuminating Company | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 18. Saurabh Saksena | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 19. Michael Schiavone | National Grid | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 20. Wayne Sipperly | New York Power Authority | NPCC | 5 | | | | | | | | | | | | | | | | | |
| 21. Donald Weaver | New Brunswick System Operator | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 22. Ben Wu | Orange and Rockland Utilities | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 23. Peter Yost | Consolidated Edison Co. of New York, Inc. | NPCC | 3 | | | | | | | | | | | | | | | | | |
| 24. Si Truc Phan | Hydro-Quebec TransEnergie | NPCC | 1 | | | | | | | | | | | | | | | | | |
| 3. | Group | Louis Slade | Dominion | X | | X | | X | X | | | | | | | | | | | |
| | Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | |
| 1. | Connie Lowe | Electric Market Policy | SERC | 5, 6 | | | | | | | | | | | | | | | | |
| 2. | Mike Garton | Electric Market Policy | NPCC | 5, 6 | | | | | | | | | | | | | | | | |
| 3. | Michael Gildea | Electric Market Policy | NA - Not Applicable | 5, 6 | | | | | | | | | | | | | | | | |
| 4. | Michael Crowley | Electric Transmission | SERC | 1, 3 | | | | | | | | | | | | | | | | |
| 5. | Matt Woodzell | Fossil & Hydro | SERC | 5 | | | | | | | | | | | | | | | | |
| 6. | Jeff Bailey | Nuclear | MRO | 5 | | | | | | | | | | | | | | | | |
| 7. | Chip Humphrey | Fossil & Hydro | RFC | 5 | | | | | | | | | | | | | | | | |
| 4. | Group | Jonathan Hayes | SPP Reliability Standards Development | | | | | | | | | | | | | | | | | |
| | Additional Member | Additional Organization | Region | Segment Selection | | | | | | | | | | | | | | | | |
| 1. | John Allen | City Utilities of Springfield, MO | SPP | 1, 4 | | | | | | | | | | | | | | | | |
| 5. | Group | Steve Alexanderson | Pacific Northwest Small Public Power Utility Comment Group | | | X | X | | | | | | | | | | | | X | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Additional Member | | Additional Organization | | Region Segment Selection | | | | | | | | | |
| 1. | Dave Proebstel | Clallam County PUD No.1 | WECC | 3 | | | | | | | | | |
| 2. | Russell A. Noble | Cowlitz County PUD No. 1 | WECC | 3, 4, 5 | | | | | | | | | |
| 3. | Ronald Sporseen | Blachly-Lane Electric Cooperative | WECC | 3 | | | | | | | | | |
| 4. | Ronald Sporseen | Central Electric Cooperative | WECC | 3 | | | | | | | | | |
| 5. | Ronald Sporseen | Consumers Power | WECC | 1, 3 | | | | | | | | | |
| 6. | Ronald Sporseen | Clearwater Power Company | WECC | 3 | | | | | | | | | |
| 7. | Ronald Sporseen | Douglas Electric Cooperative | WECC | 3 | | | | | | | | | |
| 8. | Ronald Sporseen | Fall River Rural Electric Cooperative | WECC | 3 | | | | | | | | | |
| 9. | Ronald Sporseen | Northern Lights | WECC | 3 | | | | | | | | | |
| 10. | Ronald Sporseen | Lane Electric Cooperative | WECC | 3 | | | | | | | | | |
| 11. | Ronald Sporseen | Raft River Rural Electric Cooperative | WECC | 3 | | | | | | | | | |
| 12. | Ronald Sporseen | Lost River Electric Cooperative | WECC | 3 | | | | | | | | | |
| 13. | Ronald Sporseen | Salmon River Electric Cooperative | WECC | 3 | | | | | | | | | |
| 14. | Ronald Sporseen | Umatilla Electric Cooperative | WECC | 3 | | | | | | | | | |
| 15. | Ronald Sporseen | West Oregon Electric Cooperative | WECC | 3 | | | | | | | | | |
| 16. | Ronald Sporseen | Pacific Northwest Generating Cooperative | WECC | 3, 4, 8 | | | | | | | | | |
| 17. | Ronald Sporseen | Power Resources Cooperative | WECC | 5 | | | | | | | | | |
| 18. | Ronald Sporseen | Lincoln Electric Cooperative | WECC | 3 | | | | | | | | | |
| 19. | Ronald Sporseen | Coos-Curry Electric Cooperative | WECC | 3 | | | | | | | | | |
| 6. | Group | Denise Koehn | Bonneville Power Administration | X | | X | | X | X | | | | |
| Additional Member | | Additional Organization | | Region Segment Selection | | | | | | | | | |
| 1. | Richard Becker | BPA, Transmission, Substation Engineering | WECC | 1 | | | | | | | | | |
| 7. | Group | Bill Shultz | Southern Company Generation (SCG) Technical Services | | | | | X | | | | | |
| Additional Member | | Additional Organization | | Region Segment Selection | | | | | | | | | |
| 1. | Bill Shultz | Southern Company Generation | SERC | 5 | | | | | | | | | |
| 2. | Terry Crawley | Southern Company Generation | SERC | 5 | | | | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 8. | Group | Mikhail Flakovich | Public Service Enterprise Group | X | | X | | X | X | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Peter Dolan | PSEG Power | ERCOT | 5, 6 | | | | | | | | | |
| 2. | Mikhail Falkovich | PSEG Power | ERCOT | 5, 6 | | | | | | | | | |
| 3. | Ken Brown | PSE&G | RFC | 1, 3 | | | | | | | | | |
| 4. | Clint Bogan | PESG Power | NPCC | 5, 6 | | | | | | | | | |
| 5. | Scott Slickers | PSEG Power | RFC | 5, 6 | | | | | | | | | |
| 9. | Group | Bruce Wertz | NERC Standards Review Subcommittee | | | | | X | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Tim Soles | Occidental Power Services, Inc. | ERCOT | 5 | | | | | | | | | |
| 10. | Group | Marie Knox | MISO Standards Collaborators | | X | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Sam Ciccone | First Energy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | |
| 2. | Doug Hohlbaugh | First Energy | RFC | 1, 3, 4, 5, 6 | | | | | | | | | |
| 3. | Jim Cyrulewski | JDRJC Associates | RFC | 8 | | | | | | | | | |
| 11. | Group | Greg Campoli | IRC Standards Review Committee | | X | | | | | | | | |
| Additional Member Additional Organization Region Segment Selection | | | | | | | | | | | | | |
| 1. | Patrick Brown | PJM | RFC | 2 | | | | | | | | | |
| 2. | Steve Myers | ERCOT | ERCOT | 2 | | | | | | | | | |
| 3. | Charles Yeung | SPP | SPP | 2 | | | | | | | | | |
| 4. | Matt Goldberg | ISO-NE | NPCC | 2 | | | | | | | | | |
| 5. | Ben Li | IESO | NPCC | 2 | | | | | | | | | |
| 6. | Terry Bilke | MISO | MRO | 2 | | | | | | | | | |
| 7. | Bill Phillips | MISO | MRO | 2 | | | | | | | | | |
| 8. | Mark Westendorf | MISO | MRO | 2 | | | | | | | | | |
| 9. | Mark Thompson | AESO | WECC | 2 | | | | | | | | | |

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| Group/Individual | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | | | |
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| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 10. Al DiCaprio | PJM | RFC 2 | | | | | | | | | | | | |
| 11. Kathleen Goodman | ISO-NE | NPCC 2 | | | | | | | | | | | | |
| 12. Greg Van Pelt | CAISO | WECC 2 | | | | | | | | | | | | |
| 13. Don Weaver | NBSO | NPCC 2 | | | | | | | | | | | | |
| 14. Mike Falvo | IESO | NPCC 2 | | | | | | | | | | | | |
| 12. Individual | Sandra Shaffer | PacifiCorp | X | | X | | X | | | | | | | |
| 13. Individual | JT Wood | Southern Company Transmission | X | | X | | | | | | | | | |
| 14. Individual | Mike Laney | Luminant Power | | | | | X | | | | | | | |
| 15. Individual | Cynthia Oder | SRP | X | | X | | X | X | | | | | | |
| 16. Individual | Jonathan Appelbaum | United Illuminating Company | X | | | | | | | | | | | |
| 17. Individual | Nathaniel Larson | New Harquahala Generating Co. | X | | | | X | | | | | | | |
| 18. Individual | Dan Roethemeyer | Dynegy Inc. | | | | | X | | | | | | | |
| 19. Individual | Thad Ness | American Electric Power | X | | X | | X | X | | | | | | |
| 20. Individual | Robert Casey | Georgia Transmission Corporation | X | | | | | | | | | | | |
| 21. Individual | Jack Stamper | Clark Public Utilities | X | | | | | | | | | | | |
| 22. Individual | John Bee | Exelon | X | | X | | X | | | | | | | |
| 23. Individual | Edvina Uzunovic | The Valley Group, a Nexans company | X | X | | | | | | | | | | |
| 24. Individual | Ed Davis | Entergy Services, Inc | X | | X | | X | X | | | | | | |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
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| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 25. | Individual | Kirit Shah | Ameren | X | | X | | X | X | | | | |
| 26. | Individual | David Thorne | Pepco Holdings Inc | X | | X | | | | | | | |
| 27. | Individual | Joe Petaski | Manitoba Hydro | X | | X | | X | X | | | | |
| 28. | Individual | Patricia Robertson | BC Hydro and Power Authority | X | X | X | | X | | | | | |
| 29. | Individual | Andrew Pusztai | American Transmission Company, LLC | X | | | | | | | | | |
| 30. | Individual | Brian Jacoby | BGE | X | | | | | | | | | |
| 31. | Individual | Darrin Adams | East Kentucky Power Cooperative | X | | X | | X | | | | | |
| 32. | Individual | Tony Kroskey | Brazos Electric Power Cooperative | X | | X | | X | | | | | |
| 33. | Individual | Jim Keller | We Energies | | | | | | | | | | |
| 34. | Individual | Claudiu Cadar | GDS Associates | X | | | | | | | | | |
| 35. | Individual | Bill Middaugh | Tri-State G&T | X | | | | | | | | | |
| 36. | Individual | Rex Roehl | Indeck Energy Services | | | | | X | | | | | |
| 37. | Individual | Michael Schiavone | Niagara Mohawk (National Grid Company) | | | X | | | | | | | |
| 38. | Individual | Saurabh Saksena | National Grid | X | | X | | | | | | | |
| 39. | Individual | RoLynda Shumpert | South Carolina Electric and Gas | X | | X | | X | X | | | | |
| 40. | Individual | Dennis Sismaet | Seattle City Light | | | | | | X | | | | |

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| Group/Individual | | Commenter | Organization | Registered Ballot Body Segment | | | | | | | | | |
|------------------|------------|-------------------|------------------------------------|--------------------------------|---|---|---|---|---|---|---|---|----|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 41. | Individual | Jason L. Marshall | ACES Power Marketing | | | | | | X | | | | |
| 42. | Individual | Armin Klusman | CenterPoint Energy | X | | | | | | | | | |
| 43. | Individual | Terri Pyle | Oklahoma Municipal Power Authority | | | | X | | | | | | |
| 44. | Individual | B. Vijayraghavan | Pacific Gas & electric Company | X | | | | | | | | | |
| 45. | Individual | Alice Ireland | Xcel Energy | X | | X | | X | X | | | | |

The following balloters submitted comments either with a comment form or with their ballot:

| | Balloter | Company | Industry Segment |
|-----|-------------------------------|---------------------------------------|-------------------------|
| 1. | Edward P. Cox | AEP Marketing | 6 |
| 2. | Richard J. Mandes | Alabama Power Company | 3 |
| 3. | Kirit S. Shah | Ameren Services | 1 |
| 4. | Paul B. Johnson | American Electric Power | 1 |
| 5. | Andrew Z Puztai | American Transmission Company, LLC | 1 |
| 6. | John Bussman | Associated Electric Cooperative, Inc. | 1 |
| 7. | James Armke | Austin Energy | 1 |
| 8. | Gregory S Miller | Baltimore Gas & Electric Company | 1 |
| 9. | Venkataramakrishnan Vinnakota | BC Hydro | 2 |
| 10. | Patricia Robertson | BC Hydro and Power Authority | 1 |
| 11. | Pat G. Harrington | BC Hydro and Power Authority | 3 |
| 12. | Clement Ma | BC Hydro and Power Authority | 5 |
| 13. | Donald S. Watkins | Bonneville Power Administration | 1 |
| 14. | Rebecca Berdahl | Bonneville Power Administration | 3 |
| 15. | Francis J. Halpin | Bonneville Power Administration | 5 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|--------------------|--|-------------------------|
| 16. | Dave Markham | Central Electric Cooperative, Inc. (Redmond, Oregon) | 3 |
| 17. | Steve Alexanderson | Central Lincoln PUD | 3 |
| 18. | Shamus J Gamache | Central Lincoln PUD | 4 |
| 19. | Kevin L Howes | Central Maine Power Company | 1 |
| 20. | John Yale | Chelan County Public Utility District #1 | 5 |
| 21. | Andrew Gallo | City of Austin dba Austin Energy | 3 |
| 22. | Reza Ebrahimian | City of Austin dba Austin Energy | 4 |
| 23. | Lisa L Martin | City of Austin dba Austin Energy | 6 |
| 24. | Linda R. Jacobson | City of Farmington | 3 |
| 25. | Jeff Mead | City of Grand Island | 5 |
| 26. | Bill Hughes | City of Redding | 3 |
| 27. | Nicholas Zettel | City of Redding | 4 |
| 28. | Paul A Cummings | City of Redding | 5 |
| 29. | Marvin Briggs | City of Redding | 6 |
| 30. | Chang G Choi | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | 1 |
| 31. | Max Emrick | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | 5 |

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| | Balloter | Company | Industry Segment |
|-----|------------------------------|---|-------------------------|
| 32. | Michelle A Corley | Cleco Corporation | 3 |
| 33. | Stephanie Huffman | Cleco Power | 5 |
| 34. | Robert Hirschak | Cleco Power LLC | 6 |
| 35. | Paul Morland | Colorado Springs Utilities | 1 |
| 36. | Lisa Cleary | Colorado Springs Utilities | 3 |
| 37. | Jennifer Eckels | Colorado Springs Utilities | 5 |
| 38. | Lisa C Rosintoski | Colorado Springs Utilities | 6 |
| 39. | Christopher L de Graffenried | Consolidated Edison Co. of New York | 1 |
| 40. | Peter T Yost | Consolidated Edison Co. of New York | 3 |
| 41. | Wilket (Jack) Ng | Consolidated Edison Co. of New York | 5 |
| 42. | Nickesha P Carrol | Consolidated Edison Co. of New York | 6 |
| 43. | Carolyn Ingersoll | Constellation Energy | 3 |
| 44. | Brenda Powell | Constellation Energy Commodities Group | 6 |
| 45. | Amir Y Hammad | Constellation Power Source Generation, Inc. | 5 |
| 46. | James B Lewis | Consumers Energy | 5 |
| 47. | Roman Gillen | Consumers Power Inc. | 3 |
| 48. | Roger Meader | Coos-Curry Electric Cooperative, Inc | 3 |

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| | Balloter | Company | Industry Segment |
|-----|----------------------|---|-------------------------|
| 49. | Russell A Noble | Cowlitz County PUD | 3 |
| 50. | Rick Syring | Cowlitz County PUD | 4 |
| 51. | Bob Essex | Cowlitz County PUD | 5 |
| 52. | Dave Sabala | Douglas Electric Cooperative | 3 |
| 53. | Sally Witt | East Kentucky Power Coop. | 3 |
| 54. | Joel T Plessinger | Entergy | 3 |
| 55. | Edward J Davis | Entergy Services, Inc. | 1 |
| 56. | Terri F Benoit | Entergy Services, Inc. | 6 |
| 57. | Claudiu Cadar | GDS Associates, Inc. | 1 |
| 58. | Anthony L Wilson | Georgia Power Company | 3 |
| 59. | Harold Taylor, II | Georgia Transmission Corporation | 1 |
| 60. | Robert Solomon | Hoosier Energy Rural Electric Cooperative, Inc. | 1 |
| 61. | Ajay Garg | Hydro One Networks, Inc. | 1 |
| 62. | David L Kiguel | Hydro One Networks, Inc. | 3 |
| 63. | Bernard Pelletier | Hydro-Quebec TransEnergie | 1 |
| 64. | Ronald D. Schellberg | Idaho Power Company | 1 |
| 65. | Tino Zaragoza | Imperial Irrigation District | 1 |

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| | Balloter | Company | Industry Segment |
|-----|---------------------|---|-------------------------|
| 66. | Jesus S. Alcaraz | Imperial Irrigation District | 3 |
| 67. | Diana U Torres | Imperial Irrigation District | 4 |
| 68. | Kim Warren | Independent Electricity System Operator | 2 |
| 69. | Kathleen Goodman | ISO New England, Inc. | 2 |
| 70. | John J Babik | JEA | 5 |
| 71. | Michael Henry | Lincoln Electric Cooperative, Inc. | 3 |
| 72. | Charles A. Freibert | Louisville Gas and Electric Co. | 3 |
| 73. | Tom Foreman | Lower Colorado River Authority | 5 |
| 74. | Mike Laney | Luminant Generation Company LLC | 5 |
| 75. | Joseph G. DePoorter | Madison Gas and Electric Co. | 4 |
| 76. | Joe D Petaski | Manitoba Hydro | 1 |
| 77. | Greg C. Parent | Manitoba Hydro | 3 |
| 78. | S N Fernando | Manitoba Hydro | 5 |
| 79. | Daniel Prowse | Manitoba Hydro | 6 |
| 80. | Danny Dees | MEAG Power | 1 |
| 81. | Steven Grego | MEAG Power | 5 |
| 82. | Terry Harbour | MidAmerican Energy Co. | 1 |

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| | Balloter | Company | Industry Segment |
|-----|-------------------|--|-------------------------|
| 83. | Marie Knox | Midwest ISO, Inc. | 2 |
| 84. | Don Horsley | Mississippi Power | 3 |
| 85. | Spencer Tacke | Modesto Irrigation District | 4 |
| 86. | Steven M. Jackson | Municipal Electric Authority of Georgia | 3 |
| 87. | Tim Reed | Muscatine Power & Water | 1 |
| 88. | John S Bos | Muscatine Power & Water | 3 |
| 89. | Saurabh Saksena | National Grid | 1 |
| 90. | Randy MacDonald | New Brunswick Power Transmission Corporation | 1 |
| 91. | Arnold J. Schuff | New York Power Authority | 1 |
| 92. | Gerald Mannarino | New York Power Authority | 5 |
| 93. | William Palazzo | New York Power Authority | 6 |
| 94. | Raymond P Kinney | New York State Electric & Gas Corp. | 1 |
| 95. | Guy V. Zito | Northeast Power Coordinating Council, Inc. | 10 |
| 96. | Michelle DAntuono | Occidental Chemical | 5 |
| 97. | Ray Ellis | Okanogan County Electric Cooperative, Inc. | 3 |
| 98. | Terri Pyle | Oklahoma Municipal Power Authority | 4 |
| 99. | Colin Anderson | Ontario Power Generation Inc. | 5 |

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| | Balloter | Company | Industry Segment |
|------|--------------------------|---|-------------------------|
| 100. | Ballard Keith Mutters | Orlando Utilities Commission | 3 |
| 101. | Richard Kinas | Orlando Utilities Commission | 5 |
| 102. | Claston Augustus Sunanon | Orlando Utilities Commission | 6 |
| 103. | John H Hagen | Pacific Gas and Electric Company | 3 |
| 104. | Richard J. Padilla | Pacific Gas and Electric Company | 5 |
| 105. | John C. Collins | Platte River Power Authority | 1 |
| 106. | Terry L Baker | Platte River Power Authority | 3 |
| 107. | Pete Ungerman | Platte River Power Authority | 5 |
| 108. | Carol Ballantine | Platte River Power Authority | 6 |
| 109. | David Thorne | Potomac Electric Power Co. | 1 |
| 110. | Kenneth D. Brown | Public Service Electric and Gas Co. | 1 |
| 111. | Jeffrey Mueller | Public Service Electric and Gas Co. | 3 |
| 112. | Chad Bowman | Public Utility District No. 1 of Chelan County | 1 |
| 113. | Hugh A. Owen | Public Utility District No. 1 of Chelan County | 6 |
| 114. | John D. Martinsen | Public Utility District No. 1 of Snohomish County | 4 |
| 115. | Greg Lange | Public Utility District No. 2 of Grant County | 3 |

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| | Balloter | Company | Industry Segment |
|------|---------------------|---------------------------------------|-------------------------|
| 116. | Heber Carpenter | Raft River Rural Electric Cooperative | 3 |
| 117. | Anthony E Jablonski | ReliabilityFirst Corporation | 10 |
| 118. | John C. Allen | Rochester Gas and Electric Corp. | 1 |
| 119. | Tim Kelley | Sacramento Municipal Utility District | 1 |
| 120. | James Leigh-Kendall | Sacramento Municipal Utility District | 3 |
| 121. | Mike Ramirez | Sacramento Municipal Utility District | 4 |
| 122. | Bethany Hunter | Sacramento Municipal Utility District | 5 |
| 123. | Claire Warshaw | Sacramento Municipal Utility District | 6 |
| 124. | Ken Dizes | Salmon River Electric Cooperative | 3 |
| 125. | Robert Kondziolka | Salt River Project | 1 |
| 126. | John T. Underhill | Salt River Project | 3 |
| 127. | Glen Reeves | Salt River Project | 5 |
| 128. | Pawel Krupa | Seattle City Light | 1 |
| 129. | Dana Wheelock | Seattle City Light | 3 |
| 130. | Hao Li | Seattle City Light | 4 |
| 131. | Michael J. Haynes | Seattle City Light | 5 |
| 132. | Dennis Sismaet | Seattle City Light | 6 |

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| | Balloter | Company | Industry Segment |
|------|---------------------|--------------------------------------|-------------------------|
| 133. | Carter B. Edge | SERC Reliability Corporation | 10 |
| 134. | Rich Salgo | Sierra Pacific Power Co. | 1 |
| 135. | Long T Duong | Snohomish County PUD No. 1 | 1 |
| 136. | Mark Oens | Snohomish County PUD No. 1 | 3 |
| 137. | William D Shultz | Southern Company Generation | 5 |
| 138. | Robert A Schaffeld | Southern Company Services, Inc. | 1 |
| 139. | Charles H Yeung | Southwest Power Pool | 2 |
| 140. | Noman Lee Williams | Sunflower Electric Power Corporation | 1 |
| 141. | Travis Metcalfe | Tacoma Public Utilities | 3 |
| 142. | Keith Morisette | Tacoma Public Utilities | 4 |
| 143. | Michael C Hill | Tacoma Public Utilities | 6 |
| 144. | Larry Akens | Tennessee Valley Authority | 1 |
| 145. | Ian S Grant | Tennessee Valley Authority | 3 |
| 146. | David Thompson | Tennessee Valley Authority | 5 |
| 147. | Marjorie S. Parsons | Tennessee Valley Authority | 6 |
| 148. | Tracy Sliman | Tri-State G & T Association, Inc. | 1 |
| 149. | John Tolo | Tucson Electric Power Co. | 1 |

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| | Balloter | Company | Industry Segment |
|------|----------------------|--|-------------------------|
| 150. | Melissa Kurtz | U.S. Army Corps of Engineers | 5 |
| 151. | Martin Bauer P.E. | U.S. Bureau of Reclamation | 5 |
| 152. | Steve Eldrige | Umatilla Electric Cooperative | 3 |
| 153. | Jonathan Appelbaum | United Illuminating Co. | 1 |
| 154. | Steven L. Rueckert | Western Electricity Coordinating Council | 10 |
| 155. | Anthony Jankowski | Wisconsin Energy Corp. | 4 |
| 156. | Gregory L Pieper | Xcel Energy, Inc. | 1 |
| 157. | Michael Ibold | Xcel Energy, Inc. | 3 |
| 158. | Roger C Zaklukiewicz | | 8 |

1. Do you agree that the proposed Requirement R8 addresses the FERC Directive from Order 693, Paragraph 756? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: Many commenters had concerns with the language of the new Requirement R8 and its parts and subparts. The three main concerns were 1) entities who could request the information, 2) limiting the information to thermal ratings and 3) terms like "major city" and "load pocket".

The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket.

With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.

The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.

The FRSDT also modified R8, Part 8.2.2 to change the term, "Equipment Rating" to "Thermal Rating" for clarity in support of stakeholder comments.

The proposed clarified Requirement R8 is shown below:

8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that ~~limits the use of Facilities under the requester's authority by causing the requester has identified as having any of the following:~~ 1) ~~A an~~ Interconnection Reliability Operating Limit, 2) ~~A limitation ing-~~ of Total Transfer Capability, 3) ~~An impediment ng~~ to generator deliverability, or 4) ~~An impediment to-impeding~~ service to a major ~~city or~~ load ~~center-pocket~~:

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8.2.1 Identity of the existing next most limiting equipment of the Facility

8.2.2 The ~~Equipment Thermal~~ Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

No other revisions were made to the standard except for minor Measure and VSL clarifications.

| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|--|
| Ontario Power Generation Inc. – Colin Anderson | | <p>1. OPG disagrees with the requirement to provide "Limiting Equipment" information as specified in Requirement 8.1.2. It remains unclear as to what reliability purpose would be served by the provision of this information. Maintenance of this type of information would be onerous, and particularly in light of its questionable utility, OPG sees no need to undertake such work.</p> <p>2. For the same reasons listed above, Requirement 8.2 is completely unnecessary.</p> <p>3. All other elements of the standard that refer to either of the above Requirements need to be deleted or amended.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The background material was provided with the posting of the standard. During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour</p> | | |

² When this column is blank, it indicates a comment that was submitted with a ballot but not via the electronic comment form. Some commenters submitted duplicate comments with their ballot and via the electronic comment form; in this case, the Yes or No column is marked with their response in the electronic comment form.

Consideration of Comments on Facility Ratings Expansion— Project 2009-06

| Organization | Yes or No ² | Question 1 Comment |
|---|------------------------|--|
| rating or some other value. | | |
| JEA – John J Babik | | <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits USE OF the Requester’s Facilities by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| Associated Electric Cooperative, Inc. | | <p>AECI wants to thank the team for their efforts. However, the time period to respond is only 30 days. The current version (R5) allows for 45 days and AECI believes when an entity needs to perform research on a request that requires interaction with adjacent entities 60 days would be more appropriate.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for your comment. Requirement 5 has a 45 day provision for responding to comments on the technical review of your methodology or documentation. As envisioned, the information necessary to comply with R7 and R8 should be readily available and accessible by entities. The SDT believes that a 30 day response is adequate.</p> | | |
| Constellation Energy – Carolyn Ingersoll | | <p>Although CECD believes that the proposed edits to R8 satisfies the FERC Order related to facility ratings, there are vague terms that need to be clarified in order for the standard to be acceptable. As an example, the term “impeding generator deliverability” needs to be better defined so that GOs and GOPs can better prepare for any request on its next most limiting piece of equipment.</p> |

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| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|---|
| Constellation Energy Commodities Group – Brenda Powell | | Although Constellation Energy Commodities Group believes that the proposed edits to R8 satisfies the FERC Order related to facility ratings, there are vague terms that need to be clarified in order for the standard to be acceptable. As an example, the term “impeding generator deliverability” needs to be better defined so that GOs and GOPs can better prepare for any request on its next most limiting piece of equipment. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Constellation Power Source Generation, Inc. – Amir Y Hammad | | Although Constellation Power Generation believes that the proposed edits to R8 satisfies the FERC Order related to facility ratings, there are vague terms that need to be clarified in order for the standard to be acceptable. As an example, the term “impeding generator deliverability” needs to be better defined so that GOs and GOPs can better prepare for any request on its next most limiting piece of equipment. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|--|
| Consideration above. | | |
| Northeast Power Coordinating Council, Inc. – Guy V. Zito | | Although the intent of the FERC Directive was met and might have even been exceeded in the view of some, there is question on what constitutes "major city or load pocket" in the revised document. NPCC is hesitant to support this wording due to a lack of definition of these terms and how an entity would apply them. There could be inconsistencies and issues with the Requirement as written. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Consumers Energy – James B Lewis | | As a Generator Owner, I believe the concept of "Thermal Rating" is quite poorly defined. This concept comes in in R8.2 as follows: "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:" If a boiler has too much reflective ash on its waterwalls, this heat transfer (Thermal) issue may certainly limit "generator deliverability". Similar issues arise in poor thermal performance of a fouled condenser, a feedwater heater, an air preheater, a steam turbine, or a gas turbine. All these have some sort of "Thermal Rating" that impacts "generator deliverability". Thus, the proposed Standard grossly over-reaches. |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8 is applicable to only the Generation Owners that are subject to Requirement R2. Requirement R2, requires Generator Owners that own transmission equipment (e.g. the local switchyard associated with a generating station) to provide comparable ratings and equipment information as a Transmission owner (as in Requirement R3). If a Generator Owner is not subject to Requirement R2, that same Generator Owner is not subject to Requirement R8.</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|---|
| Public Service Electric and Gas Co.- Kenneth D. Brown; Jeffrey Mueller | | <p>Comment #1 PSEG suggests numbering the 4 scenarios in section 8.2, similar to how it was numbered in the FERC paragraph 756. Also, the FERC paragraph used the word “causing” but the standard used the word “having”. Therefore it would read as: “Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as causing one of the following 1. An Interconnection Reliability Operating Limit (IROL); 2. A limitation of Total Transfer Capability,; 3. Impeding generator deliverability, or; 4. Impeding service to a major city or load pocket.”</p> <p>Comment #2: Would the requesting entity be allowed to ask for this data at each of the registered entity’s facilities at the same time, or would it only be one facility at a time?</p> |
| <p>Response: The FRSDT thanks you for your comment. #1 - The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, the SDT accepts the proposed change. The Requirement does not address the process of asking for these data; however, as noted by the commenter, information related to the next most limiting equipment is restricted to the subset of facilities defined in Requirement R8, Part 8.2.</p> <p>#2 – The requirement is written such that a requesting entity may ask for any and all relevant information during a single request provided that the Facilities meet the criteria in the requirement.</p> | | |
| New York Power Authority – Gerald Mannarino | | <p>Comments: Requirement 8.2. - Need to clarify what constitutes a major city or load pocket. Requirement 8.1.2. - Believe that this would be applicable to each individual Normal and Emergency rating thus required to be provided. Believe that the proposed revision has gone beyond the intent of the FERC Directive. Requirement 8.2.2. - should state “The equipment’s Thermal Rating”</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
|---|------------------------------|--|
| <p>interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Cowlitz County PUD Rick Syring Bob Essex</p> | | <p>Cowlitz is concerned that auditors will subjectively require evidence of the second most limiting facility has been identified regardless of whether there has been a request for such information from the RC, PC, TP, TO, or TOP. This is not to imply that the standard needs further revision; however the SDT needs to document fully its intent.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT believes that Requirement R8, Part 8.2 is clear in that data needs to be for a subset of facilities if and when it is requested by a Reliability Coordinator, Planning Coordinator, Transmission Planner, Transmission Owner or Transmission Operator that has authority for the specific Facility.</p> | | |
| <p>Cowlitz County PUD Russell A Noble</p> | | <p>Cowlitz is concerned that auditors will subjectively require evidence of the second most limiting facility has been identified regardless of whether there has been a request for such information from the RC, PC, TP, TO, or TOP. This is not to imply that the standard needs further revision; however the SDT needs to document fully its intent that such information must only be made available on request of the RC, PC, TP, TO or TOP and not the auditor.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT believes that Requirement R8, Part 8.2 is clear in that data needs to be for a subset of facilities if and when it is requested by a Reliability Coordinator, Planning Coordinator, Transmission Planner, Transmission Owner or Transmission Operator that has authority for the specific Facility.</p> | | |
| <p>Tucson Electric Power Co. John Tolo</p> | | <p>Disagreement with R 8.2</p> |
| <p>Occidental Chemical Michelle DAntuono</p> | | <p>Even though the language of the requirement exactly paraphrases FERC’s directive, it introduces ambiguity which likely does not meet their intent. For example, in R8.2 the term “major city or load pocket” will be interpreted dissimilarly by planners in different regions of the country. A clear distinction similar to the transmission terms “IROL” and “TTC” needs to be used instead. Secondly, there appears to be no minimum threshold set in R8.2 for a Facility “impeding generator deliverability”. Auditors can (and do) use their own judgment</p> |

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| Organization | Yes or No ² | Question 1 Comment |
|--|------------------------|--|
| | | <p>when they come across indefinite phrases like this. Every minor generator augment will arguably require the establishment of secondary ratings on the corresponding BES interconnection Facility as this is written.</p> |
| <p>Response: The FRSDT thanks you for your comment.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Requirement R8, Part 8.2 and its subparts only apply to transmission facilities that are owned by a Generator Owner.</p> | | |
| <p>City of Farmington</p> | | <p>FEUS appreciates the efforts of the drafting team. However, FEUS does not support the standard as currently drafted. FEUS recommends the drafting team define 'major cities' and 'load pockets.'</p> <p>In addition, clarify that the Transmission Owners and applicable Generation Owners only have to determine the amount and identity of the next-most limiting piece of equipment associated with the facility limit upon request. In other words, the next most limiting equipment and rating is not required to be determined on all facilities (readily available) - upon request, the TO or GO will have 30 days (or so) to determine and respond according. Finally, the next most limiting equipment should not be required if the most limiting equipment is the conductor.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
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| <p>more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Cleco Power Michelle A Corley Stephanie Huffman; Robert Hirschak</p> | | <p>Finally, in R7 & R8, the schedule should not be determined by the requesting entity. Replace "as scheduled by such requesting entities" with " within 30 calendar days of receipt of request."</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8, Part 8.2 limits delivery of such data to within 30 calendar days.</p> | | |
| <p>Hydro One Networks, Inc. – David L Kiguel</p> | | <p>Hydro One Networks Inc. is casting a Negative vote with the following comments. We thank the Drafting Team for trying to develop a compromise solution between the overwhelming view of the industry regarding the ratings of facilities when the most limiting equipment constraint is removed and the subsequent FERC clarification on the September 16, 2010 Order. However, the proposed solution needs further work.</p> <p>As written, Requirement 8.2 goes beyond what is mandated in the FERC Orders and clarifications. This requirement should be deleted altogether as it serves no reliability purpose within what NERC Reliability Standards purview is. In addition, the proposed Requirement 8.2 uses the terms "major city" and "load pocket" without further clarification. Not only these terms do not belong in a NERC Reliability Standard but are subject to interpretations that would make its usage potentially inconsistent by different entities.</p> <p>We believe that FERC's Orders would be addressed by deleting 8.2 and just modifying Requirement 8.1.2 to explicitly state that the identification of the most limiting equipment</p> |

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| | | applies to both Normal and Emergency ratings. |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above. Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond “Normal” and “Emergency” ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| Manitoba Hydro – Joe D Petaski; Greg C. Parent; S N Fernando; Daniel Prowse | | <p>In Diagram 1 of the Unofficial Comment Form, it is obvious that if a transmission owner provides a continuous and a shorter term rating, the continuous rating of the facility is based on Equipment 3 and the shorter term rating is based on Equipment 2. There is no need to provide two continuous and two shorter term ratings from a reliability perspective.</p> <p>-It is not clear which facilities the additional thermal rating information will be required for as it is open to interpretation whether a facility is actually an impediment to generator deliverability or load serving.</p> |
| <p>Response: The FRSDT thanks you for your comment. For the situation that you mention, there would be no need to provide two sets of continuous and short term ratings unless these were requested by an entity per Requirement R8 and all of its Parts. Per the information in the comment form:</p> | | |

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| | | <p><i>For this example, Requirement R8, Part 1 and its sub-parts requires a Transmission Owner (and the Generator Owner that must comply with Requirement R2) to provide two data points as scheduled by requesting entities.</i></p> <ul style="list-style-type: none"> <i>• For the Continuous Rating: The Facility Rating (the Equipment Rating of E3) and identification of the most limiting equipment of the Facility (E3).</i> <i>• For the Shorter Term Rating: The Facility Rating (the Equipment Rating for E2) and identification of the most limiting equipment of the Facility (E2).</i> <p><i>For this example, Requirement R8, Part 2 and its sub-parts requires a Transmission Owner (and the Generator Owner that must comply with Requirement R2) to provide four data points upon request for a specific subset of Facilities.</i></p> <ul style="list-style-type: none"> <i>• For the Continuous Rating: Identification of the existing next most limiting equipment of the Facility (E2) and its Equipment Rating.</i> <i>• For the Shorter Term Rating: Identification of the existing next most limiting equipment of the Facility (E1) and its Equipment Rating.</i> <p>The diagram only indicates one possible example of a Facility with these types of ratings. The requestor should specify the Facility and the Facility Ratings information that they desire for applicable Facilities under Requirement R8.</p> <p>The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. The additional Thermal Ratings to be provided under Requirement R8 apply to transmission Facilities owned by a Transmission Owner or a Generator Owner. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> |
| ISO New England, Inc. – | | ISO-NE would support adoption of this Standard with the following modifications to the current red-lined version: add the phrase "applicable to each individual Normal and |

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| Kathleen Goodman | | Emergency rating required to be provided" at the end of 8.1.2 and delete 8.2 altogether, as it is only a repeat of 8.1 and is not needed. |
| <p>Response: The FRSDT thanks you for your comment. The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2. Parts 8.1 and 8.2 are not duplicative. Requirement R8, Part 8.2 relates to a "next most limiting" equipment while Requirement R8, Part 8.1 relates to the "most limiting" equipment. Without Part 8.2, the FRSDT does not believe that the requirements meet the FERC Directives.</p> | | |
| Hydro-Quebec TransEnergie – Bernard Pelletier | | It's not clear how to determine a city as Major (size, population, density). Hydro-Quebec has different functions as Transmission Owner, Transmission Planner, Reliability Coordinator, LSE, etc we would know how to determine a Major City. Major city must be clarified. Same as the definition of the load pocket to be clarified. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above</p> <p>.</p> <p>Also Requirement 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |
| Louisville Gas and Electric Co.- Charles A. Freibert | | LG&E and KU Energy have concerns about this modification. There are concerns as to how the limiting equipment data will be provided to the associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) |

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| | | and Transmission Operator(s). For LG&E and KU Energy, most (if not all) of the ratings communications are through Power Flow model updates or portal updates on the RC's website which do not have a means to update a field for the Limiting Element. The major concern is that this information MUST be provided as scheduled and not "as requested". It is unclear whether this allows for an RC/TOP/BA to "NOT" schedule it as an option. |
| <p>Response: The FRSDT thanks you for your comment. The information is to be provided only upon request. The standard remains silent on the format of the information. It is expected that entities requesting the information will do so with a preferred format suggestion or the two entities will coordinate with each other on an appropriate format.</p> | | |
| Sierra Pacific Power Co.- Rich Salgo | | Negative vote is provided due to ambiguity in the proposed language of sections 8.2 and 8.2.2. These sections do not make clear the intent of the proposed R8, that the demonstration of impact is only for a thermal limit of a Facility on another's system. |
| <p>Response: The FRSDT thanks you for your comment. The SDT has modified the language to make this distinction clear. Please see revised language in the Summary Consideration above.</p> | | |
| Wisconsin Energy Corp. Anthony Jankowski | | R8 applies only to Generator Owners subject to R2, that is, those who own the GSU and high-voltage leads to the transmission interconnection point. This Requirement needs to be clarified to indicate whether it applies only to the equipment between the GSU and the transmission interconnection point, or if it applies to all the equipment between the generator and the interconnection point. We maintain that the changes based on the FERC directive should not be applied to Generator Owners. The connection from the generator to the transmission system is a radial connection which by its nature does not significantly impact the power transfer capability across the Bulk Electric System. The effort and cost for Generator Owners to be subject to these additional requirements is not accompanied by an increase in reliability, and is therefore not justified. |
| <p>Response: The FRSDT thanks you for your comment. The clarification that you suggest is contained in R2 and is not necessary to repeat in R8.</p> | | |
| Consolidated Edison Co. of New York Christopher L de Graffenried | | <p>RELIABILITY CONCERNS:</p> <p>(1) Key terms and phrases are undefined, including "most limiting," "next most limiting," "impediment," "impediment to generation deliverability," "impediment to service" and</p> |

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| Peter T Yost Wilket (Jack) Ng Nickesha P Carrol | | <p>“major cities or load pockets.”</p> <p>(2) The event graph provided along with the proposed standard fully illustrates the complication/confusion created by the proposed wording. There is a different Element and rating reported depending upon the event duration used. Each element in the graph may be the “most limiting” or “next most limiting” Element at any point, depending upon the duration selected for reporting purposes. This problem needs to be addressed.</p> <p>(3) There is no Guidance documents to clarify the reliability standard’s requirements and meaning.</p> <p>COMMENTS WITH QUESTIONS:</p> <p>1. The drafting team needs to define the following terms a. “most limiting,” b. “next most limiting,” c. “impediment to generation deliverability,” d. “impediment to service,” and e. “major cities or load pockets”</p> <p>2. The drafting team needs to provide guidance on the meaning, scope and use of the word “impediment” as it is used in the terms “impediment to generation deliverability,” and “impediment to service.” a. What are the limitations of any “impediment,” e.g., 0.1%, 1%, 5% or 10% of what measure(s), the Facility Rating? b. Is there a dead band within or threshold below which the impediment is not material, e.g., +/-5%, and beyond which it is material? c. What is the reach of any impediment, e.g. within a substation, 1 mile, 10 miles (across a load area), 100 miles (across an interface), across a Balancing Authority (NYISO), or 1,000 miles (across the Eastern Interconnection)?</p> <p>3. The drafting team needs to provide guidance on the meaning, scope and use of the phrases “most limiting” and “next most limiting” Facility or Element. a. What are the timeframe (refer to event graph), rating type(s) and duration sought, e.g., normal conditions, short term or long-term exceedance? b. What is the context of the ratings sought, e.g., normal operation, N-1 contingency, with or without cooling? c. Is reporting applicable to a particular time, day, period or season, e.g., 14:00 hrs., July 6th peak, or Summer and Winter ratings? d. Is the reporting average, normalized, typical, maximum, at some temperature, e.g., 4 hr. max. rating at 86°F, 1 hr. max. normalized to 70°F, with or without forced cooling, at an 82°F cooling sink temperature (air, river or ocean)?</p> <p>4. The drafting team should consider producing a Guidance Document with definitions, example uses and a Frequently Asked Questions (FAQ) section to provide the industry</p> |

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| | | assistance and guidance. 5. What, if any, are respondent's obligations under R8.2 for areas or regions where IROL's or TTC are not limiting or are not used? |
| <p>Response: The FRSDT thanks you for your comment. Requirement R2, Part 2.3 and Requirement R3, Part 3.3 both refer to the "most limiting applicable Equipment Rating". The SDT believes that the meaning of "most limiting" is clear when read in context. Similarly, the SDT believes, 'next most limiting' is also clear when read in context. The SDT has responded to commenter's suggestions for clarity involving the relationship between the Facility and the Requester, as well as clarification related to thermal capabilities of the equipment referred to in Requirement R8, Part 8.2. The SDT believes that these clarifications largely address this commenter's concerns.</p> <p>For your suggestion regarding defining "most limiting", etc. The FRSDT does not believe that these terms need to be a defined term in the NERC Glossary.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Guidance documents: Drafting teams are not under obligation to develop guidance documents for each standard. The incremental change to this standard is related to Requirement 8, Part 8.2. The FRSDT believes that sufficient guidance has been provided in the background material of the comment form.</p> | | |
| ReliabilityFirst Corporation – Anthony E Jablonski | | ReliabilityFirst generally agrees with the standard but has the following comments. 1. Why is there a parenthetical around the "and each Generator Owner subject to Requirement R2" language in R8? R2 is applicable to Generator Owners (with no qualifications) so therefore R8 is also applicable to Generator Owners. The beginning of |

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| | | <p>R8 should simply state “Each Transmission Owner and Generator Owner shall provide...”</p> <p>2. In Part 8.2, the terms “major city or load pocket” are ambiguous and should be better defined within the standard.</p> |
| <p>Response: The FRSDT thanks you for your comment. 1) Requirement R8 is applicable to Generator Owners to the extent the Generator owner owns Transmission type equipment (Requirement R2). However, there is no intent to apply Requirement R8 to those facilities covered by Requirement R1 (The generating unit up to either side of the GSU).</p> <p>2) The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Central Maine Power Company | | <p>Requirement 8.1.2 states; "Identity of the most limiting equipment of the Facilities" Concern that this would be applicable to each individual Normal and Emergency rating, and be required to be provided. The proposed revision has gone beyond the intent of the FERC Directive. Requirement 8.2 states; "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket." Unclear on what constitutes a "major city or load pocket". This text should be removed.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it</p> | | |

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| | | <p>easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> |
| <p>Rochester Gas and Electric Corp. John C. Allen</p> | | <p>Requirement 8.2 applies in the case of a "major city or load pocket". However, there is no definition or information on what would constitute a "major city or load pocket". Requirement 8.1.2, "Identity of the most limiting equipment of the Facilities", would be applicable to each individual Normal and Emergency rating, and be required to be provided. This goes beyond the intent of the FERC Directive.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the</p> | | |

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| <p>Summary Consideration above</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond “Normal” and “Emergency” ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| <p>New York State Electric & Gas Corp- Raymond P Kinney.</p> | | <p>Requirement 8.2 states; "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:" There is insufficient information on what would constitute a "major city or load pocket".</p> <p>Recommend removal of Requirement 8.2. Requirement 8.1.2 states; "Identity of the most limiting equipment of the Facilities" This requirement would be applicable to each individual Normal and Emergency rating, and be required to be provided. This proposed revision has gone beyond the intent of the FERC Directive.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments – the</p> | | |

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| <p>next most limiting equipment for a subset of Facilities. Requirement R8, Parts 8.1.2 and 8.2 are not duplicative of each other.</p> | | |
| <p>New York Power Authority William Palazzo</p> | | <p>Requirement 8.2. - "Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:"</p> <p>Need to clarify what constitutes a major city or load pocket. Requirement 8.1.2. - "Identity of the most limiting equipment of the Facilities" This would be applicable to each individual Normal and Emergency rating, and be required to be provided. Believe that this proposed revision has gone beyond the intent of the FERC Directive. Requirement 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments – the next most limiting equipment for a subset of Facilities. Requirement R8, Parts 8.1.2 and 8.2 are not duplicative of each other.</p> | | |
| <p>New Brunswick Power Transmission Corporation - Randy MacDonald</p> | | <p>Section 8.2:Load pocket or major city is unclear. S</p> |

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| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| <p>Public Utility District No. 1 of Snohomish County Snohomish County PUD No. 1</p> | | <p>Snohomish PUD agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a significant change. Therefore, with minor modification, the SDT adopted the proposed change.</p> | | |
| <p>Salt River Project</p> | | <p>SRP believes that the proposed language of R8.2 and 8.2.2 is ambiguous and does not</p> |

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| Organization | Yes or No ² | Question 1 Comment |
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| | | <p>make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for a Thermal limit of a Facility on another's system. SRP has provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. SRP believes this proposed language is clarifying in nature and not a substantive change. If this language is adopted by the drafting team we would vote in the affirmative for the proposed standard.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power</p> <p>Tacoma Public Utilities</p> | | <p>Tacoma Power is voting Negative and suggests changing the following two sub-requirements:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> |

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| | | 8.2.2. The Equipment equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Thank you for your consideration. |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| U.S. Bureau of Reclamation | | <p>The proposed language of parts 8.2, 8.2.2, and M8 is ambiguous and does not make clear the intent of the proposed Requirement 8, which is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, we have provided proposed alternative language for parts 8.2, 8.2.2, and M8 which we believe clarifies the intent, while not changing the actual requirements.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| MidAmerican Energy Co. | | The standards drafting team did not perform its defined function as the technical standards expert and developer by simply transferring FERC words from Order 693 into a |

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| Terry Harbour | | revised standard. NERC standards are to be concrete and measurable. Companies should not be held to violations for subjective standards. Therefore, the vague and ambiguous wording proposed in the FERC directive should be deleted and limited to the IROL language for 8.2 only as equivalent and superior to the FERC directive. If the drafting team feels compelled to address the additional FERC Order 693 words such as TTC limits, impeding generation, or impeding service to major load pockets or cities, then specific, measurable tests related to Section 215 such as impediments that could result in TPL standards violations beyond NERC category C conditions (or equivalent), instability, uncontrolled separation, or cascading should be developed and placed in the revised standards ratings. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Roger C Zaklukiewicz | | The terms in 8.2 are not well defined and subject to interpretation. 8.2 also appears to go beyond the FERC Directive. An immediate review after passage is certainly in order. |

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| | | <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> |
| <p>Southwest Power Pool Charles H Yeung</p> | | <p>There are outstanding technical issues that have not been addressed concerning the applicability to Load Pockets. Because of the parallel comment/vote schedule, we cannot support the proposed language until these issues are clarified.</p> |
| | | <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the</p> |

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| <p>Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> | | |
| <p>Tennessee Valley Authority</p> <p>Larry Akens;</p> <p>Ian S Grant;</p> <p>David Thompson;</p> <p>Marjorie S. Parsons</p> | | <p>TO Comments</p> <ul style="list-style-type: none"> o Is it intended that the TO is providing information to the TO in R8? o The reference to ‘new facilities’ in R8 and subsequent requirements should be considered for revision. Consider the revision to state “new facilities which are designed” or address new facilities separately. If these are future facilities, it is often difficult to know what some equipment ratings may be until they are designed. A conservative value may be assumed - a new line may be planned to be good for 1800A for example. What exact equipment (R8.1.2) is going to be the limit is unknown until the design is further into planning. With this in mind it is difficult in some cases to determine the exact facility rating (1810A or 1920A would both be acceptable to the initial planning) much less the next most limiting equipment for future facilities. |
| <p>Response: The FRSDT thanks you for your comment. Per Requirement R8 the requesting entity is restricted to Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s). Specifically for R8, Part 8.2 the requester must be from an entity that has the ‘authority’ over the Facility in question.</p> <p>The term “new Facilities” does not include Facilities that will be placed in service beyond the Operations Planning time horizon, which is the Time Horizon for Requirements R7 and R8.</p> | | |
| <p>Austin Energy</p> <p>Chelan County Public Utility District #1</p> <p>City of Austin dba Austin Energy</p> <p>City of Redding</p> <p>Orlando Utilities Commission</p> <p>Public Utility District No. 1 of Chelan</p> | | <p>We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative.</p> <p>In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding</p> |

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| County | | <p>generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>City of Austin dba Austin Energy Reza Ebrahimian</p> | | <p>We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment modifying R8.2:</p> <p>8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> <p>Supporting Discussion: The FAC-008-3 R8 requirement inappropriately only considers the next element’s thermal limit as being the ‘fix’ that potentially exposes the system to a greater reliability impact as follows:</p> <ul style="list-style-type: none"> o Total Transfer Capability considers the operation of multiple transmission components that appears to be confusing the single circuit and its series components with the definition of Facility. |

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| | | <p>o Limitation of a Total Transfer Capability and identifying a single element and its 'next most limiting component' ignores the intrinsic interaction/loading of other transmission elements within the system. In consideration of 'next most limiting element' identifying the thermal limit of an individual circuit ignores other non-thermal system limitations such as stability issues that may be on the cusp of exposure thereby inadvertently misleading the requestor to the false operation limit.</p> <p>Additionally: Under certain system conditions an element would reach its thermal limit just prior to the stability limitation. Communicating the 'next most limiting element' would give a false representation of the system's ability thereby jeopardizing reliability system. If only considering the series elements as the facility's limitations, dynamic studies and other non-thermal restrictions may impose limitations prior to the 'next' element's thermal limitation; this poses a greater reliability threat. If multiple parallel lines which are, through their combined operation, used in the determination of a IROLs, Total Transfer Capability or major load/cities and should be considered as a facility. Then identifying the next limiting thermal element rating may not necessarily be achievable as system dynamic limitations may pose the 'next' limitation and are not necessarily dependant on a thermal limit of the elements for the defined facility.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Lower Colorado River Authority</p> <p>MEAG Power</p> <p>Municipal Electric Authority of Georgia</p> | | <p>We agree the R8 requirement addresses the Commission's directive, however we are seeking only clarification of the standard's language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer</p> |

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| Orlando Utilities Commission | | <p>Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> <p>Please note that 8.2 and 8.2.2 have been modified in this comment, but the editor does not allow strikeouts and underlines, so please read carefully.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Platte River Power Authority</p> <p>Pete Ungerman</p> <p>Carol Ballantine</p> <p>John C. Collins</p> | | <p>We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment:</p> <p>Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.1. Identity of the existing next most limiting equipment of the Facility</p> <p>8.2.2. The Equipment equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |

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| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Modesto Irrigation District Spencer Tacke</p> | | <p>We are voting NO because Section 8.2 is unclear as to what "impeding generator deliverability, or impeding service to a major city or load pocket:" means, or how it can be interpreted. Also, it is not clear why just a "Thermal Rating" is considered, as protective relay settings may be the limiting element and basis of the rating in question. Thank you.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |
| <p>Idaho Power Company Ronald Schellberg</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for</p> |

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| Organization | Yes or No ² | Question 1 Comment |
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| | | <p>misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot:</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Pacific Gas and Electric Company - Richard J. Padilla</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 is ambiguous and appears to contradict the basic rationale for FAC-008 and FAC-009 for generation assets. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. FAC-008 requires that entities address a normal and an emergency rating.</p> <p>In addition, per equipment standards, some equipment has short time overload capability and these capabilities are also address in the FAC rating standards. Therefore, for generation the NERC identified scenarios fall into one of two categories. 1) the next most limiting factor is already address in the emergency or short-time rating, or 2) entities are</p> |

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| | | <p>allowing facilities to exceed ratings and get into operating difficulty, which is a violation of the standard. If this defined scenario is applicable to transmission elements, limit the applicability for requirement 8.2 to transmission only.</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8, Part 8.2 only applies to transmission Facilities that a Generator Owner may own. It is not applicable to generating Facilities covered under Requirement R1.</p> | | |
| <p>Platte River Power Authority-Terry Baker</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> <p>End of proposed comment</p> <p>WECC stakeholders reviewed the proposed Standard, FAC-008-3, and concluded that the current wording of parts 8.2 and 8.2.2 is ambiguous and without the proposed clarifying language could lead to confusion related to the intended purpose of this standard. Based on the Purpose/Industry Need on the NERC website which in part states: “In order to determine facility ratings, entities must identify the most limiting component that comprises</p> |

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| | | <p>the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event.” Without the suggested clarification for parts 8.2 and 8.2.2, concerns exist that it is unclear that the intent is to identify the equipment’s next Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. A complete copy of the Facility Ratings standard and associated materials can be viewed at: http://www.nerc.com/filez/standards/Project_2009-06_Facility_Ratings.html If you determine that you will vote NO, but do not submit the suggested comment above, it is important that you provide a comment with your vote indicating the reason(s) why you voted NO and suggested modifications that would make the standard acceptable. In addition to the ballot of FAC-008-3, a non-binding poll of the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) is being conducted. WECC staff is not aware of any significant concerns related to the proposed VRFs and VSLs and recommends an affirmative vote for the VRFs and VSLs. If you determine that you will vote NO on the VRFs and VSLs it is important that you provide a comment with your vote indicating the reason(s) why you voted NO and suggested modifications that would make the VRFs/VSLs acceptable All WECC entities that are registered in the Facility Ratings Ballot Pool are urged to cast their ballots prior to the close of the ballot period.</p> |

Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”.

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| <p>The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Western Electricity Coordinating Council Colorado Springs Utilities Pacific Gas and Electric Company Public Utility District No. 2 of Grant County Sacramento Municipal Utility District Seattle City Light U.S. Army Corps of Engineers</p> | | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another's system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.</p> <p>8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester's Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:</p> <p>8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| <p>Independent Electricity System Operator</p> | | <p>While the language of Requirement 8, Part 8.2 comes out of the Order 693, paragraph</p> |

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| Kim Warren | | 756, we believe the following wording can be improved. In particular, the reference to impeding service to a major city or load pocket is troublesome since there lacks general guideline or definition of what constitutes “a major city or load pocket”. We therefore suggest this part be revised to: Revise: “... that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket.” to: “... that the requester has identified is part of an Interconnection Reliability Operating Limit or other System Operating Limit, or limits Total Transfer Capability or generator deliverability under conditions specified by the requesting entities.” |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Xcel Energy, Inc.- Gregory L Pieper;Michael Ibold | | Xcel Energy does not feel that the proposed revisions, as drafted, meet the intent of FERC’s directive and do not benefit reliability. Additionally, the information that would be provided to a requester would either be rendered useless or inappropriately used in maintenance, planning and operational activities. Please see our full set of comments for more detail. |
| <p>Response: The FRSDT thanks you for your comment. Comments provided in Question 5.</p> | | |
| Northeast Power Coordinating Council | No | 8.2 should be deleted. What it requires goes beyond what is mandated in the FERC Directive. However, regarding the language in 8.2, major city, and load pocket must be defined. Those terms are vague, and subject to interpretation. 8.1.2 should be revised to read: Identity of the most limiting equipment of the Facilities |

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| | | applicable to each individual Normal and Emergency rating required to be provided. |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics contained in Requirement R8, Part 8.2.</p> <p>The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above. Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> <p>8.1.2: The SDT believes the entire FAC 008-3 does not require any information beyond “Normal” and “Emergency” ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2. Adding the verbiage to Part 8.1.2 would therefore be redundant.</p> | | |
| Pepco Holdings Inc | No | Although the proposed R8 contains the “words” from the FERC directives, the requirement does not directly increase reliability in real time, may cause operational confusion and is more appropriately addressed in the long term planning function not in the Operations Planning time horizon. For either the 1st limiting component or the next, both should be by request only. If the entity needs it let them request. In many cases the entity will never use the component data in operations. The actual piece of equipment that limits a facilities rating does not enter into operators decisions made in the operational time frame. The system limits are either an IROL or an SOL. Other procedures call for the operators to monitor the normal ratings and the contingency limits (or IROLs or SOLs) and take actions prior the flows reaching those limits. If the limits are violated due to a multiple facility trip there is a specified time frame to correct the violation. Use of the “next” most limiting |

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| | | <p>piece of equipment is not practical or appropriate in real time operations. The requirement uses terms that are not defined: deliverability, major city and load pocket. Although that is the words used by FERC in Order 693, they do not conform to existing terminology and methodology in operating the BES. Maybe the situations when a request could be made for the second limit/rating ought to be any IROL, SOL or BES facility limitation.</p> |
| <p>Response: The FRSDT thanks you for your comment. The identification of the most limiting equipment in a Facility (8.1.2) only needs to be provided, as scheduled by a requester. This Standard does not require any entity to request such information. The Standard does not create an obligation on an entity for information that has not been requested by a requester defined in Requirement R8. The SDT does not disagree with the statement of use of these data in real-time. Given that the data subject to Requirement R8, Part 8.2 the provider has 30 days to supply substantiates that these data would not be expected for use in real-time.</p> <p>The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is “under the Requester’s authority”, minimizing interpretation issues.</p> | | |

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| Public Service Enterprise Group | No | <p>Comment #1:PSEG suggest numbering the 4 scenarios in section 8.2, similar to how it was numbered in the FERC paragraph 756. Also, the FERC paragraph used the word “causing” but the standard used the word “having”. Therefore it would read as: “Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as causing one of the following 1. An Interconnection Reliability Operating Limit (IROL); 2. A limitation of Total Transfer Capability, 3. Impeding generator deliverability, or; 4. Impeding service to a major city or load pocket.”Comment #2:Would the requesting entity be allowed to ask for this data at each of the registered entity’s facilities at the same time, or would it only be one facility at a time?</p> |
| <p>Response: The SDT thanks you for this recommendation. It has been applied.</p> | | |
| Manitoba Hydro | No | <p>It is unclear which facilities the additional thermal rating information will be required for. FERC asked for additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets. It is open to interpretation whether a facility is actually an impediment to generator deliverability or an impediment to load serving: -Should one perform n-1 analysis and determine whether a thermal limit is violated? Or is n-2 analysis necessary? -Is a radial feed to a generator an impediment to delivery? -What constitutes a major city or load pocket? One would assume at least 300 MW to be consistent with some other NERC reporting requirements. Requirement R8 should be rewritten to clarify which facilities this additional thermal rating information will be required for. Perhaps making it a bright line standard (for example facilities greater than 300 kV) would be a simpler approach.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term “impeding generator deliverability” generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on</p> | | |

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| <p>the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Pacific Gas & electric Company | No | <p>Please consider following revisions:8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits USE OF the Requester's Facilities by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The equipment's Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words "Facilities under the Requester's authority" rather than the commenter's term "Requester's Facilities". The term "Requester's Facilities" could be interpreted as having an ownership relationship. The SDT used the term "Facilities under the Requester's authority" to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| We Energies | No | <p>R8 applies only to Generator Owners subject to R2, that is, those who own the GSU and high-voltage leads to the transmission interconnection point. This Requirement needs to be clarified to indicate whether it applies only to the equipment between the GSU and the transmission interconnection point, or if it applies to all the equipment between the generator and the interconnection point.</p> |
| <p>Response: The FRSDT thanks you for your comment. The clarity that you suggest is already contained in R1 and R2 and the FRSDT does</p> | | |

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| not believe that additional verbiage in R8 is necessary. | | |
| IRC Standards Review Committee | No | Requirement 8.2 goes beyond what is mandated in the FERC Directive. Knowledge of these additional ratings is currently required through a collection of data in other IRO/TOP/TPL Standards. In addition Requirement 8.2 introduces the terms major city, and load pocket. These terms are not defined and would be subject to interpretation. This would result in a request for interpretation or a compliance application notice. If the requirement is retained, 8.1.2 should be revised to read: Identity of the most limiting equipment of the Facilities applicable to each individual Normal and Emergency rating required to be provided. However, as stated, this is a redundant requirement. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| New York Power Authority – Arnold J. Schuff | No | Requirement 8.2. - Need to clarify what constitutes a major city or load pocket. Requirement 8.1.2. - Believe that this would be applicable to each individual Normal and Emergency rating thus required to be provided. Believe that the proposed revision has gone beyond the intent of the FERC Directive. |

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| | | Requirement 8.2.2. - should state "The equipment's Thermal Rating" |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> <p>Requirement R8, Part 8.2.2 was modified to use the phrase, "The Thermal Rating for. . ."</p> | | |
| Brazos Electric Power Cooperative | No | See response to Question 5. |
| <p>Response: The FRSDT thanks you for your comment. See response to Question 5.</p> | | |
| Ameren | No | The clarification from the Commission seems to require the additional rating and limiting equipment only for the specific facilities related to 1) IROL, 2) TTC, 3) generation deliverability, or 4) transmission service to municipals or load pockets. Therefore, if this must be included, we believe that Requirement R8.1.2 should be removed from R8.1 and included in R8.2. |
| <p>Response: The FRSDT thanks you for your comment. FERC Order 693 paragraph 693, requires the identification of the most limiting</p> | | |

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| <p>equipment.The commission’s proposed modification would require identifying and documenting the limiting component for all facilities....” Hence the need for Requirement R8, Part 8.1.2. The commenter should note that this Standard does not create an obligation to provide data absent a schedule to provide such information from a Requester. Therefore, if there is no request, there is no obligation.</p> | | |
| Indeck Energy Services | No | <p>The FERC order addresses limiting elements for different time periods, continuous versus short term. R8 is drafted based upon the diagram in the printed comment form which misses FERC’s point. At either the continuous duty period (eg 24 hours) or at the emergency (eg 4 hour) duty period, the limiting element will always limit the equipment. The FERC order identifies the difference between the E3 limiting in the continuous duty period and E2 in the emergency duty period. And if the duty period was further modified, such as to 15 minute duty period, then a different element such as E1 might be limiting. R8 doesn't grasp FERC's issue. An IROL or other analysis would seem to be for a different period than what some TO's or GO's would rate their facilities at based upon R2. R8 should define in the Request to the TO or GO, what duty period is relevant for the particular condition that is being analyzed (eg 15 minutes or 4 hours) and request a rating for that duty period.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FERC Order ‘only’ requires the identification of, and the corresponding rating of, the next most limiting equipment for a subset of Facilities, and if requested by an entity for which that Facility is under its authority. The SDT believes that Requirement R8, Part 8.2 meets the intent of this FERC Order.</p> | | |
| SRP | No | <p>The language of requirement R8.2 seems to allow a utility to wait until a request is received to prepare the information. However, if a neighboring utility asked for bulk electric system data, the 30 calendar day time limit would not be enough.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT recommends a minor modification of the language in Requirement R8, Part 8.2. The SDT used the term “Facilities under the Requester’s authority” to avoid potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester. It is envisioned that studies have been done that provide the information under the requirement. The FRSDT does not believe that additional studies will be required to provide this information.</p> | | |
| SPP Reliability Standards Development | No | <p>The order mentions that the increase in rating also should be provided along with the second most limiting element rating.</p> |

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| <p>Response: The FRSDT thanks you for your comment. Agreed, however Requirement R8, Part 8.1 requires the Facility Rating, and Part 8.2 requires the rating for the subset of Facilities not considering the most limiting equipment. The difference between those values is the 'increase'.</p> | | |
| Southern Company Generation (SCG) Technical Services | No | The R8 requirement does reflect the Directive however we believe that item (3) should be limited to generation having firm transmission service. Proposed change: 8.2.1. If a Facility has a shorter term rating higher than its continuous rating such that another piece of equipment in the Facility would become the most limiting in the shorter term then the identity of the existing next most limiting equipment of the Facility 8.2.2. If the condition in 8.2.1 exists then provide the Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Otherwise indicate to the requestor that the limit provided in 8.1 applies. |
| <p>Response: The FRSDT thanks you for your comment. The language of R8 has been revised to provide better clarity regarding the information requested and the entities who can request it. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Southern Company Transmission | No | The R8 requirement does reflect the Directive however we believe that item (3) should be limited to generators who have firm transmission service. We also have concerns over the undefined terms used in item (4) "major cities" and "load pockets". Also see question 5 comments. Proposed change 8.2.1. If a Facility has a shorter term rating higher than its continuous rating such that another piece of equipment in the Facility would become the most limiting in the shorter term then the identity of the existing next most limiting equipment of the Facility 8.2.2. If the condition in 8.2.1 exists then provide the Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1. Otherwise indicate to the requestor that the limit provided in 8.1 applies. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to</p> | | |

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| <p>erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>The language of R8 has been revised to provide better clarity regarding the information requested and the entities who can request it. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| Pacific Northwest Small Public Power Utility Comment Group | No | <p>The SDT stated in the recent webinar that they did not consider R7 and R8 to be onerous. Data requests would be infrequent and for specific facilities. The comment group disagrees, since every audit consists of a full data request for all actively monitored standards. Affected entities may be expected to provide the data for every facility at each audit. Please add language to the two requirements indicating that data requests are only for operating the interconnected BES reliably, and not for compliance assessment.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT cannot speak to compliance and audit issues for this standard. The requirements dictate that entities provide information upon request from an RC, TP, TOP, TO or PC. If there are no requests from these entities, then there is no data to be supplied. Auditors are not included in the list.</p> | | |
| Bonneville Power Administration | No | <p>We believe we understand the intent of the requirement, but do not believe that it is adequately communicated. Therefore, we are suggesting alternative language for R8.2 and R8.2.2 that if included would allow us to vote yes during the next ballot. Revised language:8.2 Within 30 calendar days (or a later date if specified by the requesting entity), for any requested Facility that has equipment with a Thermal Rating that limits the requesting entity’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential</p> | | |

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| <p>confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| BC Hydro and Power Authority | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| Seattle City Light | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for</p> |

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| | | <p>misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |
| Xcel Energy | No | <p>Xcel Energy does not believe that the proposed Requirement 8 meets the intent of Paragraph 756 of Order 693, nor is it related to reliability. We believe FERC’s directive was focused on the “prior identification of this second limiting component” in order to allow entities an opportunity to take mitigating actions that may help avoid events that could lead to cascading. This would indicate to us that FERC wanted to see a planning requirement, which would then potentially lead to maintenance and operational subsequent actions. As drafted, the requirement does not encourage proactive planning-related activities. In practice, planning entities may request this information and perform such proactive assessments. But, there is no requirement for them to do so, as we believe FERC had intended.</p> <p>The FRSDT believes that entities that request the information in R7 and R8 have intentions of performing studies. You are correct that there is no requirement to run additional studies. The FRSDT has met the language of the FERC directive.</p> |

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| | | <p>Furthermore, from a system operations perspective, there is no reliability benefit gained from knowing the 2nd most limiting element and its rating. The 1st most limiting factor must be respected and the system must be operated in a manner that doesn't violate that limit. Knowledge of the 2nd most limiting factor, or any other limiting factor, does not affect the operation of the system. If the intent of this requirement was to focus on the planning of the BES, it is misguided and could lead to erroneous assumptions. In paragraph 76 of its September 16, 2010 Order Denying Rehearing, FERC recognizes that facility ratings can change under different operating conditions. Indeed, the discussion centers around the fact that different equipment can use different time periods to determine the ratings, i.e. 4 hour, 8 hour, or ½ hour). The standard only asks for an ambiguous next most limiting element. On the Xcel Energy systems, there are 4 ratings that are considered; summer normal, summer emergency, winter normal and winter emergency. It is not unusual for different pieces of equipment to be the limiting (or 2nd most limiting) element depending upon the rating under investigation. To determine the increase in a facility rating if the most limiting element is no longer in place, one would need to investigate all four ratings. In order to come up with a meaningful increase in a facility's rating, a more detailed study would be required, and simply identifying the 2nd most limiting element and that element's rating may not give an accurate picture of the system. Therefore, the requestor would also need to identify the time period that is under investigation (summer, winter, normal, continuous, emergency or short-term), and would require information around how the requested rating was developed. In addition, further consideration is needed regarding the term "next most limiting element." For instance, if your facility contains 3 CTs that all have the same equipment rating, does the "next most limiting element" mean the second of 3 CTs (in this example)? Or, does it mean the element after any and all equipment that currently limits the rating of the facility? Another example could be a jumper and a switch, both with the same equipment rating. Does the "next most limiting element" mean the switch (assuming the jumper was listed as the most limiting element)? Obviously, if multiple pieces of equipment have the same rating, then providing another piece of equipment with the same rating doesn't provide any new information. However, only providing the equipment with the next highest rating could seriously understate the work involved in getting to that higher rating. There could be multiple pieces of equipment that must be replaced to get to a higher rating.</p> <p>In order to determine "most limiting" equipment for a Facility, an entity must know which equipment comprises the facility and what the respective limitations are. Since this information has already been determined, an entity need simply review its records and</p> |

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| | | <p>supply the information to the requestor for the specified Facility.</p> <p>Likewise, further consideration and refinement is needed for the terms “major city” and “load pocket”. Depending upon the perspective of the various parties involved, what constitutes a major city or load pocket could greatly vary. Additionally, there could be a city or load pocket on a radial line that has no effect whatsoever on the BES. Instead, we recommend defining a “major city” or “load pocket” in quantitative terms such as a certain population or megawatts, as is the case in EOP-004-1.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | | |
| BGE | Yes | |
| Clark Public Utilities | Yes | |

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| Dominion | Yes | |
| East Kentucky Power Cooperative | Yes | |
| Georgia Transmission Corporation | Yes | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| New Harquahala Generating Co. | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| South Carolina Electric and Gas | Yes | |
| Tri-State G&T | Yes | |
| United Illuminating Company | Yes | |
| GDS Associates | Yes | <p>a. We do agree that the proposed requirement R8 addresses FERC directive from Order 693, Paragraph 756, however we disagree with the language used within the requirement in several instances as follows:</p> <ul style="list-style-type: none"> o The applicability to the GO should not be stated in parenthesis. We suggest rewording such as “Each Transmission Owner and Generator Owner shall provide [...]” <p>The style incorporated is necessary to indicate that this only applies to a GO who has Facilities applicable to Requirement R2. R8 is not applicable to all GOs.</p> |

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| | | <p>o The information provided by the GO and TO is based upon their own process and schedule and may not coordinate with the request from the RC, TP, etc. FR SDT explained that “If one party declines to agree to a schedule, then both parties could be in violation of the requirement. If a requesting entity imposes unreasonable schedules for obtaining the ratings, the responding entity should have recourse through NERC and/or FERC”, however we believe that rather to pile up the entities found noncompliant due to the schedule incompatibility, the standard shall be adjusted to permit reasonable timeframes.</p> <p>If both parties agree to an alternate schedule, then this should be documented and provided as evidence of compliance with the requirement.</p> <p>o It is unclear why two most limiting pieces of equipment must be identified. If a Generator or Transmission Owner must notify and provide its Facility Ratings for new or re-rated facilities as required in R7 what purpose does the second limiting factor have?</p> <p>Please refer to the background information provided with the posting of the standard. It explains the reliability benefits of the requirement.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | | |
| Exelon | Yes | <p>Although Requirement R8 addresses the FERC directive, this proposed requirement appears to provide no reliability benefit. The current standard requires that all ratings “shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility”. The proposed Requirement R8 specifies that if requested, a new facility rating based on the second most limiting component be provided even though an existing facility rating based on the most limiting component already exists. If the transmission system is operated utilizing the facility rating based on the second most limiting component, operators could exceed the equipment rating of the first most limiting component and damage that piece of equipment as its rating capability would be exceeded. If the facility rating based on the second most limiting component is intended to be used by operations support staff so they could evaluate the need for a shorter duration rating for a future planned event, it still would have no value. If a shorter duration rating needs to be established, then simply knowing the rating of the second most limiting component of an existing rating is meaningless because it is based on a different duration.</p> |

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| | | When determining a facility rating all component ratings comprising the facility must be considered based on the planned rating duration, not just the second most limiting component. Thus the confusion and possible reliability harm caused by providing a facility rating based on the second most limiting component shows that knowing the second most limiting component for the current ratings has no value. |
| <p>Response: The FRSDT thanks you for your comment. Within the Comment Form (Reliability Objective Discussion), it states:“The directive was not intended to provide the System Operator with information to change ratings in real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause</p> | | |
| American Transmission Company, LLC | Yes | ATC proposes revising the wording of Requirement R8 to more carefully refer to the Thermal Ratings of the requested Facilities: (see changes below)R8.1 . . .R8.1.1 Thermal Ratings for the requested FacilitiesR8.1.2 Identify the limiting equipment associated with the Thermal Ratings of the requested FacilitiesR8.2 . . .R8.2.1 Next Thermal Ratings for the requested Facilities beyond the most limiting equipmentR8.2.2 Identify the limiting equipment associated with the next Thermal Ratings of the requested Facilities These revisions are proposed by ATC because a Thermal Rating for a Facility could be based on more than one piece or type of equipment. For example, a Facility could have two switches with the same rating or two different items (breaker and relay) with the same rating. Conversely, the piece or type of equipment associated with the Thermal Rating and the next Thermal Rating could be one single item. For example, the equipment could be the line conductor, but different sections of the line conductor could have different ratings due to different ground clearances, wind exposure, or conductor types. |
| <p>Response: The FRSDT received many comments concerning the proposed requirement and its intent. We have revised 8.2.2 to “The Thermal Rating for the...</p> | | |
| The Valley Group, a Nexans company | Yes | In December 2010, NERC Smart Grid Task Force published Report “Reliability Considerations from the Integration of Smart Grid”, and in it, there is an excerpt on “Integration of Smart Grid Technology into the Bulk Power System”, Section 3, page 12. In this excerpt, it is stated that Smart Grid provides the ability to create an overarching, coordinated and hierarchical approach to automation, control and effectiveness. Among examples of smart grid technologies, Dynamic Thermal Circuit Rating (DTCR) devices |

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| | | <p>were numbered. Although the objective of NERC Project 2009-06 is to identify the limiting component(s) and next limiting component(s) for all critical facilities, and not about Smart Grid integration; however, it should be beneficial to state a need for smart grid technologies integration, especially DTCR devices, into this NERC project. While the paramount importance is to maintain the reliability and integrity of the bulk power system, it is of equal importance to introduce reliability and economic benefits that Smart Grid technologies are bringing. Careful planning, coordination, and possibly review of the current Facility Rating Methodologies should be encouraged and introduced at present time. Static transmission line ratings, and static ratings of power system equipment in general, belong to past practices, and entities should be encouraged to embrace Smart Grid into their systems.</p> |
| <p>Response: Thank you for your comments. These may be considered with the next revision to this standard.</p> | | |
| PacifiCorp | Yes | <p>PacifiCorp acknowledges that proposed Requirement R8 addresses the FERC directive in Paragraph 756. However, the Standards Drafting Team carried over from Order 693 some ambiguous language that may require clarification. Paragraph 756 directs that NERC include language requiring entities to identify the next most limiting component for facilities for which the thermal rating causes an impediment to service to “major cities or load pockets.” Requirement R8.2 necessarily contains this requirement as directed by the Commission. It is unclear to PacifiCorp what the Standards Drafting Team would define as a “major” city. Also, it is unclear whether the term “major” is intended to apply to load pockets as well and, if so, what is considered a “major” load pocket. Regardless of whether “major” applies to load pockets, further clarification also is needed regarding what is meant by the term “load pocket.” PacifiCorp requests modification of Requirement R8 to clarify this element.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for</p> | | |

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| <p>Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |
| American Electric Power | Yes | See response to Question 5. |
| Dynergy Inc. | Yes | We agree proposed R8 addresses the FERC directive; however, by including GO in R8, R7 and R8 seem redundant with respect to the GO. Suggest deleting R7 or include "subject to R1" after Generator Owner in R7. Also, R8 requires a TO to provide information to itself. Suggest deleting TO as a recipient from itself. |
| <p>Response: The FRSDT thanks you for your comment. Requirement R1 requires that the Generator Owner "have documentation for determining Facility Ratings". Requirement R7 requires the generation owner to "provide Facility Ratings...." There are subtle but distinct differences between R7 and R8 with respect to the GO.</p> | | |
| MISO Standards Collaborators | Yes | <p>We propose revising the wording of Requirement R8 to more carefully refer to the Thermal Ratings of the requested Facilities: (see changes below)</p> <p>R8.1 . . .R8.1.1 Thermal Ratings for the requested Facilities</p> <p>R8.1.2 Identify the limiting equipment associated with the Thermal Ratings of the requested Facilities</p> <p>R8.2 . . .R8.2.1 Next Thermal Ratings for the requested Facilities beyond the most limiting equipment</p> <p>R8.2.2 Identify the limiting equipment associated with the next Thermal Ratings of the requested Facilities</p> <p>These revisions are proposed because a Thermal Rating for a Facility could be based on more than one piece or type of equipment. For example, a Facility could have two switches with the same rating or two different items (breaker and relay) with the same rating. Conversely, the piece or type of equipment associated with the Thermal Rating and the next Thermal Rating could be one single item. For example, the equipment could be the line conductor, but different sections of the line conductor could have different ratings due to different ground clearances, wind exposure, or conductor types.</p> |

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| | | <p>For R8.2, we have four areas of concern for the second most limiting piece of equipment of a Facility. These four items are, "Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket" and they are the exact words that the commission used in FERC Order 693, paragraph 756. The SDT should apply the "equally efficient and effective" rule of thumb and clarify what "impeding service to a major city or load pocket" means. Furthermore paragraph 771 states that "... (3) for each facility, identify the limiting component and, for critical facilities, the resulting increase in rating if that component is no longer limiting". The Commission uses the word "critical facilities". We recommend that the SDT rewrite R8.2 to read; 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested critical Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket. Entities have a list of these "critical facilities" and this will ensure that Facility Ratings are used in the reliable planning and operation of the Bulk Electric System.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> | | |
| ACES Power Marketing | Yes | <p>While it likely will satisfy the FERC directive, proposed Requirement R8 is ambiguous, leaves much room for interpretation, and causes some confusion. For instance, when would an IROL be expected to have a thermal limit? Violations of IROLs by definition can</p> |

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| | | <p>expose a widespread area to cascading outages, uncontrolled separation or instability. When does exceeding a thermal limit ever do this? Since TTCs fluctuate based on system conditions, what studies would the limiting TTC target? Studies used to support posting ATCs/AFCs? Near-term seasonal assessment studies? Long-term transmission planning studies? Many TSPs have automated tools that recalculate TTC every hour for the next 168 hours. It would not make sense to use these hourly TTCs as they change too rapidly but we are left wandering what the drafting team had in mind. What does impeding generator deliverability and impeding service to a major city or load pocket mean? We assume that the drafting team means limits deliverability or service. Impede is a poor choice of words as all lines have impedance and, thus, impede service and deliverability. Use of a major city or load pocket is ambiguous and should be avoided. What constitutes a major city? The top 10 largest cities by population in the U.S.? The top 100 largest cities? What constitutes a large load pocket? 100 MW of load, 200 MW of load? By using ambiguous terms, there will surely be unequal enforcement of the requirement for several years until those details are worked out in the audit and enforcement processes. Now is the time to resolve these ambiguities.</p> |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> | | |

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| Organization | Yes or No ² | Question 1 Comment |
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| National Grid | Yes | <p>While we agree R8 meets the FERC Directive, we believe there are things that can still be done to improve the requirement.</p> <ol style="list-style-type: none"> 1. Eliminate requirement R 8.2 (reproduced below). There is a lot of ambiguity in the term "major city or load pocket" and hence the proposal to completely eliminate the requirement. 2. For R 8.1.2 "identity of the most limiting equipment of the Facilities" National Grid believes this would be applicable to each individual Normal and Emergency rating, and be required to be provided. We believe this proposed revision may have gone beyond the intent of the FERC Directive. |
| <p>Response: The FRSDT thanks you for your comment. The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part 3.4.2.</p> | | |
| Niagara Mohawk (National Grid Company) | Yes | <p>While we agree R8 meets the FERC Directive, we believe there are things that can still be done to improve the requirement.</p> <ol style="list-style-type: none"> 1. Eliminate requirement R 8.2 (reproduced below). There is a lot of ambiguity in the term |

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| Organization | Yes or No ² | Question 1 Comment |
|---|------------------------|---|
| | | <p>"major city or load pocket" and hence the proposal to completely eliminate the requirement.</p> <p>2. For R 8.1.2 "identity of the most limiting equipment of the Facilities" RSC believes this would be applicable to each individual Normal and Emergency rating, and be required to be provided. We believe this proposed revision may have gone beyond the intent of the FERC Directive.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT received many comments concerning the proposed requirement and its intent. Many stakeholders believe that more clarity is necessary. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. While it may vary between different Planning Coordinators and/or Reliability Coordinators, the term "impeding generator deliverability" generally refers to the transmission facility, which is limiting the ability to deliver the generation output to the aggregate load. The FRSDT intended for impacted entities responsible for power system reliability to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. The FRSDT believes that this language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement. A requester cannot ask for Ratings information for every Facility of another entity through Requirement R8, Part 8.2 – a requester may only ask for Ratings information for those Facilities which are impacted by one of the four conditions, which the requester has presumably determined through studies or actual operational data. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Also Requirement R8, Part 8.2 has been modified to make clear that the data being requested from the owner concerning a thermal rating of equipment within a Facility, must be from an entity for a Facility that is "under the Requester's authority", minimizing interpretation issues.</p> <p>The SDT believes the entire FAC 008-3 does not require any information beyond "Normal" and "Emergency" ratings as per Requirement R2, Part 2.4.2 and Requirement R3, Part3.4.2.</p> | | |

2. Do you agree with the proposed Violation Risk Factor, Time Horizon and Violation Severity Levels for requirement R8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: Most commenters agree with the proposed VRFs, VSLs and Time Horizons. Some commenters had concerns with the use of percentages in the VSLs. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found. Some commenters suggested that the VRF for R8 should be lower. The VRF for R8 matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF. Other commenters suggested that the Time Horizon for R8 should be Long-term Planning. The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.

Minor revisions were made to the VSLs for R7 and R8 as follows:

1. The first VSL under the Lower category needs the words “and including” inserted prior to the “15 calendar days” language. The last part of the sentence should state “but missed meeting the schedules by up to and including 15 calendar days. This extra language would further clarify that if an entity reported its Facility Ratings on the 15th day, they would fall under the “Lower” VSL.
2. For the VSLs which incorporate percentages, the VSL percentages are not inclusive. The words “or equal to” should be incorporated into such VSLs. For example, the second VSL under the Lower category should state “The responsible entity provided less than 100%, but not less than or equal to 95%...” This type of change should be incorporated in all four of the VSL categories.

| Organization | Yes or No ³ | Question 2 Comment |
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| FirstEnergy Solutions | | FE generally finds the VSLs acceptable as written. We are abstain due to concerns we have with the proposed Requirement R6.4 and believe revision/clarifications are needed which may require conforming |

³ When this column is blank, it indicates a comment that was submitted with a ballot but not via the electronic comment form. Some commenters submitted duplicate comments with their ballot and via the electronic comment form; in this case, the Yes or No column is marked with their response in the electronic comment form.

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| Organization | Yes or No ³ | Question 2 Comment |
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| | | changes to the VSLs. |
| <p>Response: The FRSDT thanks you for your comment.</p> | | |
| <p>Manitoba Hydro Joe D Petaski Greg C. Parent S N Fernando Daniel Prowse</p> | | <p>-The VRF of Medium is not appropriate for Requirement 8 and should be set to Lower.</p> |
| <p>Response: The FRSDT thanks you for your comment. The VRF for R8 matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| <p>GDS Associates</p> | <p>No</p> | <p>a. Development of a percentage based Violation Severity Level seems arbitrary and capricious. There is no assistance provided in understanding what constitutes a required Rating information submittal. Smaller projects with less equipment will be penalized greater.</p> <p>The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found.</p> <p>b. We do not see how the percentages on which the responsible entities have missed to provide the required information to the requesting entities can be estimated.</p> <p>The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requestor may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement.</p> |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--|
| | | <p>c. We can agree on the proposed number of days used in the VSLS criteria, but not if the schedule is entirely decided by the requesting entity.</p> <p>The requirement is written such that the requesting entity specifies when they need the information. If an entity is not able to meet the schedule, it is expected that the two entities will come to a mutual agreement on a schedule.</p> |
| <p>Response: The FRSDT thanks you for your comment.</p> | | |
| Luminant Generation Company LLC | No | <p>Comments submitted on Project 2009-06: Facility Ratings in. Overall, clarity needs to be provided on the standard prior to being able to support the proposed VRF and VSLs.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see the proposed clarifying revisions in the Summary Consideration for Question 1.</p> | | |
| Seattle City Light | No | <p>Comments submitted: Copied below for your info: We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot. 8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change. The SDT recommends the use of the words “Facilities under the Requester’s authority” rather than the commenter’s term “Requester’s Facilities”. The term “Requester’s Facilities” could be interpreted as having an ownership relationship. The SDT used the term “Facilities under the Requester’s authority” to avoid that potential confusion and also ensure that there is a direct functional relationship (e.g. Planning Coordinator has a planning relationship, Transmission Operator has an operating relationship) between the Facility and the requester.</p> | | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--|
| Ontario Power Generation Inc. | No | <p>Consistent with my comments on 2009-06 (FAC008 and FAC009), these comments are equally applicable here, since the VSLs and VRFs refer to the Requirements that require deletion or modification:</p> <ol style="list-style-type: none"> 1. OPG disagrees with the requirement to provide "Limiting Equipment" information as specified in Requirement 8.1.2. It remains unclear as to what reliability purpose would be served by the provision of this information. Maintenance of this type of information would be onerous, and particularly in light of its questionable utility, OPG sees no need to undertake such work. 2. For the same reasons listed above, Requirement 8.2 is completely unnecessary. 3. All other elements of the standard that refer to either of the above Requirements need to be deleted or amended. |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The background material provided with the posting of the standard. During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> | | |
| Consolidated Edison Co. of New York | No | <p>RELIABILITY CONCERNS: (1) Key terms and phrases are undefined, including “most limiting,” “next most limiting,” “impediment,” “impediment to generation deliverability,” “impediment to service” and “major cities or load pockets.” (2) The event graph provided along with the proposed standard fully illustrates the complication/confusion created by the proposed wording. There is a different Element and rating reported depending upon the event duration used. Each element in the graph may be the “most limiting” or “next most limiting” Element at any point, depending upon the duration selected for reporting purposes. This problem needs to be addressed. (3) There is no Guidance documents to clarify the reliability standard’s requirements and meaning. COMMENTS WITH QUESTIONS: 1. The drafting team needs to define the following terms a. “most limiting,” b. “next most limiting,” c. “impediment to generation deliverability,” d. “impediment to service,” and e. “major cities or load pockets” 2. The drafting team needs to provide guidance on the meaning, scope and use of the word “impediment” as it is used in the terms “impediment to generation deliverability,” and “impediment to service.” a. What are the limitations of any “impediment,” e.g., 0.1%, 1%, 5% or 10% of what</p> |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|---|
| | | <p>measure(s), the Facility Rating? b. Is there a dead band within or threshold below which the impediment is not material, e.g., +/-5%, and beyond which it is material? c. What is the reach of any impediment, e.g. within a substation, 1 mile, 10 miles (across a load area), 100 miles (across an interface), across a Balancing Authority (NYISO), or 1,000 miles (across the Eastern Interconnection)? 3. The drafting team needs to provide guidance on the meaning, scope and use of the phrases “most limiting” and “next most limiting” Facility or Element. a. What are the timeframe (refer to event graph), rating type(s) and duration sought, e.g., normal conditions, short term or long-term exceedance? b. What is the context of the ratings sought, e.g., normal operation, N-1 contingency, with or without cooling? c. Is reporting applicable to a particular time, day, period or season, e.g., 14:00 hrs., July 6th peak, or Summer and Winter ratings? d. Is the reporting average, normalized, typical, maximum, at some temperature, e.g., 4 hr. max. rating at 86°F, 1 hr. max. normalized to 70°F, with or without forced cooling, at an 82°F cooling sink temperature (air, river or ocean)? 4. The drafting team should consider producing a Guidance Document with definitions, example uses and a Frequently Asked Questions (FAQ) section to provide the industry assistance and guidance. 5. What, if any, are respondent’s obligations under R8.2 for areas or regions where IROL’s or TTC are not limiting or are not used?</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement 2.3 and 3.3 both refer to the “most limiting applicable Equipment Rating”. The SDT believes that the meaning of “most limiting” is clear when read in context. Similarly, the SDT believes, ‘next most limiting’ is also clear when read in context. The SDT has responded to commenter’s suggestions for clarity involving the relationship between the Facility and the Requester, as well as clarification related to thermal capabilities of the equipment referred to in Requirement 8.2. The SDT believes that these clarifications largely address this commenter’s concerns. Requirement R2, Part 2.3 and Requirement R3, Part 3.3 both refer to the “most limiting applicable Equipment Rating”. The SDT believes that the meaning of “most limiting” is clear when read in context. Similarly, the SDT believes, ‘next most limiting’ is also clear when read in context. The SDT has responded to commenter’s suggestions for clarity involving the relationship between the Facility and the Requester, as well as clarification related to thermal capabilities of the equipment referred to in Requirement R8, Part 8.2. The SDT believes that these clarifications largely address this commenter’s concerns.</p> <p>For your suggestion regarding defining “most limiting”, etc.: The FRSDT does not believe that these terms need to be a defined term in the NERC Glossary.</p> <p>The drafting team received several suggestions to modify Requirement R8 to make it easier to determine what constitutes a major city or load pocket. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether Facilities under their authority are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. Please see the proposed clarified Requirement R8 in the Summary Consideration above.</p> <p>Guidance documents: Drafting teams are not under obligation to develop guidance documents for each standard. The incremental change to this standard is</p> | | |

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| Organization | Yes or No ³ | Question 2 Comment |
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| related to Requirement 8, Part 8.2. The FRSDT believes that sufficient guidance has been provided in the background material of the comment form. | | |
| ReliabilityFirst Corporation | No | <p>ReliabilityFirst generally agrees with the VRFs. ReliabilityFirst voted negative on this poll due to the VSL designations as listed below:</p> <ol style="list-style-type: none"> 1. The first VSL under the Lower category needs the words “and including” inserted prior to the “15 calendar days” language. The last part of the sentence should state “but missed meeting the schedules by up to and including 15 calendar days. This extra language would further clarify that if an entity reported its Facility Ratings on the 15th day, they would fall under the “Lower” VSL. 2. For the VSLs which incorporate percentages, the VSL percentages are not inclusive. The words “or equal to” should be incorporated into such VSLs. For example, the second VSL under the Lower category should state “The responsible entity provided less than 100%, but not less than or equal to 95%...” This type of change should be incorporated in all four of the VSL categories. |
| Response: The FRSDT thanks you for your comment. The FRSDT agrees and has made the proposed revisions | | |
| Consumers Energy | No | see comments on the proposed Standard. |
| Response: The FRSDT thanks you for your comment. Please see response to comments on proposed standard. | | |
| MEAG Power Municipal Electric Authority of Georgia | No | Standard language needs to be clarified as noted in our ballot submission before affirming the VRFs and VSLs. |
| Response: The FRSDT thanks you for your comment. Please see clarifying revisions in the Summary Consideration for Question 1. | | |
| National Grid | No | The selection of 100% to 95%, and 95% to 90%, etc, seems arbitrary and not based on a reliability reason. It is hard to understand how one would classify whether the information provided would fall into those percentage categories and would then cause the risk to move from low to severe. |
| Response: The FRSDT thanks you for your comment. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found. | | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--|
| Niagara Mohawk (National Grid Company) | No | The selection of 100% to 95%, and 95% to 90%, etc, seems arbitrary and not based on a reliability reason. It is T hard to understand how one would classify whether the information provided would fall into those percentage categories and would then cause the risk to move from low to severe. |
| <p>Response: The FRSDT thanks you for your comment. The VSLs allow for the varying scenarios of non-compliance with the requirement. Since a requester may ask for multiple Facility Ratings, the requested entity may not provide all of the information (i.e. only half or 50% or the requested information). Likewise, an entity may be late in providing the information. The VSLs meet the guidelines for this type of requirement. Please keep in mind that VSLs are only applied after a violation of the requirement is found.</p> | | |
| Pepco Holdings Inc | No | The time horizon for supplying the limiting component should be in the planning horizon. |
| <p>Response: The FRSDT thanks you for your comment. The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.</p> | | |
| American Electric Power | No | The Violation Risk Factor for 8.2 is the same as that required for 8.1. The real-time reliability need for the data required in 8.2 is questionable, at best. Since this data need not be supplied prior to 30 days after requested, it is inconsistent with a VRF of “Medium”. Rather for 8.2 it should be “Lower”. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| Occidental Chemical | No | The VRF for R 8.2 should be “Lower” since the data is not required for real time operations as is R 8.1, which has a VRF of “Medium.” |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| Manitoba Hydro | No | The VRF should be Lower. Requirement 8.2 only requires the entity to provide information, and this |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--|
| | | information is the next most limiting element not the most limiting element. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> | | |
| Indeck Energy Services | No | <p>The VSL's are focused on a TO with numerous ratings to provide. A GO might only have one. The GO violation would always be Severe. The number of ratings not provided should be an "either or" with the percentage, such as: Lower VSL: The responsible entity failed to provide more than 5 Ratings or provided less than 100%, but not less than 95% of the required Rating information to all of the requesting entities. Moderate VSL: The responsible entity failed to provide more than 10 Ratings or provided less than 100%, but not less than 90% of the required Rating information to all of the requesting entities. High VSL: The responsible entity failed to provide up to 15 Ratings or provided less than 100%, but not less than 85% of the required Rating information to all of the requesting entities. Lower VSL: The responsible entity failed to provide up to 20 Ratings or provided less than 85% of the required Rating information to all of the requesting entities.</p> |
| <p>Response: The FRSDT thanks you for your comment. Note that the VSLs only provide a starting point for the determination of a penalty or sanction. There are many other mitigating/aggravating factors used to determine the actual penalty or sanction.</p> | | |
| Tri-State G&T | No | <p>There is room for confusion where the VSLs for R7 and R8 use the phrase "missed meeting the schedules." Depending on the intent, it should perhaps be changed to "missed meeting one or more schedules" or "missed meeting all of the schedules" in each of the VSLs.</p> |
| <p>Response: The FRSDT thanks you for your comment. Because the VSLs contain the phrase, "requesting entities" there should be no confusion. If there was only one requesting entity, there should be only one schedule – but if there were 10 requesting entities, there should be 10 schedules.</p> | | |
| NERC Standards Review Subcommittee | No | <p>We agree that the "Medium" rating for R8.1 is correct since it is due immediately. However, the VRF for R8.2 should be "Lower" since the data is not required immediately for real-time operations.</p> |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements</p> | | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--|
| have the same VRF. | | |
| Seattle City Light | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change.</p> | | |
| BGE | Yes | |
| Bonneville Power Administration | Yes | |
| Clark Public Utilities | Yes | |
| Dominion | Yes | |
| East Kentucky Power Cooperative | Yes | |
| Exelon | Yes | |
| Georgia Transmission | Yes | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|--------------------|
| Corporation | | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |
| New Harquahala Generating Co. | Yes | |
| New York Power Authority | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| Pacific Gas & electric Company | Yes | |
| PacifiCorp | Yes | |
| Public Service Enterprise Group | Yes | |
| South Carolina Electric and Gas | Yes | |
| Southern Company Generation (SCG) Technical Services | Yes | |
| Southern Company Transmission | Yes | |
| SPP Reliability Standards Development | Yes | |
| SRP | Yes | |
| United Illuminating Company | Yes | |
| We Energies | Yes | |

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| Organization | Yes or No ³ | Question 2 Comment |
|--|------------------------|---|
| Xcel Energy | Yes | |
| American Transmission Company, LLC | Yes | ATC agrees, however, believes the Violation Risk Factor for requirement 8 should be changed to “Low” and the Time Horizon for requirement 8 should be “Planning”. Information pertaining to a second limit is informational because an operator at the desk cannot act on this information without obtaining additional information or technical support. Furthermore, the fact that the information must be specifically requested validates a lower risk level. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> <p>The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.</p> | | |
| MISO Standards Collaborators | Yes | We agree, however, the Violation Risk Factor for requirement 8 should be changed to “Low” and the Time Horizon for requirement 8 should be “Planning”. Information pertaining to a second limit is informational because an operator at the desk cannot act on this information without obtaining additional information or technical support. Furthermore, the fact that the information must be specifically requested validates a lower risk level. |
| <p>Response: The FRSDT thanks you for your comment. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The VRF for R8 applies to all parts and subparts of R8 and also matches the VRF for R7. The FERC approved guidelines for VRFs require that similar requirements have the same VRF.</p> <p>The usage of the information obtained under R8 is envisioned to be the same as that obtained under R7. The Time horizons are the same for both requirements.</p> | | |

3. Do you agree with the proposed Measure M8? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: The majority of commenters agree with the Measure M8. A couple of commenters had suggestions for including language that limits the scope to requested data and other specific language. The FRSDT believes that the phrase “in accordance with Requirement R8” contained in M8 is sufficient language to tie the measure to the requirement and provide the linkage suggested.

| Organization | Yes or No ⁴ | Question 3 Comment |
|---|------------------------|--|
| Louisville Gas and Electric Co. | | The Measurement (M8) does not clarify what else constitutes “shall have evidence” other than the dated electronic note. : M8. Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R87. |
| <p>Response: The FRSDT thanks you for your comment. The intent of the measure is to provide guidance as to the type of evidence that is necessary for the requirement. The phrase “or other comparable evidence” provides an entity the flexibility to develop other types of evidence that may be acceptable.</p> | | |
| U.S. Bureau of Reclamation – Martin Bauer P.E. | | <p>The proposed language of parts 8.2, 8.2.2, and M8 is ambiguous and does not make clear the intent of the proposed Requirement 8, which is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, we have provided proposed alternative language for parts 8.2, 8.2.2, and M8 which we believe clarifies the intent, while not changing the actual requirements.</p> <p>M8. Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings, identity of limiting equipment, and if requested, thermal rating of the equipment to its associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and</p> |

⁴ When this column is blank, it indicates a comment that was submitted with a ballot but not via the electronic comment form. Some commenters submitted duplicate comments with their ballot and via the electronic comment form; in this case, the Yes or No column is marked with their response in the electronic comment form.

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| Organization | Yes or No ⁴ | Question 3 Comment |
|--|------------------------|---|
| | | Transmission Operator(s) in accordance with Requirement R87. |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT has made clarifying revisions to the requirement. Please see the proposed revisions in the Summary Consideration of Question 1.</p> | | |
| Xcel Energy | No | |
| GDS Associates | No | a. The applicability to the GO should not be stated in parenthesis. We suggest rewording such as “Each Transmission Owner and Generator Owner shall have [...]” |
| <p>Response: The FRSDT thanks you for your comment. The style incorporated is necessary to indicate that this only applies to a GO who has Facilities applicable to Requirement 2. R8 is not applicable to all GOs.</p> | | |
| East Kentucky Power Cooperative | No | EKPC does not believe that the identity of the limiting equipment is necessary to provide a reliable BES. Therefore, this information should not be required in R8 or M8. |
| <p>Response: The FRSDT thanks you for your comment.</p> | | |
| Indeck Energy Services | No | M8 fails to indicate that the TO or GO only need evidence of responding to specific requests. |
| <p>Response: The FRSDT thanks you for your comment. The phrase “in accordance with Requirement R8” provides sufficient indication that the TO or GO only has to provide evidence upon request.</p> | | |
| Ameren | No | Ratings (normal and emergency) should be provided by the requested date. The limiting equipment of the facility rating should be made available upon request, as needed for reliability concerns. The second limit and the corresponding limiting equipment should also be made available upon request, as needed for reliability concerns. |
| <p>Response: The FRSDT thanks you for your comment. The phrase “in accordance with Requirement R8” is sufficient language to tie the measure to the requirement and provide the linkage that you suggest.</p> | | |
| Pepco Holdings Inc | No | The measure should take into account if the requesting entity does not require the limiting components or the next limiting rating. |
| <p>Response: The FRSDT thanks you for your comment. The phrase “in accordance with Requirement R8” is sufficient language to tie the measure to the</p> | | |

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| Organization | Yes or No ⁴ | Question 3 Comment |
|---|------------------------|--|
| requirement and provide the linkage that you suggest. | | |
| Seattle City Light | No | <p>We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1</p> |
| <p>Response: The SDT thanks you for the suggestion, and agrees that the suggestion is indeed a language clarification, and is not a change of intent. Therefore, with minor modification, the SDT accepts the proposed change.</p> | | |
| American Transmission Company, LLC | Yes | |
| BC Hydro and Power Authority | Yes | |
| BGE | Yes | |
| Bonneville Power Administration | Yes | |
| Clark Public Utilities | Yes | |
| Dominion | Yes | |
| Exelon | Yes | |

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| Organization | Yes or No ⁴ | Question 3 Comment |
|--|------------------------|--------------------|
| Georgia Transmission Corporation | Yes | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |
| Manitoba Hydro | Yes | |
| MISO Standards Collaborators | Yes | |
| National Grid | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| New Harquahala Generating Co. | Yes | |
| New York Power Authority | Yes | |
| Niagara Mohawk (National Grid Company) | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| PacifiCorp | Yes | |
| Public Service Enterprise Group | Yes | |
| South Carolina Electric and Gas | Yes | |
| Southern Company Generation (SCG) Technical Services | Yes | |

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| Organization | Yes or No ⁴ | Question 3 Comment |
|--|------------------------|--|
| Southern Company Transmission | Yes | |
| SPP Reliability Standards Development | Yes | |
| SRP | Yes | |
| Tri-State G&T | Yes | |
| United Illuminating Company | Yes | |
| We Energies | Yes | |
| American Electric Power | Yes | M8 is consistent with R8, but this consistency should not be confused with the reliability need for the data related to R8.2, which is questionable. |
| Response: The FRSDT thanks you for your comment. | | |
| Dynegy Inc. | Yes | We agree; however, similar to our comment in #1 above, M8 requires a TO to provide information to itself. |
| Response: The FRSDT thanks you for your comment. M8 only requires a TO to provide data to itself if it makes a request of itself. | | |

4. Do you agree with the proposed Implementation Plan for FAC-008-3, Facility Ratings? If not, please explain why not and if possible, provide an alternative that would be acceptable to you.

Summary Consideration: The majority of commenters agree with the implementation plan. One commenter suggested that NERC provide guidance on how to handle certain situations. The FRSDT maintains that the requirements are written to allow entities flexibility in determining their Facility Ratings Methodology and the subsequent Facility Ratings. The requirements allow for entities to handle both common and unique situations without being prescriptive. Another commenter suggested changing the effective date to match the end date of a NERC Alert relating to FAC-008. The FRSDT believes that the requirements under FAC-008-3 are not onerous and that entities are performing the work today that will be required under FAC-008-3.

| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| SRP | No | NERC does not specify how to handle the common situation where several switches and breakers in a substation bay have the same rating. Do you pick one 3000 Amp breaker, and the 3000 Amp switch next to it is “second most limiting,” or do you group all of the 3000 Amp devices as most limiting? When clearance to ground limits a line rating in a certain span, the next upgrade could be a nearby span, and could only be slightly higher. Such results would not provide a good gauge of the cost of a meaningful increase in the line rating. An increase in one line rating wouldn’t necessarily add to an IROL (Interconnection Reliability Operating Limit) or TTC (Total Transfer Capability). Extensive power flow, stability and voltage studies are usually needed to know that. |
| <p>Response: The FRSDT thanks you for your comment. The requirements are written to allow entities flexibility in determining their Facility Ratings Methodology and the subsequent Facility Ratings. The requirements allow for entities to handle both common and unique situations without being prescriptive.</p> | | |
| Seattle City Light | No | We recognize that NERC is under a time constraint to file a revised standard with FERC, but we believe that the proposed language of parts 8.2 and 8.2.2 is ambiguous and does not make clear the intent of the proposed Requirement 8, which we believe is that the requesting party must demonstrate an impact on their system for ONLY a thermal limit of a Facility on another’s system. Because of this ambiguity and the potential for misunderstanding of Requirement 8, and in spite of the time constraint NERC is faced with, we are voting NO on the current version of the standard. However, we have provided proposed alternative language for parts 8.2 and 8.2.2, which we believe clarifies the intent, while not changing the actual requirements. We believe this proposed language is clarifying in nature and not a substantive change. Therefore a recirculation ballot, rather than another successive ballot could be conducted. If this language, or similar clarifying language, is adopted by the drafting team we would vote in the affirmative for the proposed standard in a recirculation ballot.8.2 Within 30 calendar days (or a later date if specified by the requester), for any requested Facility that has equipment with a Thermal Rating that limits the Requester’s Facility by creating an |

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| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| | | Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:8.2.2. The equipment’s Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1 |
| <p>Response: The FRSDT thanks you for your comment. Please see responses to your similar comments above. The team adopted your suggestion and added the word, “Thermal” for improved clarity.</p> | | |
| American Electric Power | Yes | |
| American Transmission Company, LLC | Yes | |
| BGE | Yes | |
| Bonneville Power Administration | Yes | |
| Clark Public Utilities | Yes | |
| Dominion | Yes | |
| Dynergy Inc. | Yes | |
| East Kentucky Power Cooperative | Yes | |
| Exelon | Yes | |
| GDS Associates | Yes | |
| Georgia Transmission Corporation | Yes | |
| Imperial Irrigation District | Yes | |
| Luminant Power | Yes | |

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| Organization | Yes or No | Question 4 Comment |
|--|-----------|--------------------|
| Manitoba Hydro | Yes | |
| MISO Standards Collaborators | Yes | |
| National Grid | Yes | |
| NERC Standards Review Subcommittee | Yes | |
| New Harquahala Generating Co. | Yes | |
| New York Power Authority | Yes | |
| Niagara Mohawk (National Grid Company) | Yes | |
| Oklahoma Municipal Power Authority | Yes | |
| Pepco Holdings Inc | Yes | |
| Public Service Enterprise Group | Yes | |
| South Carolina Electric and Gas | Yes | |
| Southern Company Generation (SCG) Technical Services | Yes | |
| Southern Company Transmission | Yes | |
| SPP Reliability Standards Development | Yes | |
| Tri-State G&T | Yes | |

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| Organization | Yes or No | Question 4 Comment |
|--|-----------|--|
| United Illuminating Company | Yes | |
| Xcel Energy | Yes | |
| PacifiCorp | Yes | <p>PacifiCorp does not believe that the proposed Implementation Plan, which provides for a 12-month period before FAC-008-03 becomes effective, allows for sufficient time for entities to update their Facility Rating Methodology and their associated Facility Ratings. The Implementation Plan for this standard should be tied to the implementation of the NERC Alert for FAC-008. The Implementation Plan should reflect that the effective date for compliance with this standard is 12 months after the close of the activities required under that NERC Alert (currently scheduled for December 31, 2013). While PacifiCorp understands that the NERC Alert is not equivalent to a mandatory Reliability Standard, it nonetheless imposes significant compliance and operational burdens on registered entities and, only after the close of those activities responsive to the NERC Alert, can entities properly comply with the modifications in FAC-008-3 directed by the Commission.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT believes that the requirements under FAC-008-3 are not onerous and that entities are performing the work today that will be required under FAC-008-3.</p> | | |
| Ameren | Yes | <p>The implementation plan as proposed would be acceptable if the requirements of the proposed standard would be modified, as discussed in items 1 and 3 above and below in item 5.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses to your other comments.</p> | | |

5. If you have any other comments related to the FERC directive (paragraphs 756 and 771) and this Supplemental SAR that you have not already provided in response to the questions above, please provide them here.

Summary Consideration: Many commenters reiterated their suggestions for improvement to the Standard that they provided in the questions above. Several commenters requested clarification or edits to the standard which are outside of the scope of the Supplemental SAR.

| Organization | Question 5 Comment |
|--------------|---|
| Ameren | <p>We would agree to provide limited additional rating information for reliability needs, but most of the reasons identified by the FERC and the SDT are not for reliability. We agree that an IROL is a reliability need and additional rating and equipment information may be appropriate for discussion to formulate corrective plans to mitigate IROLs. However, we are not convinced that we need a standard to provide that information as it can be readily obtained through existing planning and operating channels, upon request. We are in favor of increased situational awareness and providing operators with information that they need to maintain system reliability, but we are also aware that too much information may be overwhelming, and all ratings data for all equipment is not needed for system operation. We have discussed these proposed additional requirements with our Transmission Operations and Operations Planning personnel, and we all agree that this additional ratings information is not needed to maintain or increase situational awareness or to develop effective Operating Plans or Planning Assessments prior to real-time operations. We do not see a need to provide second limit information in the operating horizon to address TTC calculations, generator deliverability concerns, or transmission service to load pockets. Limits to TTC may not be a reliability concern unless the incremental transfer capability is negative or a very low value. Generator deliverability and available transmission services are market products, and processes and procedures are in place for market participants to address those issues. Low values of either quantity indicate congestion concerns between the generators and the LSEs rather than reliability issues. In addition, from our perspective, system upgrades to allow the second limits to become the most limiting facilities typically cannot be completed in the operating horizon. Therefore, we do not believe that second limits need to be provided in the operating horizon. We listened to the NERC Webinar presented by the SDT and appreciated the opportunity to submit questions, but we were not convinced that there is a reliability need for all the reasons given. It appears that the SDT is still attempting to build a case to support the FERC directives to provide the additional ratings information. However, we view this proposal as a repackaged version of an earlier proposal. The industry has voiced its opinion on the need for the additional rating information on several occasions now, and each time the industry has overwhelmingly said “No, these requirements are not needed to maintain reliability”. We see no reason to change our earlier position, and therefore cannot support the latest proposed revisions to FAC-008.</p> <p>Below are additional reasons why the most limiting equipment and the second most limiting equipment and ratings should not be provided, except upon request:</p> <ol style="list-style-type: none"> 1. There is no need to provide the most limiting equipment information for all facilities as the overwhelming majority of these |

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| Organization | Question 5 Comment |
|---|---|
| | <p>facilities would rarely result in an IROL or SOL.</p> <p>2. The Reliability Coordinator, Transmission Operator, and Planning Coordinator need to honor the existing ratings that are in place, and not worry about the second limits. The revised standard PRC-023 should eliminate relay limits as the first or second limits for nearly all facilities, so the concern for the system falling apart for single contingency events should be significantly reduced.</p> <p>3. Providing this second limit information would be another record keeping nightmare for the Reliability Coordinator, Transmission Operator, and Planning Coordinator, as some of these entities can barely manage the ratings information that they presently have.</p> <p>4. When IROL or SOL are identified, this should encourage discussion between the Reliability Coordinator, Transmission Operator, and Planning Coordinator and the local transmission owner or local transmission operator. These entities should work together to understand the System requirements and develop mitigation, if needed. Providing this additional rating information to entities prior to its request and without the benefits of discussion encourages operating decisions to be made unilaterally.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT has made clarifying revisions to Requirement R8, Part 8.2 and its subparts that address your comments. Please see proposed revisions in the Summary Consideration for Question 1. The FERC directives in Order 693 provide for inclusion of most of your points 1-4 above. The FRSDT believes that the Requirement R8 meets the directives. The information contained in Requirement R8, Part 8.2 and its subparts are only to be provided upon request.</p> | |
| <p>American Electric Power</p> | <p>The data required in R8.1.1 (Facility rating(s)) is essential to operate the BES reliably in real-time. However, the identification of that equipment in R8.1.2 has limited value in real time operation. Although consistent with the FERC Orders referenced with the related SAR, the identification of the “next most” limiting equipment, and the associated equipment rating is not useful in real-time operation, and could - if misunderstood - be detrimental to the reliability of the BES. Knowledge only of the rating of the “next most limiting equipment” alone is insufficient to be useful in real-time operation. To be useful other information, such as the time for which the next most limiting equipment might govern the Facility Rating rather than the most limiting equipment, must be known. However, if that time information was provided, that knowledge effectively assigns a ‘short term’ rating to the Facility in question. If that were the objective of the FERC Orders, then greater clarity and understanding and potential usefulness could have been achieved by simply requiring a short term rating (i.e. a 1-hour rating for a Facility that meets the definition contained in the preamble to R8.2). In the planning horizon, all the rating of equipment that comprises a Facility will be known, or become known, as a natural part of the planning process. Therefore, a Requirement calling for this information is at best, of minimal value. Despite these stated reservations, the SDT has provided the most benign method to respond to the FERC Orders.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires</p> | |

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| Organization | Question 5 Comment |
|--|---|
| | <p>the inclusion of the topics of your comments. The background information contained in the last posting provides the following:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Bonneville Power Administration</p> | <p>There are several additional edits needed to the current draft of FAC-008-3 that would remove confusion or increase understanding. These are as follows:</p> <p>In A.5 - Define the acronym BOT;</p> <p>In B.R8 and B.R3 - International Council on Large Electric Systems (CIGRE) should be replaced with International Electrotechnical Commission (IEC) or removed and left with IEEE only as an example. Although CIGRE performs studies and provides recommendations the standards are developed in IEC.</p> <p>In M4 - (Revise) Each Transmission Owner shall... (to) Each Transmission or Generator Owner shall... and remove the second sentence which is a repetitive statement already covered by the first sentence. There is a mixed use of reference to requirements as R(number) or just a number.</p> <p>For consistency:</p> <p>In M4 - Change ... accordance to Requirement 4 to ... accordance to Requirement R4</p> <p>In M5 - Change ... accordance to Requirement 5 to ... accordance to Requirement R5</p> <p>IN M6 - Change ... R2 and R3 (Requirement 6) to ... R2 and R3 and R6</p> |
| <p>Response: The FRSDT thanks you for your comment. Your comments are outside of the scope of the Supplemental SAR. These will be considered with the next revision to FAC-008.</p> | |
| <p>Brazos Electric Power Cooperative</p> | <p>From a reliability perspective, demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. Even though the SDT has developed what some may consider a reasonable compromise by requiring identification of the second most limiting component, it is not clear how this results in a more reliable system. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue. The</p> |

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| Organization | Question 5 Comment |
|--------------------|--|
| | <p>proposed standard lacks clarity. For example, part of the purpose from FERC 693 was to ‘identify the limiting component(s) and define the increase in rating based on the next limiting component(s) for all critical facilities’. How does the proposed requirement give an entity guidance on how to detail the increase and what are considered ‘all critical facilities’? Is simply having it in the MLSE sufficient?</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| CenterPoint Energy | <p>R8.1.2 requires Transmission Owners and applicable Generator Owners to provide the “Identity of the most limiting equipment of the Facilities (as scheduled by the requesting entities)”. The identification of the most limiting equipment of the Facilities is not part of the typical planning process; that is, this information is not submitted for the development of steady-state planning models. In addition, commercially available power system planning software programs do not accept such data. CenterPoint Energy recommends that the identification of the most limiting equipment of the Facilities be provided only upon request and within 30 days of a request. This will result in R8.1: “Facility Ratings as scheduled by the requesting entity”, R8.2: “Identity of the most limiting equipment of the Facilities as requested within 30 days (or a later date if specified by the requester)”, and R8.3: “Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.3.1. Identity of the existing next most limiting equipment of the Facility 8.3.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.3.1.”</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires</p> |

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| | <p>the inclusion of the topics of your comments. The SDT believes that providing the identity of the most limiting element was not an onerous requirement because it must be known to establish the limit. Furthermore, the standard already requires the owner to recognize the most limiting element in establishing the Facility Rating. The FRSDT has made clarifying revisions to Requirement R8, Part 8.2 and its subparts that address your comments. Please see proposed revisions in the Summary Consideration for Question 1.</p> |
| <p>City of Grand Island - Jeff Mead</p> | <p>The "second" limiting factor is to satisfy scenarios based on day ahead modeling. Changing to the second rating isn't practical in real time and thus not a benefit to BES reliability. We already have emergency limits states, so use that.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers.</p> |
| <p>Clark Public Utilities</p> | <p>Please add a Version History box to the bottom of this proposed standard clearly stating that it is a complete revision, absorbing facility rating requirements from FAC-008-01, FAC-009-01, FAC-008-2. There is a similar occurrence in the proposed PRC-005-2 revision. This provides a confirmation of the retirement of these other standards and leaves no room for doubt.</p> |
| | <p>Response: The FRSDT thanks you for your comment. These items are contained in the Implementation plan. We will ask staff to add the version history table to this standard.</p> <p>FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should all be retired when FAC-008-03 becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)</p> |
| <p>Cleco Power - Michelle A Corley;Stephanie Huffman;Robert Hirschak</p> | <p>Cleco is not comfortable with some of the terms used in the draft standard. In R1.1, R2.2, and R3.2, the standard requires the documentation shall contain assumptions used to rate the facility. If an entity uses manufactures nameplate ratings than there are no assumptions established. What happens if an entities assumptions in the eyes of an auditor are not adequate? Also, what is meant by "engineering analyses" in R1.1, R2.1, and R3.1.</p> |
| | <p>Response: The FRSDT thanks you for your comment. Even when using manufacturer's ratings, one must consider ambient conditions that change, the specific application and equipment condition. The adequacy of your assumptions must be defensible. Your support must be consistent with at least one of the following: equipment manufacturer, industry standards or test results. Engineering analysis is not required in the standard,</p> |

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| | <p>but is allowed. If an entity wishes to run studies or create detailed models for analysis that is acceptable.</p> |
| <p>East Kentucky Power Cooperative</p> | <p>It is not clear how requiring identification of the most limiting component and the second most limiting component results in a more reliable system. The identity of these components may vary over a range of ambient temperatures and network topology conditions. It would be nearly impossible to capture this information in a static published document for all possible system operating conditions. Furthermore, the time and effort involved in identifying and documenting the increase in Facility Ratings based on the second most limiting component outweighs the benefits of knowing this information. From a reliability perspective, demonstrating that Facility Ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. The system will be operated using these Facility Ratings to maintain system reliability. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue, and therefore should not be a requirement included in a Reliability Standard. Another issue with Requirement 8 is that the terms "most limiting equipment" and "next most limiting equipment" are not well defined, particularly when taken in conjunction with paragraph 76 of FERC's September 16, 2010 Order. The example given in that paragraph seems to indicate that the most limiting equipment is the component that is limiting for normal conditions, whereas the next most limiting equipment is the component that is limiting for contingency conditions. This does not appear to be the intent of Requirement 8. Clarifying language is necessary to eliminate the confusion.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating,</p> |

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| | <p>and some a 1-hour rating or some other value.</p> |
| <p>Entergy Services, Inc. - Joel T Plessinger; Edward J Davis; Terri F Benoit</p> | <p>We recommend that radially operated transmission facilities be excluded from this standard and that exclusion be accomplished in the Applicability section with the following change: 4.1. Transmission Owner (radially operated transmission facilities excluded) 4.2. Generator Owner (radially operated transmission facilities excluded)</p> |
| <p>Response: The FRSDT thanks you for your comment. We will forward your comment, which is asking for a revision to the standard that is outside the scope of this project, for inclusion in the NERC Issues Database for future consideration.</p> | |
| <p>GDS Associates</p> | <p>a. Title o The title of proposed version 3 of the standard states simply “Facility Rating” while the current FAC-008-1 is defined as the “Facility Rating Methodology”. We agree on this if there is a reason to combine the two FAC-008 and FAC-009 altogether, otherwise the title should be kept the same.</p> <p>b. Requirement R1 o While it is indicated that the line of demarcation between generation facilities and transmission facilities is the step up transformer, the equipment after the generator step up transformer is usually considered, and rightfully so, a generator lead. The unilateral assertion that equipment after the generator step up transformer be considered transmission type equipment is incorrect. This sets up a situation where all Generator Owners would be seen as a Transmission Owners, which is not proper. o The main step-up transformer is not an appropriate reference in the standard. Although FR SDT have previously agreed that “the main step up transformer may not be the point of interconnection”, and explained that the R1 and R2 should be considered together as “R1 relates to the electrical rating of the generator and R2 relates to transmission type equipment (if owned by the GO) from the end point in R1 to the point of interconnection”, this would not support the main purpose of the standard as to be generally applicable on all and any of the various generation facility topologies. While in R1 the GO is required to have “documentation for determining the Facility Ratings”, R2 requires the GO to have “a documented methodology for determining Facility Ratings (Facility Rating Methodology)”. In other words R1 it seems to require the actual Facility Ratings along with the premises related to how these were determined including the methodology, while R2 requires only the methodology. FR SDT’s justification is in contradiction with the language used. We suggest rewording both requirements R1 and R2 as to reference only the point of interconnection and not some specific equipment. o Why is nameplate rating left out of the first bullet in R1.1 but included in the first bullet of R2.1? Is this an indication that nameplate data is not a valid rating methodology? Are the rating methodologies not left to the entity to determine? o What is meant by engineering analyses? This term is very broad and can be interpreted multiple ways. Would this not add confusion to the Audit process as different Regions interpret engineering analyses in different ways? Could this not bring about unequal enforcement?</p> <p>c. Requirement R2 o While R1 references ANSI and IEEE, requirement R2 references IEEE and CIGRE standards. Even though, as explained by the FR SDT, “ANSI/IEEE/GIGRE, etc, are examples and are meant to provide flexibility” the</p> |

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| | <p>language of the standard should not be ambiguous or to reflect a selective and impartial approach. We suggest that any reference to technical standards to be provided such as “[...] industry standards (e.g. Institute of Electrical and Electronic Engineers (IEEE) standard / International Council on Large Electric Systems (CIGRE) standards / American National standard Institute (ANSI) standards, etc.)”.</p> <ul style="list-style-type: none"> o Why isn't the verbiage in Requirement 2.1 first bullet carried throughout the document (R2.2.2 & R3.2.2)? o Second bullet on R2.1 would detail the acronym for IEEE while the first reference of these standards in R1.1 is inadvertently missing this. Generally, the acronyms are explained at their first use in the text of the document. Please see also prior comment and correct the language accordingly. o What determines the average temperature at 2.2.3? How many years of data must be analyzed to provide an average? How are unusual events or variations handled? o We assume that the details pertaining the ambient conditions at 2.2.3 are meant to widen and clarify to which extent these should be considered, however we believe that the statement “[...] as they vary in real-time)” would rather confuse the GO as they may figure the likelihood of a dynamic approach. We suggest rephrasing such as “Ambient conditions (as considered by the Generator Owner based upon local conditions or / and industry standards)” o Although the footnote 1 is to serve as an example for what type of operating limitations to be considered, we believe that this can generate confusion. For instance the GO can understand that is required to consider various operating limits determined by any equipment temporarily taken out of service. While we believe that FR SDT has not envisioned this approach, we suggest deleting the word “temporary” from the footnote. o We consider that the language used at 2.4 is not the best choice. We suggest rephrasing this as follows: <ul style="list-style-type: none"> 2.4. The process by which the Rating of equipment that comprises a Facility is determined reflecting all of the following: <ul style="list-style-type: none"> 2.4.1. The equipment addressed including, but not be limited by the conductors, transformers, relay protective devices, terminal equipment, series and shunt compensation devices, etc. 2.4.2. The corresponding equipment Rating characterized at a minimum, by its Normal and Emergency Ratings (or Continuous / Shorter Term Ratings)" <p>d. Requirement R3</p> <ul style="list-style-type: none"> o See R1, R2 comment pertaining the standards reference. o See R2 comment pertaining the ambient conditions o See R2 comment pertaining the operating limitations o We consider that the language used at 3.4 is not the best choice. See comment and suggested changes at 2.4 <p>e. Requirement R4</p> <ul style="list-style-type: none"> o Not sure why the GO is required to make available the documentation for determining the Facility Ratings along with the methodology, while the TO is required to provide only the methodology. o The number of calendar days (21) to provide information is unusual. Most Standards have a period of 30 or 45 calendar days. Should there be consistency amongst all Standards? Would the change from 15 to 21 to 30 impact reliability? <p>f. Requirement R5, R6, R7, R8</p> <ul style="list-style-type: none"> o It seem that there is some overlap in between this standard and FAC-009-1 |
| | <p>Response: The FRSDT thanks you for your comment. FAC-008-3 is a revision which includes FAC-008-1, FAC-008-2 and FAC-009-1. These three standards will be retired upon adoption of FAC-008-3 (see Implementation Plan). Requirements 5-R7 were mapped from FAC-009-1 into FAC-008-2 and subsequently FAC-008-3. Requirement R8 is a new requirement. The comments pertaining to R1-R6 are outside the scope of this Supplemental SAR. Your suggestions for improvement to R1-R6 will be considered with the next revision to the standard.</p> |

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| <p>Georgia Transmission Corporation</p> | <p>A. The follow comment uses the Comment form example definitions and Diagram 1 labeling from the Reliability Objective Discussion section - labeling of point (E2) and (E3) was added to Diagram 1 for clarity. We believe that the intent of the Directive’s requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of equipment 3 could result in equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, (E3) continuous rating and (E2) shorter term rating, would seem to meet the Directive’s clarified requirement. In cases where the limiting equipment’s continuous rating is equal to its emergency rating (equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The “Reliability Objective Discussion” and R 8.2.2 goes much further by suggesting that four data points are required being the continuous and emergency ratings for limiting and next most limiting equipment.</p> <p>B. The R8 requirement does reflect the Directive however we believe that item (3) and item (4) are undefined terms.</p> |
| <p>Response: The FRSDT thanks you for your comment. A. Requirement R8, Part 8.2.2 has been revised by replacing “Equipment” with “thermal” ratings. If you have multiple sets of ratings, then it is expected that the information requested under Requirement R8, Part 8.2.2 will be for each rating that is requested.</p> <p>B. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.</p> <p>The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.</p> | |
| <p>Hoosier Energy Rural Electric Cooperative, Inc. - Robert Solomon</p> | <p>The Standard Drafting Team has provided an improved compromise by requiring identification of the second most limiting component. It is not clear how this draft will results in a more reliable system. Demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient from a reliability perspective. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased.</p> |

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| | <p>But this is more of an economic evaluation when developing a specific project rather than a reliability issue.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the “Emergency Rating” or “shorter term rating” as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Imperial Irrigation District</p> | <p>IID has submitted a NO vote with comments during the ballot period. Provided is IID justification for the NO vote: We agree the R8 requirement addresses the Commission’s directive, however we are seeking only clarification of the standard’s language that, if addressed will enable the vote to be changed to Affirmative. In order to minimize ambiguity we ask the Drafting Team to consider making the request apply ONLY to a Facility whose Thermal Rating has system impacts as identified through the following comment: 8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility whose Thermal Rating causes the Facility to be the Limiting Element and that the requester has identified as having an impact on their system affecting an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Equipment’s Thermal Rating for the next most limiting Component identified in Requirement R8, Part 8.2.1.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The FRSDT has made clarifying revisions to the proposed standard that meet the intent of your comment. Please see proposed revisions shown in the Summary Consideration section for Question 1 above.</p> |

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| <p>IRC Standards Review Committee</p> | <p>FAC-008-2, R8 is redundant with respect IRO-010 R1 that requires the RC to ask for needed data; and R3 requires TOs and GOs to provide that facility data. It is not clear the purpose of R8.2.1, it appears to be ambiguous and lacks transparency. There is no identification of who defines a “major city” much less what constitutes a “major city”. Similarly there is no identification of who defines a “load pocket” much less what constitutes a “load pocket”. FAC-008 R8 could further reduces reliability because if the requirement were effected it would allow 30 days response time to reporting such data.</p> <p>NERC Standards MOD-012 & 013 also provides that such data is exchanged and coordinated among all entities. Unlike the IRO standards that require identification of data and the time frame to submit the data, the FAC-008 requires the request to be completed within 30 days. Waiting 30 days for data that is needed in the next day’s operation adversely impacts real time operations. Requirement R8 and its sub-parts to supply the second most limiting element for a piece of equipment serve no purpose. IRO-008 requires the RC to assess its area both day head, as well as every 30 minutes during the day. IRO-009 requires the RC to enact “preventive measures” if an IROL is predicted. The approval of and adherence to these two standards will ensure that the second most limiting component is never an issue. These two IRO standards that “the” most limiting element be respected not just for actual overloads but for predicted overloads. At no time is it allowable for an entity to exceed an established normal rating, only to observe the next most limiting element. The Models used by the RCs will define the level of detail of the data that needs to be provided. If the component data is needed then the RC will request the data be provided per IRO-010, and will be analyzed per IRO-008. If the data is not modeled than having the TO and GO submit that information is not an effective use of time or manpower. The Industry has posted a conforming set of requirements for TOPs, making this request premature or redundant.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT does not believe that the proposed FAC-008-3 is redundant with any other standard. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some</p> | |

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| | <p>owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> <p>Regarding who identifies what systems qualify, the requester must establish that relationship in their request. Responding within 30 days is reasonable since it is recognized that these data cannot be responded to in real-time without pre-analysis.</p> |
| Luminant Power | <p>Luminant agrees that the Facility Rating standard should be revised and thanks the Standard Drafting Team (SDT) for their work and the opportunity to comment. The standard appears to be written to be more applicable to transmission owners and associated equipment and not to that of Generation Owners (GO). Luminant is concerned that the draft standard is not always clear as to what ratings are expected from GOs, and offers the following comments for consideration by the SDT.</p> <p>Requirement R1 is not clear what Ratings documentation has to be developed by the GO. The standard should only apply to the generating unit output capability, and then the equipment from the generator leads to the Point of Interconnection (POI). The requirements should not apply to the individual components that make up the generating unit such as boiler components, feedwater systems, condensate systems, environmental controls, etc. Getting into the details and systems that compose a generation unit would not provide any substantial benefit to the rating of the unit.</p> <p>Requirement R2.4 seems to imply the scope from the generating leads out to the POI, but it needs to be specifically clarified in the standard. Requirement R1 should contain a provision where the rating of a generating unit can be based upon a regulatory or legal limit to unit output. R1.2 appears unnecessary as the prime R1 requirement implies an accurate overall rating. Requirement R2.2 is confusing as to how it applies in relation to R2.1, in particular if the GO uses OEM information to rate the equipment. The footnote on 2.2.4, Operating limitations should be removed. Other NERC standards require unit conditions such as temporary deratings or unit capability changes to be reported to the BA or TOP in a timely manner.</p> <p>Requirement R2 has a Time Horizon of Long Term Planning, and temporary derates do not appear to fit that criteria. Requirement 2.4.2 requests both the normal and emergency rating for equipment from the MPT to the POI. While that may be needed and modeled for some situations, it is not necessary for all facilities. For example, at a generating facility where the lines, breakers, busswork and other electrical components from the MPT to the POI were designed and constructed well in excess of the output capability of the generating unit (and there is no transmission thru flow), the connections may not all be modeled to that level of detail. Luminant suggests the following language revision for 2.4.2: "The scope of the Ratings addressed shall include as a minimum both Normal and Emergency Ratings, where applicable and when requested by the Planning Authority or Planning Coordinator".</p> <p>Requirement R7 needs a boundary on the timeframe for a response. The way the current requirement is written, a requesting entity to send a notice to a TO or GO that they are scheduled to provide information one day later.</p> <p>The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The background material provided with the posting of the standard. During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model)</p> |

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| | <p>to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value. Your suggestions for improvements to Requirements R1 and R2 will be considered with the next revision to the standard.</p> <p>Luminant suggests the language be modified as follows: "...as scheduled by such requesting entities, but not sooner than 30 calendar days from the date of a specific request".</p> <p>The FRSDT made as few revisions to the standard as necessary to facilitate the timeline that the team is working under. The previously approved version of the standard uses the language "as scheduled by such requesting entities."</p> <p>Requirement R8 seems to imply that the applicable GO equipment is that in R2, it is not explicit. In a generating plant, there is a wide variety of equipment that may have a thermal rating. It appears the intent was to address Thermal Ratings for transmission type equipment only. Please clarify that for the GO, R8 only applies to GO equipment from the MPT to the POI.</p> <p>Requirement R8 only applies to GOs to which R2 is applicable. The verbiage in R2 only applies to "equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner".</p> <p>Requirement 8.1 (similar to R7) needs a boundary on the timeframe for a response. Luminant suggests the language be modified as follows: "As scheduled by the requesting entities, but not sooner than 30 calendar days from the date of a specific request".</p> <p>The FRSDT made as few revisions to the standard as necessary to facilitate the timeline that the team is working under. The previously approved version of the standard uses the language "as scheduled by such requesting entities."</p> <p>Requirements 8.2.1 and 8.2.2 could be combined as follows: "The identity and Equipment Rating of the next most limiting</p> |

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| | <p>equipment of the Facility”.</p> <p>The FRSDT wanted to avoid using compound requirements, so each piece of information is listed separately. Your suggestion is an acceptable substitute, but the overall majority of commenters agree with the proposed verbiage.</p> <p>The Requirement R8 proposed changes have an applicability to Generator Owners, however the SAR Applicability Section only has the Transmission Owner box checked.</p> <p>The text box in the standard explains the point that you make with respect to GO applicability:</p> <p style="padding-left: 40px;">R7 and M7 have been subdivided into two requirements (R7 and R8) and two Measures (M7 and M8). To distinguish the ‘new’ language proposed for R8 and M8 from the language that was previously approved under R7 and M7, only the new text is shown in redline</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>Manitoba Hydro</p> | <p>Given the wide range in assumptions in short time overload, NERC should provide guidance for model building and assessments. NERC should outline the ratings to include (eg. should each entity have 15 minute, 30 minute, 1 hour, 4 hour, 8 hour, etc. ratings?) and should suggest how these ratings are documented, communicated and used.</p> <p>The FRSDT designed the requirements of FAC-008-3 to be sufficient for an entity to meet the reliability need of the directive without being prescriptive. The items that you suggest to include, while probably useful and clarifying would result in an extensive industry debate which may not lead to consensus.</p> <p>Also, the industry has previously rejected the requirement to identify the next most limiting facility based on the fact that it was not a reliability need, but commercially driven want.</p> <p>This is the first time that this requirement has been posted for comment and ballot.</p> <p>In its explanation as to why the next most limiting element is required FERC and the SDT have failed to show a reliability need. In Diagram 1 of the Unofficial Comment Form, it is obvious that if a transmission owner provides a continuous and a shorter term rating, the continuous rating of the facility is based on Equipment 3 and the shorter term rating is based on Equipment 2. There is no need to provide two continuous and two shorter term ratings from a reliability perspective.</p> <p>Not all entities provide graphics similar to Diagram 1 with their Facility Ratings. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following</p> |

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| | <p>reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>Manitoba Hydro- Joe D Petaski;Greg C. Parent;S N Fernando;Daniel Prowse</p> | <p>Manitoba Hydro is voting negative for the following reasons: -The industry has previously rejected the requirement to identify the next most limiting facility based on the fact that it was not a reliability need, but commercially driven want. In its explanation as to why the next most limiting element is required, FERC and the SDT have failed to show a reliability need.</p> |
| <p>Response: The FRSDT thanks you for your comment. The industry has not rejected this requirement as this is the first time it has been posted for comment and ballot.</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or</p> | |

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| | <p>"shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>MISO Standards Collaborators</p> | <p>The MISO has some concern with the implementation of the FAC-008-3 standard because it does not benefit or enhance reliability.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Muscatine Power & Water -Tim Reed;John S Bos</p> | <p>MP&W agrees with the comments submitted by MRO NSRS. This affirmative vote reflects our belief that the proposed Standard will enhance the reliability of the Bulk Electric System and is an overall improvement to the two standards that it would replace.</p> |
| | <p>Response: The FRSDT thanks you for your comment. Thank you for your positive comment of support.</p> |
| <p>National Grid</p> | <p>1) National Grid feels it is most appropriate that the requesting party as proposed needs to have a legitimate reliability reason for requesting the information and they would be limited to the particular functional entities noted in the requirement as drafted.</p> <p>Thank you for your comment.</p> <p>2) National Grid already provides responsible parties (including the appropriate Reliability Coordinator, Planning Coordinator, and Transmission Operators) with ratings of shorter terms than continuous, as well as ambient based ratings, which can and do get applied to handle certain type of scenarios presented in the webinar. National Grid believes that there</p> |

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| | <p>is no special request needed for these parties to obtain such ratings, nor is there a need to ignore any equipment in development of such ratings. Moreover, ignoring existing equipment raises question of what potential reliability impacts would come along with this approach.</p> <p>If no entity requests additional information, National Grid is under no obligation or requirement to provide it.</p> <p>3) The treatment of multiple instances of same sized equipment (like several 800A disconnect switches in a circuit), is left unclear. In the webinar, one NERC response said to lump them all together and go to next higher limit. Another said to indicate such was the case that several pieces of equipment impose same limit. It was apparent that the only recourse would be to include language in each entity's ratings methodology should address how this is handled. It is suggested that this issue be addressed in the standard otherwise it will likely need to be addressed in a CAN or Interpretation Request.</p> <p>The FRSDT concurs with your point about adding the verbiage to your Facility Ratings Methodology. Modifying the standard to include this provision in the rating methodology requirement will be considered the next time the standard is revised.</p> <p>4) Description of how this info would be used implied that ops planner might exceed the most limiting element rating and go to next most so long as it was not a closely following relay limit that could put circuit at risk of pulling out. It is not clear to us how a system could be operated in excess of equipment ratings for the appropriate duration. The fact that we establish Short Time Emergency (STE) and Long Time Emergency (LTE) ratings higher than normal ratings that get applied in emergency situations for shorter than normal continuous timeframes seemed to be ignored.</p> <p>The FRSDT did not intend for any entity to exceed the most limiting element of a Facility. The situation described in Diagram 1 may not be applicable to all Facilities. This information is only required to be provided upon request.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>NERC Standards Review Subcommittee</p> | <p>The FERC directive may be too prescriptive in requiring a second limiting element and its facility rating. What might be useful in real-time operations would be a short-term rating of a facility (i.e. one hour rating) that may be already supplied in R2, which requires normal and emergency ratings.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT's scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. The FRSDT has made clarifying revisions to the proposed standard. Please see proposed revisions in the Summary Consideration under Question 1. The background information contained in the last posting provides the following reliability need for the proposed requirement:</p> <p>During the discussions on February 24, FERC staff clarified that the intent of the Order 693 directive was for reliability entities (as defined in</p> | |

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| | <p>the functional Model) to be able to take the Rating information and prepare Operating Plans or Planning Assessments prior to Real-time which could allow for better situational awareness and improved reliability of the bulk electric system. The directive was not intended to provide the System Operator with information to change Ratings in Real-time, but rather to have Operating Plans, Processes or Procedures in place for implementation for the limited subset of Facilities, when requested, whose thermal ratings cause (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major load centers. Each Transmission Owner and Generator Owner is required to have a valid rating methodology (under the requirements of FAC-008-1), each having somewhat unique inherent assumptions. Transmission Owners and Generator Owners define ratings (Normal and Emergency) for some time period at a loading level for each Facility, and the most limiting piece of equipment determines the Rating of the Facility for that time period. Some owners may elect to define the "Emergency Rating" or "shorter term rating" as an 8-hour rating, others may elect to use a 4-hour rating, and some a 1-hour rating or some other value.</p> |
| <p>Niagara Mohawk (National Grid Company)</p> | <p>1) We feel it is most appropriate that the requesting party as proposed needs to have a legitimate reliability reason for requesting the information and they would be limited to the particular functional entities noted in the requirement as drafted. Thank you for your comment.</p> <p>2) National Grid already provides responsible parties (including the appropriate Reliability Coordinator, Planning Coordinator, and Transmission Operators) with ratings of shorter terms than continuous, as well as ambient based ratings, which can and do get applied to handle certain type of scenarios presented in the webinar. National Grid believes that there is no special request needed for these parties to obtain such ratings, nor is there a need to ignore any equipment in development of such ratings. Moreover, ignoring existing equipment raises question of what potential reliability impacts would come along with this approach.</p> <p>If no entity requests additional information, National Grid is under no obligation or requirement to provide it.</p> <p>3) The treatment of multiple instances of same sized equipment (like several 800A disconnect switches in a circuit), is left unclear. In the webinar, one NERC response said to lump them all together and go to next higher limit. Another said to indicate such was the case that several pieces of equipment impose same limit. It was apparent that the only recourse would be to include language in each entity's ratings methodology should address how this is handled. It is suggested that this issue be addressed in the standard otherwise it will likely need to be addressed in a CAN or Interpretation Request.</p> <p>The FRSDT concurs with your point about adding the verbiage to your Facility Ratings Methodology. Modifying the standard to include this provision in the rating methodology requirement will be considered the next time the standard is revised.</p> <p>4) Description of how this info would be used implied that ops planner might exceed the most limiting element rating and go to next most so long as it was not a closely following relay limit that could put circuit at risk of pulling out. It is not clear to us how a system could be operated in excess of equipment ratings for the appropriate duration. The fact that we establish</p> |

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| | <p>Short Time E emergency (STE) and Long Time Emergency (LTE) ratings higher than normal ratings that get applied in emergency situations for shorter than normal continuous timeframes seemed to be ignored.</p> <p>The FRSDT did not intend for any entity to exceed the most limiting element of a Facility. The situation described in Diagram 1 may not be applicable to all Facilities. This information is only required to be provided upon request.</p> |
| <p>Response: The FRSDT thanks you for your comment. Please see responses above.</p> | |
| <p>Pacific Northwest Small Public Power Utility Comment Group</p> | <p>Please see http://www.nerc.com/filez/enforcement/FinalFiled_ANOP_NOC-505.pdf for an example of how FAC-009-1 R1 and R2 (to be replaced by FAC-008-3 R6 and R7) for an example of how these regulations are being applied improperly to radially operated local distribution systems. Suggest “4.1. Transmission Owner (radially operated facilities excluded).”</p> |
| <p>Response: The FRSDT thanks you for your comment. We will forward your comment, which is asking for a revision to the standard that is outside the scope of this project, for inclusion in the NERC Issues Database for future consideration.</p> | |
| <p>PacifiCorp</p> | <p>Under FAC-008-3 Requirement R8, each Transmission Owner and Generator Owner (subject to Requirement R2) shall provide certain information, including facility ratings information, to the listed registered entities. The information to be provided includes, according to the proposed Requirement R8, information related to “solely and jointly owned Facilities that are existing Facilities, new Facilities, modifications to existing Facilities and re-ratings of existing Facilities).” The requirement for all Transmission Owners and Generator Owners to submit data for jointly owned facilities will mostly likely result in the following: 1) duplicative information being submitted by joint-owners of the same Facilities; and 2) while only one joint owner is likely to have responsibility for developing facility ratings, other joint owners may become liable under this requirement for activities over which they do not have clear authority to perform. Requirement R8, as written, is relatively clear and unambiguous and PacifiCorp agrees with what appears to be the intent of the requirement (i.e. that there are no gaps in facilities ratings that occur due to joint-ownership arrangements). However, due to ambiguity as to which entity or entities to which the requirement may be applicable, the standard may not be enforced effectively or equitably. PacifiCorp suggests that, to resolve this issue, the standard should require that an entity that jointly-owns Facilities designate a single registered entity as responsible for the provision of the required information.</p> |
| <p>Response: The FRSDT thanks you for your comment. Since this information must be requested, it would be unlikely that duplicate information would be provided. Nothing in the standard prevents joint owning entities from designating a responsible party.</p> | |
| <p>SERC Reliability Corporation – Carter B. Edge</p> | <p>I am voting affirmative with the understanding that this standards revision proposes to address the Order 693 directive with an equally effective alternative that addresses the reliability concern of the original directive.</p> |

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| <p>Response: The FRSDT thanks you for your comment. Thank you for your supportive comment.</p> | |
| <p>Southern Company Generation (SCG) Technical Services Southern Company Transmission</p> | <p>The following comment uses the Comment form example definitions and Diagram 1 from the Reliability Objective Discussion section: We believe that the intent of the Directive’s requirement, as clarified in the September 16, 2010 Order, is to identify situations where an increased short term or emergency rating of Equipment 3 could result in Equipment 2 becoming the limiting component in the short term. In that case the identity of both equipments and their ratings, the Equipment 3 continuous rating and the Equipment 2 shorter term rating, would seem to meet the Directive’s clarified requirement. In cases where the limiting equipment’s continuous rating is equal to its emergency rating (Equipment 3 blue curve is a straight line) there would not be a need to specify a second component. The “Reliability Objective Discussion” and R 8.2.2 goes much further by suggesting that four data points (two for Equipment 3 and two for Equipment 2) are required being the continuous and emergency ratings for limiting and next most limiting equipment.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. This order clearly requires the identification of the second most limiting equipment. Requirement R8, Part 8.2.2 has been revised by replacing “Equipment” with “thermal” ratings. If you have multiple sets of ratings, then it is expected that the information requested under Requirement R8, Part 8.2.2 will be for each rating that is requested.</p> | |
| <p>SRP</p> | <p>A significant amount of staff time would be required to comply with the proposed “next most limiting element” requirement. It’s not clear that the information would be of value to FERC or NERC. In many cases the administrative burden on the utilities would only provide trivial or self-evident results.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. Since rating must consider determine the “most limiting element, the second most limiting element is generally known.</p> | |
| <p>Sunflower Electric Power Corporation- Noman Lee Williams</p> | <p>Even though the SDT has developed what some may consider a reasonable compromise by requiring identification of the second most limiting component, it is not clear how this results in a more reliable system. In addition, from a reliability perspective, demonstrating that facility ratings do not exceed the rating of the most limiting component per Requirement 1.2 is sufficient. Some entities might be interested in the second most limiting component in order to know how much the rating can be increased. But this is more of an economic evaluation when developing a specific project rather than a reliability issue.</p> |
| <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments. Yes, SDT does believe this is the most reasonable way to address the issue.</p> | |

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| <p>Tennessee Valley Authority - Larry Akens; Ian S Grant; David Thompson; Marjorie S. Parsons</p> | <p>TO Comments:</p> <ul style="list-style-type: none"> o For 3.1 add “conservative engineering judgment” as an option. If a CT is assumed to be rated for 1.0 rating factor because there is no certainty of whether it has a rating factor of 2.0, does this fall under engineering “analysis?” The rating factor is not provided by the manufacturer for older equipment and can’t be obtained if they are out of business now. For some equipment certain manufacturers may have been tested and ratings verified, but that may not apply to other manufacturers. <p>GO Comments</p> <ul style="list-style-type: none"> o The standard is not written clearly to determine the requirements for the GO in R1 and R2. In our company, the GO owns the GSU, with the transition to the TO occurring at the high side terminals of the GSU. My assumption for complying with this standard as a GO is that R1 includes the generator and the GSU, and R2 is not applicable to my company because no equipment falls into that category. o R1 - As written, R1 clearly includes the GSU for our situation, but 1.1 only lists the generator requirements, the GSU is not listed in 1.1. Suggested addition underlined: “1.1 The documentation shall contain assumptions used to rate the generator and the GSU if owned by the GO, and at least one of the following.....” o R2 - The requirement states “Each GO shall have a documented methodology for determining Facility Ratings of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the TO.....” The problem is that there are 2 locations specified in R1, the low side terminals of the GSU and the high side terminals of the GSU. It’s not clear which location is being referred to in R2. In our company, where the high side of the GSU is the point of ownership transition, there is no equipment between the “location specified in R1” and the point of interconnection with the TO, it is the same point. |
| <p>Response: The FRSDT thanks you for your comment. The comments pertaining to the GO applicability and Requirements R1, R2 and R3 are outside the scope of the supplemental SAR. We will forward your comments for inclusion in the NERC Issues Database for future consideration.</p> | |
| <p>The Valley Group, a Nexans company</p> | <p>In December 2010, NERC Smart Grid Task Force published Report “Reliability Considerations from the Integration of Smart Grid”, and in it, there is an excerpt on “Integration of Smart Grid Technology into the Bulk Power System”, Section 3, page 12. In this excerpt, it is stated that Smart Grid provides the ability to create an overarching, coordinated and hierarchical approach to automation, control and effectiveness. Among examples of smart grid technologies, Dynamic Thermal Circuit Rating (DTCR) devices were numbered. Although the objective of NERC Project 2009-06 is to identify the limiting component(s) and next limiting component(s) for all critical facilities, and not about Smart Grid integration; however, it should be beneficial to state a need for smart grid technologies integration, especially DTCR devices, into this NERC project. While the paramount importance is to maintain the reliability and integrity of the bulk power system, it is of equal importance to introduce reliability and economic benefits that Smart Grid technologies are bringing. So careful planning, coordination, and possibly review of the current Facility Rating Methodologies should be encouraged and introduced at present time. Static transmission line ratings, and static ratings of power system equipment in general, belong to past</p> |

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| | practices, and entities should be encouraged to embrace Smart Grid into their systems. |
| <p>Response: The FRSDT thanks you for your comment. Thank you for your forward looking comment. This may be considered in future revisions. The SDT’s scope was to address the remaining issues of FERC Order 693.</p> | |
| United Illuminating Company | <p>R8.2 “... for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket:” “Major City” is an undefined term. It is akin to terms like Bulk Power System, and Integrated. Everyone has an opinion on what it means. What are the properties utilized to identify a municipality as a “Major City”. These properties/attributes should be in an attachment. Does 8.2 refer to any load pocket or only Major Load Pockets. How is a Major Load Pocket determined? These properties/attributes should be in an attachment.</p> |
| <p>Response: The FRSDT thanks you for your comment. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. This will provide better guidance with respect to “major load centers” as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.</p> <p>The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.</p> | |
| We Energies | <p>We maintain that the changes based on the FERC directive should not be applied to Generator Owners. The connection from the generator to the transmission system is a radial connection which by its nature does not significantly impact the power transfer capability across the Bulk Electric System. The effort and cost for Generator Owners to be subject to these additional requirements is not accompanied by an increase in reliability, and is therefore not justified.</p> |
| <p>Response: The FRSDT thanks you for your comment. Requirement R8 only applies to GOs to which R2 is applicable. The verbiage in R2 only</p> | |

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| Organization | Question 5 Comment |
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| Xcel Energy | <p>As explained in the response to question 1 above, if the purpose of Requirement 8 is to aid in the operation of the BES, it does not accomplish this, since the most limiting element must be respected. Knowledge of a higher rating (from the next most limiting element) could give an operator a false sense that the system could be operated at a higher limit. If the purpose of Requirement 8 is to aid in planning, there is a lot of additional information that would be required. In order to determine a new facility rating assuming the current most limiting factor is not present, then a study period longer than the proposed 30 days may be required. There are many factors that would need to be considered in making this determination. With that said, Xcel Energy feels that this type of planning analysis is already occurring and minimal increase in reliability would be gained by such a requirement. Transmission Planners are already tasked with developing plans to serve projected loads at various generation/load patterns. To properly do this, information must already be evaluated with area utilities on increasing ratings when needed. If the real goal is to determine what would need to be done to bring a facility up to a higher rating, the requesting entity should identify a target loading level (MVA) for the analysis in their request to the entity that owns the equipment. This study would be based on a requested loading level (MVA), as one could not derive this from the next limiting element. The proposed requirement also presupposes that all limitations are thermal in nature. For some northern entities, while the most limiting factor may be equipment, the next most limiting factor in the ability to move power may be a presidential permit. Likewise, for a generating facility, the next most limiting factor may be a piece of equipment in the balance of the plant (boiler, turbine, etc.). The requirement does not seem to recognize this.</p> <p>Finally, Xcel Energy believes the requirement should more clearly define who can request the “next most limiting element”. While the requirement clearly states who the information must be provided to, it does not seem to limit who can request that information. Limiting who can request this information would help keep this requirement more focused on reliability, and may prevent market participants from making requests that are not focused on reliability. Xcel Energy proposes the following modification to R8.1 and R8.2:8.1. As scheduled by the requesting entities (associated Reliability Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s))</p> <p>8.1.1. Facility Ratings 8.1.2. Identity of the most limiting equipment of the Facilities 8.2. Within 30 calendar days (or a later date if specified by a requesting entity), for any requested Facility with a Thermal Rating that the requester has identified as having an Interconnection Reliability Operating Limit, limiting Total Transfer Capability, impeding generator deliverability, or impeding service to a major city or load pocket: 8.2.1. Identity of the existing next most limiting equipment of the Facility 8.2.2. The Equipment Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.</p> |
| | <p>Response: The FRSDT thanks you for your comment. The SDT’s scope was to address the remaining issues of FERC Order 693, which requires the inclusion of the topics of your comments.</p> <p>The proposed standard does limit the scope of who can request the information. Clarifying revisions were made to eh standard to address your concerns. Please see the proposed revision under the Summary Consideration for Question 1. The FRSDT has revised the requirement to provide more clarity around the entities that may request the information contained in the requirement. The FRSDT intended for impacted entities to be able to request this information to better plan and operate their systems. The language has been modified to better reflect this intent as well as to</p> |

| Organization | Question 5 Comment |
|--------------|--|
| | <p>more closely mirror the language of the FERC directive. The team added language to provide more clarity on the scope of entities that may request the specified additional information only for impacted facilities under their authority. The FRSDT also revised the term "a major city or load pocket" to "a major load center". Power engineers and operators will be qualified to make the judgment of what a major load center is (allowing relative judgment) rather than having to specify the demographics of what a major city is or define a load pocket. With the proposed clarification, the FRSDT does not believe that the requirement is subject to erroneous interpretation by entities since the requesting entity makes the determination as to whether their Facilities are impacted. This will provide better guidance with respect to "major load centers" as the impacted entity will make the determination through studies and request the ratings information for facilities under its authority. The FRSDT chose this specific language because the entities listed do not necessarily own Facilities. The Reliability Coordinator does not necessarily own assets, but has a reliability authority over certain Facilities. The Planning Coordinator or Transmission Planner do not own assets but have planning authority over a set of Facilities. The Transmission Operator does not necessarily own assets but has operational authority over those Facilities. The Transmission Owner does own its Facilities and has authority over those Facilities.</p> <p>The FRSDT believes that the revised language provides sufficient guidance for applicable entities and provides enough latitude to address varying scenarios which apply under this requirement.</p> |

Project 2009-06 Facility Ratings Implementation Plan

Implementation Plan for FAC-008-3 – Facility Ratings

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should all be retired when FAC-008-03 becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)

Compliance with the Standard

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before FAC-008-3 becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

Project 2009-06 Facility Ratings Implementation Plan

Implementation Plan for FAC-008-~~32~~ – Facility Ratings

Prerequisite Approvals

None

Revisions to Approved Standards and Definitions

FAC-008-01— Facility Ratings Methodology and FAC-009-01 — Establish and Communicate Facility Ratings, and FAC-008-2 – Facility Ratings, should ~~all both~~ be retired when FAC-008-0~~32~~ becomes effective. (While FAC-008-2 was approved in 2010, it has not yet become effective in any jurisdiction. Once approved, FAC-008-3 will be filed for approval with applicable regulatory and governmental authorities; FAC-008-2 will not be filed for approval.)

Compliance with the Standard

Once this standard becomes effective, the responsible entities identified in the applicability section of the standard must comply with the requirements. This includes:

- Transmission Owners
- Generator Owners

Effective Date

All requirements in the standard should become effective on the first day of the first calendar quarter that is twelve months beyond the date the standard is 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.

Entities should already be compliant with both FAC-008-1 and FAC-009-1. As envisioned, entities should already have a Facility Rating Methodology (as required by FAC-008-1 Requirement R1) and should already have Facility Ratings developed in accordance with that methodology (as required by FAC-009-1 Requirement R1). The twelve months delay before ~~the new standard~~ FAC-008-3 becomes effective should provide entities sufficient time to update, where needed, both their Facility Rating Methodology and their associated Facility Ratings.

A. Introduction

1. **Title:** **Facility Ratings**
2. **Number:** FAC-008-3
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. **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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
 - 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
 - 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
 - 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 8.1.** As scheduled by the requesting entities:
 - 8.1.1.** Facility Ratings
 - 8.1.2.** Identity of the most limiting equipment of the Facilities
- 8.2.** Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that limits the use of Facilities under the requester's authority by causing any of the following: 1) An Interconnection Reliability Operating Limit, 2) A limitation of Total Transfer Capability, 3) An impediment to generator deliverability, or 4) An impediment to service to a major load center:
 - 8.2.1.** Identity of the existing next most limiting equipment of the Facility
 - 8.2.2.** The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement R4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings, 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 R5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement R6).
- M7.** Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R7.
- M8.** Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability

Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R8.

D. Compliance

1. Compliance Monitoring Process

1.1. **Compliance Enforcement Authority**

Regional Entity

1.2. **Compliance Monitoring and Enforcement Processes:**

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

1.3. **Data Retention**

The Generator Owner shall keep its current documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.

The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, and Measure M5, for three calendar years.

The Generator Owner shall keep evidence for Measure M7 for three calendar years.

The Transmission Owner (and Generator Owner that is subject to Requirement R2) shall keep evidence for Measure M8 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.

1.4. **Additional Compliance Information**

None

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|---|
| | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | <p>The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request.</p> | <p>The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request.</p> | <p>The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request.</p> | <p>The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3)</p> |
| R5 | <p>The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5)</p> | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | <p>The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5)</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|---|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to and including 15 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. OR The Generator Owner failed to provide its Facility Ratings to the requesting entities. |
| R8 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to and including 15 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 100%, but not less than or equal to 95% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 95%, but not less than or equal to 90% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 90%, but not less than or equal to 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the required Rating information to the requesting entity, but did so more |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|---|---|
| | <p>required Rating information to the requesting entity, but the information was provided up to and including 15 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 100%, but not less than or equal to 95% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 15 calendar days but less than or equal to 25 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 95%, but not less than or equal to 90% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 25 calendar days but less than or equal to 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 90%, but no less than or equal to 85% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>than 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 85 % of the required Rating information to the requesting entity. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity failed to provide its Rating information to the requesting entity. (R8, Part 8.1)</p> |

E. Regional Variances

None.

F. Associated Documents

Version History

| Version | Date | Action | Change Tracking |
|---------|--------------|-------------------------------|--|
| 1 | Feb 7, 2006 | Approved by Board of Trustees | New |
| 1 | Mar 16, 2007 | Approved by FERC | New |
| 2 | May 12, 2010 | Approved by Board of Trustees | Complete Revision, merging FAC_008-1 and FAC-009-1 under Project 2009-06 and address directives from Order 693 |
| 3 | TBD | Addition of Requirement R8 | Project 2009-06 Expansion to address third directive from Order 693 |

A. Introduction

1. **Title:** **Facility Ratings**
2. **Number:** FAC-008-3
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. **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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
- 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
- Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
- 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. [*Violation Risk Factor: Lower*] [*Time Horizon: Long-term Planning*]
- 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
- Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
- Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
- 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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]*
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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] [Time Horizon: Operations Planning]*
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7. Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R8. Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide requested information as specified below (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), Transmission Owner(s) and Transmission Operator(s): *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

- 8.1. As scheduled by the requesting entities:
 - 8.1.1. Facility Ratings
 - 8.1.2. Identity of the most limiting equipment of the Facilities
- 8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that ~~limits the use of Facilities under the requester's authority by causing the requester has identified as having any of the following: 1) A-an~~ Interconnection Reliability Operating Limit, ~~2) A limitation of~~ Total Transfer Capability, ~~3) An impediment to ng~~ generator deliverability, or ~~4) An impediment to impeding~~ service to a major ~~city or load pocket~~ center:
 - 8.2.1. Identity of the existing next most limiting equipment of the Facility
 - 8.2.2. The ~~Equipment Thermal~~ Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

C. Measures

- M1. Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2. Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3. Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4. Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement ~~R~~4.
- M5. 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 or a Generator Owner's documentation for determining its Facility Ratings, 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 ~~R~~5.
- M6. Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement ~~R~~6).
- M7. Each Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R7.
- M8. Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability

Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R8.

D. Compliance

1. Compliance Monitoring Process

1.1. **Compliance Enforcement Authority**

Regional Entity

1.2. **Compliance Monitoring and Enforcement Processes:**

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

1.3. **Data Retention**

The Generator Owner shall keep its current documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.

The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, and Measure M5, for three calendar years.

The Generator Owner shall keep evidence for Measure M7 for three calendar years.

The Transmission Owner (and Generator Owner that is subject to Requirement R2) shall keep evidence for Measure M8 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.

1.4. **Additional Compliance Information**

None

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request. | The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request. | The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3) |
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| R7 | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to <u>and including</u> 15 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. | The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. OR The Generator Owner failed to provide its Facility Ratings to the requesting entities. |
| R8 | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to <u>and including</u> 15 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 100%, but not less than <u>or equal to</u> 95% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 95%, but not less than <u>or equal to</u> 90% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 90%, but not less than <u>or equal to</u> 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R8, Part 8.1) OR The responsible entity provided less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1) OR The responsible entity provided the required Rating information to the requesting entity, but did so more |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|---|--|---|
| | <p>required Rating information to the requesting entity, but the information was provided up to and including 15 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 100%, but not less than <u>or equal to</u> 95% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 15 calendar days but less than or equal to 25 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 95%, but not less than <u>or equal to</u> 90% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>The responsible entity provided the required Rating information to the requesting entity, but did so more than 25 calendar days but less than or equal to 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 90%, but no less than <u>or equal to</u> 85% of the required Rating information to the requesting entity. (R8, Part 8.2)</p> | <p>than 35 calendar days late. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity provided less than 85 % of the required Rating information to the requesting entity. (R8, Part 8.2)</p> <p>OR</p> <p>The responsible entity failed to provide its Rating information to the requesting entity. (R8, Part 8.1)</p> |

E. Regional Variances

None.

F. Associated Documents

Version History

| <u>Version</u> | <u>Date</u> | <u>Action</u> | <u>Change Tracking</u> |
|----------------|---------------------|--------------------------------------|---|
| <u>1</u> | <u>Feb 7, 2006</u> | <u>Approved by Board of Trustees</u> | <u>New</u> |
| <u>1</u> | <u>Mar 16, 2007</u> | <u>Approved by FERC</u> | <u>New</u> |
| <u>2</u> | <u>May 12, 2010</u> | <u>Approved by Board of Trustees</u> | <u>Complete Revision, merging FAC 008-1 and FAC-009-1 under Project 2009-06 and address directives from Order 693</u> |
| <u>3</u> | <u>TBD</u> | <u>Addition of Requirement R8</u> | <u>Project 2009-06 Expansion to address third directive from Order 693</u> |

A. Introduction

1. **Title:** Facility Ratings
2. **Number:** FAC-008-~~23~~
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. **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.** Each Generator Owner shall have documentation for determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up transformer. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 1.1.** The documentation shall contain assumptions used to rate the generator and at least one of the following:
 - Design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. ANSI and IEEE), or an established engineering practice that has been verified by testing or engineering analysis.
 - Operational information such as commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.
 - 1.2.** The documentation shall be consistent with the principle that the Facility Ratings do not exceed the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- R2.** Each Generator Owner shall have a documented methodology for determining Facility Ratings (Facility Ratings methodology) of its solely and jointly owned equipment connected between the location specified in R1 and the point of interconnection with the Transmission Owner that contains all of the following. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*
 - 2.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility(ies) shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.

- One or more industry standards developed through an open process such as Institute of Electrical and Electronic Engineers (IEEE) or International Council on Large Electric Systems (CIGRE).
 - A practice that has been verified by testing, performance history or engineering analysis.
- 2.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
- 2.2.1.** Equipment Rating standard(s) used in development of this methodology.
 - 2.2.2.** Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 2.2.3.** Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 2.2.4.** Operating limitations.¹
- 2.3.** A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
- 2.4.** The process by which the Rating of equipment that comprises a Facility is determined.
- 2.4.1.** The scope of equipment addressed shall include, but not be limited to, conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 2.4.2.** The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R3.** Each Transmission Owner shall 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 and R2) that contains all of the following: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*
- 3.1.** The methodology used to establish the Ratings of the equipment that comprises the Facility shall be consistent with at least one of the following:
 - Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating.
 - 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).
 - A practice that has been verified by testing, performance history or engineering analysis.
 - 3.2.** The underlying assumptions, design criteria, and methods used to determine the Equipment Ratings identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
 - 3.2.1.** Equipment Rating standard(s) used in development of this methodology.

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

- 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications.
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time).
 - 3.2.4. Operating limitations.²
 - 3.3. A statement that a Facility Rating shall respect the most limiting applicable Equipment Rating of the individual equipment that comprises that Facility.
 - 3.4. The process by which the Rating of equipment that comprises a Facility is determined.
 - 3.4.1. 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.
 - 3.4.2. The scope of Ratings addressed shall include, as a minimum, both Normal and Emergency Ratings.
- R4. Each Transmission Owner shall make its Facility Ratings methodology and each Generator Owner shall each make its documentation for determining its Facility Ratings and 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]*
- R5. If a Reliability Coordinator, Transmission Operator, Transmission Planner or Planning Coordinator provides documented comments on its technical review of a Transmission Owner's Facility Ratings methodology or Generator Owner's documentation for determining its Facility Ratings and its Facility Rating 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] [Time Horizon: Operations Planning]*
- R6. Each Transmission Owner and Generator Owner shall have Facility Ratings for its solely and jointly owned Facilities that are consistent with the associated Facility Ratings methodology or documentation for determining its Facility Ratings. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R7. Each ~~Transmission Owner and~~ Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) as scheduled by such requesting entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*
- R8. Each Transmission Owner (and each Generator Owner subject to Requirement R2) shall provide requested information as specified below (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), Transmission Owner(s) and Transmission Operator(s): *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

8.1. As scheduled by the requesting entities:

8.1.1. Facility Ratings

8.1.2. Identity of the most limiting equipment of the Facilities

8.2. Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that limits the use of Facilities under the requester's authority by causing any of the following: 1) An Interconnection Reliability Operating Limit, 2) A limitation of Total Transfer Capability, 3) An impediment to generator deliverability, or 4) An impediment to service to a major load center:

8.2.1. Identity of the existing next most limiting equipment of the Facility

8.2.2. The Thermal Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

C. Measures

- M1.** Each Generator Owner shall have documentation that shows how its Facility Ratings were determined as identified in Requirement 1.
- M2.** Each Generator Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.
- M3.** Each Transmission Owner shall have a documented Facility Ratings methodology that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.
- M4.** Each Transmission Owner shall 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 4. The Generator Owner shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it made its documentation for determining its Facility Ratings or its Facility Ratings methodology available for inspection within 21 calendar days of a request in accordance with Requirement ~~4~~R4.
- M5.** 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 or a Generator Owner's documentation for determining its Facility Ratings, 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 ~~5~~R5.
- M6.** Each Transmission Owner and Generator Owner shall have evidence to show that its Facility Ratings are consistent with the documentation for determining its Facility Ratings as specified in Requirement R1 or consistent with its Facility Ratings methodology as specified in Requirements R2 and R3 (Requirement ~~6~~R6).
- M7.** Each ~~Transmission Owner and~~ Generator Owner shall 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), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement ~~7~~R7.
- M8.** Each Transmission Owner (and Generator Owner subject to Requirement R2) shall have evidence, such as a copy of a dated electronic note, or other comparable evidence to show that it provided its Facility Ratings and identity of limiting equipment to its associated Reliability

Coordinator(s), Planning Coordinator(s), Transmission Planner(s), Transmission Owner(s) and Transmission Operator(s) in accordance with Requirement R8.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

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

~~Not Applicable~~

~~1.3.1.2.~~ **Compliance Monitoring and Enforcement Processes:**

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

~~1.4.1.3.~~ **Data Retention**

The Generator Owner shall keep its current documentation (for R1) and any modifications to the documentation that were in force since last compliance audit period for Measure M1 and Measure M6.

The Generator Owner shall keep its current, in force Facility Ratings methodology (for R2) and any modifications to the methodology that were in force since last compliance audit period for Measure M2 and Measure M6.

The Transmission Owner shall keep its current, in force Facility Ratings methodology (for R3) and any modifications to the methodology that were in force since the last compliance audit for Measure M3 and Measure M6.

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 M6.

The Generator Owner and Transmission Owner shall each keep evidence for Measure M4, ~~Measure M5,~~ and Measure ~~M7~~M5, for three calendar years.

The Generator Owner shall keep evidence for Measure M7 for three calendar years.

The Transmission Owner (and Generator Owner that is subject to Requirement R2) shall keep evidence for Measure M8 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.

~~1.5.1.4.~~ **Additional Compliance Information**

None

Violation Severity Levels

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|---|--|---|
| R1 | N/A | <ul style="list-style-type: none"> The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.1. | The Generator Owner’s Facility Rating documentation did not address Requirement R1, Part 1.2. | The Generator Owner failed to provide documentation for determining its Facility Ratings. |
| R2 | <p>The Generator Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology did not address all the components of Requirement R2, Part 2.4.</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology, three of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1. 2.2.1 2.2.2 2.2.3 2.2.4 | <p>The Generator Owner’s Facility Rating methodology failed to recognize a facility’s rating based on the most limiting component rating as required in Requirement R2, Part 2.3</p> <p>OR</p> <p>The Generator Owner failed to include in its Facility Rating Methodology four or more of the following Parts of Requirement R2:</p> <ul style="list-style-type: none"> 2.1 2.2.1 2.2.2 2.2.3 2.2.4 |
| R3 | <p>The Transmission Owner failed to include in its Facility Rating methodology one of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner failed to include in its Facility Rating methodology two of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.1 3.2.1 | <p>The Transmission Owner’s Facility Rating methodology did not address either of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> 3.4.1 3.4.2 | <p>The Transmission Owner’s Facility Rating methodology failed to recognize a Facility’s rating based on the most limiting component rating as required in Requirement R3, Part 3.3</p> <p>OR</p> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|--|--|--|---|
| | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <ul style="list-style-type: none"> • 3.2.2 • 3.2.3 • 3.2.4 | <p>OR</p> <p>The Transmission Owner failed to include in its Facility Rating methodology three of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 | <p>The Transmission Owner failed to include in its Facility Rating methodology four or more of the following Parts of Requirement R3:</p> <ul style="list-style-type: none"> • 3.1 • 3.2.1 • 3.2.2 • 3.2.3 • 3.2.4 |
| R4 | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 21 calendar days but less than or equal to 31 calendar days after a request. | The responsible entity made its Facility Ratings methodology or Facility Ratings documentation available within more than 31 calendar days but less than or equal to 41 calendar days after a request. | The responsible entity made its Facility Rating methodology or Facility Ratings documentation available within more than 41 calendar days but less than or equal to 51 calendar days after a request. | The responsible entity failed to make its Facility Ratings methodology or Facility Ratings documentation available in more than 51 calendar days after a request. (R3) |
| R5 | The responsible entity provided a response in more than 45 calendar days but less than or equal to 60 calendar days after a request. (R5) | <p>The responsible entity provided a response in more than 60 calendar days but less than or equal to 70 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, and the response indicated that a change will not be made to the Facility Ratings methodology or Facility Ratings documentation but did not indicate why no change will be made. (R5)</p> | <p>The responsible entity provided a response in more than 70 calendar days but less than or equal to 80 calendar days after a request.</p> <p>OR</p> <p>The responsible entity provided a response within 45 calendar days, but the response did not indicate whether a change will be made to the Facility Ratings methodology or Facility Ratings documentation. (R5)</p> | The responsible entity failed to provide a response as required in more than 80 calendar days after the comments were received. (R5) |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|----------------------------|---|--|--|--|
| R6 | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for 5% or less of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 5% or more, but less than up to (and including) 10% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 10% up to (and including) 15% of its solely owned and jointly owned Facilities. (R6) | The responsible entity failed to establish Facility Ratings consistent with the associated Facility Ratings methodology or documentation for determining the Facility Ratings for more than 15% of its solely owned and jointly owned Facilities. (R6) |
| <u>R7</u> | <u>The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to and including 15 calendar days.</u> | <u>The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days.</u> | <u>The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days.</u> | <u>The Generator Owner provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days.</u> <u>OR</u> <u>The Generator Owner failed to provide its Facility Ratings to the requesting entities.</u> |
| R7 <u>R8</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by up to <u>and including</u> 15 calendar days. (R7 <u>(R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided less than 100%, but not less than or equal to 95% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided the</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 15 calendar days but less than or equal to 25 calendar days. (R7 <u>(R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided less than 95%, but not less than or equal to 90% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 25 calendar days but less than or equal to 35 calendar days. (R7 <u>(R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided less than 90%, but not less than or equal to 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> | The responsible entity provided its Facility Ratings to all of the requesting entities but missed meeting the schedules by more than 35 calendar days. (R7) <u>(R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided less than 85% of the required Rating information to all of the requesting entities. (R8, Part 8.1)</u> <u>OR</u> <u>The responsible entity provided the required Rating information to the</u> |

| R # | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|-----|---|--|--|---|
| | <p><u>required Rating information to the requesting entity, but the information was provided up to and including 15 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 100%, but not less than or equal to 95% of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> | <p><u>The responsible entity provided the required Rating information to the requesting entity, but did so more 15 calendar days but less than or equal to 25 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 95%, but not less than or equal to 90% of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> | <p><u>The responsible entity provided the required Rating information to the requesting entity, but did so more than 25 calendar days but less than or equal to 35 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 90%, but no less than or equal to 85% of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> | <p><u>requesting entity, but did so more than 35 calendar days late. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity provided less than 85 % of the required Rating information to the requesting entity. (R8, Part 8.2)</u></p> <p><u>OR</u></p> <p><u>The responsible entity failed to provide its Rating information to the requesting entity. (R8, Part 8.1)</u></p> |

E. Regional Variances

None.

F. Associated Documents

Version History

| <u>Version</u> | <u>Date</u> | <u>Action</u> | <u>Change Tracking</u> |
|----------------|---------------------|--------------------------------------|---|
| <u>1</u> | <u>Feb 7, 2006</u> | <u>Approved by Board of Trustees</u> | <u>New</u> |
| <u>1</u> | <u>Mar 16, 2007</u> | <u>Approved by FERC</u> | <u>New</u> |
| <u>2</u> | <u>May 12, 2010</u> | <u>Approved by Board of Trustees</u> | <u>Complete Revision, merging FAC 008-1 and FAC-009-1 under Project 2009-06 and address directives from Order 693</u> |
| <u>3</u> | <u>TBD</u> | <u>Addition of Requirement R8</u> | <u>Project 2009-06 Expansion to address third directive from Order 693</u> |



NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement

Project 2009-06 Facility Ratings Expansion

Recirculation Ballot Open May 12-23, 2011

Now available at: <https://standards.nerc.net/CurrentBallots.aspx>

Recirculation Ballot Window Open Until 8 p.m. Eastern on May 23, 2011

A recirculation ballot window for standard FAC-008-3 – Facility Ratings is open **until 8 p.m. Eastern on Monday, May 23, 2011.**

FERC issued an Order on March 17, 2011 that requires NERC to file a version of FAC-008 that addresses all directives from Order 693 related to FAC-008 by June 15, 2011. Two of the three directives were already addressed in the version of FAC-008 that was approved by its ballot pool on March 18, 2010. The standard posted for recirculation ballot includes Requirements R8 to address the third directive as described more fully in the background information provided at the end of this announcement.

Instructions

In the recirculation ballot, votes are counted by exception. Only members of the ballot pool may cast a ballot; all ballot pool members may change their prior votes. A ballot pool member who failed to cast a ballot during the last ballot window may cast a ballot in the recirculation ballot window. If a ballot pool member does not participate in the recirculation ballot, that member's last vote cast in the initial ballot that ended on May 2, 2011 will be carried over and used to determine if there are sufficient affirmative votes for this standard to pass.

We encourage all members of the ballot pool to review the following information and the revised standard before casting a ballot.

There were several comments submitted during the last comment/ballot period that proposed clarifying changes surrounding three issues:

- 1) clarify which entities can request the information identified in Requirement R8,
- 2) clarify terms including “generator deliverability,” “major city,” and “load pocket”
- 3) clarify that the information requested is limited to thermal ratings

To clarify which entities can request the information identified in Requirement R8, the drafting team added language to specify that the requester must be an entity that has authority over the associated Facility.

To further clarify the range of facilities for which the requester may seek additional information, the drafting team added a phrase to indicate that the facility must be causing one of the following:

- 1) An Interconnection Reliability Operating Limit, 2) A limitation of Total Transfer Capability, 3) An impediment to generator deliverability, or 4) An impediment to service to a major load center.

With the additional clarity that the requester is limited to an entity with authority over the facility and the additional clarity indicating that the thermal limit must be causing one of the four conditions above, it is clearer that the requester is the entity that determines the impact and should have studies or information to support that impact.

To clarify that the additional information that must be provided under Requirement R8, Part 8.2.2, is limited to thermal ratings of the associated equipment the drafting team changed “Equipment Rating” to “Thermal Rating.”

The proposed clarified Requirement R8 is shown below:

Within 30 calendar days (or a later date if specified by the requester), for any requested Facility with a Thermal Rating that **limits the use of Facilities under the requester’s authority by causing the requester has identified as having any of the following: 1) A an Interconnection Reliability Operating Limit, 2) A limitation ing-of Total Transfer Capability, 3) An impediment ng to generator deliverability, or 4) An impediment to-impeding service to a major city-or-load center-pocket:**

8.2.1. Identity of the existing next most limiting equipment of the Facility

8.2.2. The **Equipment-Thermal** Rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

The team also corrected some typographical errors in the Measures and made some minor revisions to the VSLs to bring them into closer alignment with the exact language of the associated requirement

Members of the ballot pool associated with this project may log in and submit their votes from the following page: <https://standards.nerc.net/CurrentBallots.aspx>

Next Steps

Voting results will be posted and announced after the ballot window closes. This standard is scheduled to be submitted to the Board of Trustees, and filed for regulatory approval by June 15, 2011.

Background

The Facility Ratings Standard Drafting Team (FR SDT) has been tasked with creating a requirement to address a Supplemental SAR to address the reliability concerns related to Facility Ratings initially discussed in paragraphs 756 and 771 of FERC’s Order 693, and further explained in paragraph 76 of FERC’s “Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay,” September 16, 2010. These concerns relate to ensuring broad situational awareness regarding the most limiting elements of Facilities.

In Order 693, FERC explained in paragraph 756:

“...The Commission’s proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets.”

And provided further direction in paragraph 771:

“...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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.”

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

“In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event.”

On February 24, 2011, members of the FR SDT met with NERC and FERC staff to discuss the original directive from FERC Order 693 as well as the subsequent guidance issued in the September 16, 2010 Order.

NERC received a final order on March 17, 2011 granting the ERO 90 days to file a version of FAC-008 that addresses all three of the directives from Order 693, making the filing due on June 15, 2011.

Standards Process

The [Standard Processes Manual](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Monica Benson,
Standards Process Administrator, at monica.benson@nerc.net or at 404-446-2560.*

North American Electric Reliability Corporation
116-390 Village Blvd.
Princeton, NJ 08540
609.452.8060 | www.nerc.com

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- Ballot Pools
- Current Ballots
- Ballot Results
- Registered Ballot Body
- Proxy Voters

Home Page

| Ballot Results | |
|-------------------------------|--|
| Ballot Name: | Project 2009-06: Facility Ratings_rc |
| Ballot Period: | 5/12/2011 - 5/23/2011 |
| Ballot Type: | recirculation |
| Total # Votes: | 313 |
| Total Ballot Pool: | 343 |
| Quorum: | 91.25 % The Quorum has been reached |
| Weighted Segment Vote: | 78.92 % |
| Ballot Results: | The Standard has Passed |

| Summary of Ballot Results | | | | | | | | |
|---------------------------|-------------|----------------|-------------|--------------|-----------|--------------|-----------|-----------|
| Segment | Ballot Pool | Segment Weight | Affirmative | | Negative | | Abstain | No Vote |
| | | | # Votes | Fraction | # Votes | Fraction | # Votes | |
| 1 - Segment 1. | 85 | 1 | 68 | 0.84 | 13 | 0.16 | 2 | 2 |
| 2 - Segment 2. | 10 | 0.4 | 3 | 0.3 | 1 | 0.1 | 4 | 2 |
| 3 - Segment 3. | 87 | 1 | 47 | 0.618 | 29 | 0.382 | 4 | 7 |
| 4 - Segment 4. | 28 | 1 | 18 | 0.75 | 6 | 0.25 | 2 | 2 |
| 5 - Segment 5. | 77 | 1 | 42 | 0.712 | 17 | 0.288 | 5 | 13 |
| 6 - Segment 6. | 41 | 1 | 30 | 0.789 | 8 | 0.211 | 1 | 2 |
| 7 - Segment 7. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 - Segment 8. | 6 | 0.4 | 4 | 0.4 | 0 | 0 | 1 | 1 |
| 9 - Segment 9. | 2 | 0.1 | 1 | 0.1 | 0 | 0 | 0 | 1 |
| 10 - Segment 10. | 7 | 0.7 | 7 | 0.7 | 0 | 0 | 0 | 0 |
| Totals | 343 | 6.6 | 220 | 5.209 | 74 | 1.391 | 19 | 30 |

| Individual Ballot Pool Results | | | | |
|--------------------------------|---------------------------------------|------------------|-------------|----------------------|
| Segment | Organization | Member | Ballot | Comments |
| 1 | Ameren Services | Kirit S. Shah | Affirmative | View |
| 1 | American Electric Power | Paul B. Johnson | Affirmative | View |
| 1 | American Transmission Company, LLC | Andrew Z Puztai | Affirmative | View |
| 1 | Arizona Public Service Co. | Robert D Smith | Affirmative | |
| 1 | Associated Electric Cooperative, Inc. | John Bussman | Affirmative | View |
| 1 | Austin Energy | James Armke | Affirmative | |
| 1 | Avista Corp. | Scott Kinney | Affirmative | |
| 1 | Baltimore Gas & Electric Company | Gregory S Miller | Affirmative | View |

| | | | | |
|---|--|------------------------------|-------------|----------------------|
| 1 | BC Hydro and Power Authority | Patricia Robertson | Affirmative | View |
| 1 | Beaches Energy Services | Joseph S. Stonecipher | Affirmative | |
| 1 | Black Hills Corp | Eric Egge | Affirmative | |
| 1 | Bonneville Power Administration | Donald S. Watkins | Affirmative | View |
| 1 | CenterPoint Energy Houston Electric | Dale G Bodden | Negative | |
| 1 | Central Maine Power Company | Kevin L Howes | Affirmative | |
| 1 | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | Chang G Choi | Affirmative | View |
| 1 | Clark Public Utilities | Jack Stamper | Affirmative | |
| 1 | Colorado Springs Utilities | Paul Morland | Negative | View |
| 1 | Consolidated Edison Co. of New York | Christopher L de Graffenried | Affirmative | |
| 1 | Dairyland Power Coop. | Robert W. Roddy | Affirmative | |
| 1 | Deseret Power | James Tucker | Affirmative | |
| 1 | Dominion Virginia Power | Michael S Crowley | Affirmative | |
| 1 | Duke Energy Carolina | Douglas E. Hils | Affirmative | |
| 1 | Entergy Services, Inc. | Edward J Davis | Affirmative | |
| 1 | FirstEnergy Energy Delivery | Robert Martinko | Affirmative | |
| 1 | Gainesville Regional Utilities | Luther E. Fair | Affirmative | |
| 1 | GDS Associates, Inc. | Claudiu Cadar | Negative | |
| 1 | Georgia Transmission Corporation | Harold Taylor, II | Affirmative | View |
| 1 | Great River Energy | Gordon Pietsch | Affirmative | |
| 1 | Hoosier Energy Rural Electric Cooperative, Inc. | Robert Solomon | Negative | View |
| 1 | Hydro One Networks, Inc. | Ajay Garg | Negative | View |
| 1 | Hydro-Quebec TransEnergie | Bernard Pelletier | Affirmative | |
| 1 | Idaho Power Company | Ronald D. Schellberg | Affirmative | |
| 1 | Imperial Irrigation District | Tino Zaragoza | Affirmative | |
| 1 | International Transmission Company Holdings Corp | Michael Moltane | Affirmative | |
| 1 | JEA | Ted E Hobson | Affirmative | |
| 1 | Lakeland Electric | Larry E Watt | Affirmative | |
| 1 | Lee County Electric Cooperative | John W Delucca | Affirmative | |
| 1 | Lincoln Electric System | Doug Bantam | | |
| 1 | Los Angeles Department of Water & Power | Ly M Le | Affirmative | |
| 1 | Lower Colorado River Authority | Martyn Turner | Affirmative | |
| 1 | Manitoba Hydro | Joe D Petaski | Negative | View |
| 1 | MEAG Power | Danny Dees | Affirmative | |
| 1 | Mid-Continent Area Power Pool | Larry E. Brusseau | Abstain | |
| 1 | MidAmerican Energy Co. | Terry Harbour | Affirmative | View |
| 1 | Minnkota Power Coop. Inc. | Richard Burt | Affirmative | |
| 1 | Muscatine Power & Water | Tim Reed | Affirmative | |
| 1 | National Grid | Saurabh Saksena | Abstain | View |
| 1 | Nebraska Public Power District | Richard L. Koch | | |
| 1 | New Brunswick Power Transmission Corporation | Randy MacDonald | Negative | View |
| 1 | New York Power Authority | Arnold J. Schuff | Affirmative | View |
| 1 | New York State Electric & Gas Corp. | Raymond P Kinney | Negative | View |
| 1 | Northeast Utilities | David H. Boguslawski | Affirmative | |
| 1 | Northern Indiana Public Service Co. | Kevin M Largura | Affirmative | |
| 1 | NorthWestern Energy | John Canavan | Affirmative | |
| 1 | Ohio Valley Electric Corp. | Robert Matthey | Affirmative | |
| 1 | Omaha Public Power District | Douglas G Peterchuck | Affirmative | |
| 1 | Oncor Electric Delivery | Michael T. Quinn | Affirmative | |
| 1 | Orlando Utilities Commission | Brad Chase | Affirmative | |
| 1 | Pacific Gas and Electric Company | Bangalore Vijayraghavan | Affirmative | |
| 1 | PacifiCorp | Colt Norrish | Affirmative | |
| 1 | PECO Energy | Ronald Schloendorn | Affirmative | |
| 1 | Platte River Power Authority | John C. Collins | Affirmative | |
| 1 | Potomac Electric Power Co. | David Thorne | Affirmative | |
| 1 | PPL Electric Utilities Corp. | Brenda L Truhe | Affirmative | |
| 1 | Progress Energy Carolinas | Sammy Roberts | Affirmative | |
| 1 | Public Service Electric and Gas Co. | Kenneth D. Brown | Affirmative | View |
| 1 | Public Utility District No. 1 of Chelan County | Chad Bowman | Affirmative | |
| 1 | Public Utility District No. 1 of Okanogan County | Dale Dunkel | Affirmative | |
| 1 | Rochester Gas and Electric Corp. | John C. Allen | Affirmative | |
| 1 | Sacramento Municipal Utility District | Tim Kelley | Affirmative | View |
| 1 | Salt River Project | Robert Kondziolka | Affirmative | |

| | | | | |
|---|--|-------------------------------|-------------|----------------------|
| 1 | Santee Cooper | Terry L. Blackwell | Affirmative | |
| 1 | Seattle City Light | Pawel Krupa | Affirmative | |
| 1 | Sierra Pacific Power Co. | Rich Salgo | Affirmative | View |
| 1 | Snohomish County PUD No. 1 | Long T Duong | Negative | View |
| 1 | South Texas Electric Cooperative | Richard McLeon | Negative | |
| 1 | Southern Company Services, Inc. | Robert A Schaffeld | Affirmative | View |
| 1 | Sunflower Electric Power Corporation | Noman Lee Williams | Negative | View |
| 1 | Tampa Electric Co. | Beth Young | Affirmative | |
| 1 | Tennessee Valley Authority | Larry Akens | Negative | View |
| 1 | Tri-State G & T Association, Inc. | Tracy Sliman | Affirmative | View |
| 1 | Tucson Electric Power Co. | John Tolo | Negative | View |
| 1 | United Illuminating Co. | Jonathan Appelbaum | Affirmative | |
| 1 | Western Area Power Administration | Brandy A Dunn | Affirmative | |
| 1 | Xcel Energy, Inc. | Gregory L Pieper | Affirmative | |
| 2 | Alberta Electric System Operator | Mark B Thompson | Affirmative | |
| 2 | BC Hydro | Venkataramakrishnan Vinnakota | Affirmative | View |
| 2 | California ISO | Gregory Van Pelt | | |
| 2 | Electric Reliability Council of Texas, Inc. | Chuck B Manning | | |
| 2 | Independent Electricity System Operator | Kim Warren | Abstain | |
| 2 | ISO New England, Inc. | Kathleen Goodman | Abstain | View |
| 2 | Midwest ISO, Inc. | Marie Knox | Abstain | View |
| 2 | New Brunswick System Operator | Alden Briggs | Affirmative | |
| 2 | New York Independent System Operator | Gregory Campoli | Abstain | |
| 2 | Southwest Power Pool | Charles H Yeung | Negative | View |
| 3 | Alabama Power Company | Richard J. Mandes | Affirmative | View |
| 3 | Ameren Services | Mark Peters | Affirmative | |
| 3 | APS | Steven Norris | Negative | |
| 3 | Atlantic City Electric Company | NICOLE BUCKMAN | Affirmative | |
| 3 | BC Hydro and Power Authority | Pat G. Harrington | Affirmative | |
| 3 | Blachly-Lane Electric Co-op | Bud Tracy | Negative | View |
| 3 | Bonneville Power Administration | Rebecca Berdahl | Affirmative | View |
| 3 | Central Electric Cooperative, Inc. (Redmond, Oregon) | Dave Markham | Negative | View |
| 3 | Central Lincoln PUD | Steve Alexanderson | Negative | View |
| 3 | City of Austin dba Austin Energy | Andrew Gallo | Affirmative | |
| 3 | City of Farmington | Linda R. Jacobson | Affirmative | |
| 3 | City of Green Cove Springs | Gregg R Griffin | Affirmative | |
| 3 | City of Redding | Bill Hughes | Affirmative | |
| 3 | Clearwater Power Co. | Dave Hagen | Negative | View |
| 3 | Cleco Corporation | Michelle A Corley | Negative | View |
| 3 | Colorado Springs Utilities | Lisa Cleary | Negative | View |
| 3 | ComEd | Bruce Krawczyk | Affirmative | |
| 3 | Consolidated Edison Co. of New York | Peter T Yost | Affirmative | |
| 3 | Constellation Energy | Carolyn Ingersoll | Negative | View |
| 3 | Consumers Energy | David A. Lapinski | Abstain | |
| 3 | Consumers Power Inc. | Roman Gillen | Negative | View |
| 3 | Coos-Curry Electric Cooperative, Inc | Roger Meader | Negative | View |
| 3 | Cowlitz County PUD | Russell A Noble | Negative | View |
| 3 | Delmarva Power & Light Co. | Michael R. Mayer | Affirmative | |
| 3 | Detroit Edison Company | Kent Kujala | Affirmative | |
| 3 | Dominion Resources Services | Michael F Gildea | Affirmative | |
| 3 | Douglas Electric Cooperative | Dave Sabala | Negative | View |
| 3 | Duke Energy Carolina | Henry Ernst-Jr | Affirmative | |
| 3 | East Kentucky Power Coop. | Sally Witt | Negative | View |
| 3 | Entergy | Joel T Plessinger | Negative | View |
| 3 | Fall River Rural Electric Cooperative | Bryan Case | Negative | View |
| 3 | FirstEnergy Solutions | Kevin Querry | Affirmative | |
| 3 | Florida Power Corporation | Lee Schuster | Affirmative | |
| 3 | Gainesville Regional Utilities | Kenneth Simmons | Affirmative | |
| 3 | Georgia Power Company | Anthony L Wilson | Affirmative | View |
| 3 | Georgia System Operations Corporation | Scott S. Barfield-McGinnis | Abstain | |
| 3 | Great River Energy | Sam Kokkinen | Affirmative | |
| 3 | Hydro One Networks, Inc. | David L Kiguel | Negative | View |
| 3 | Imperial Irrigation District | Jesus S. Alcaraz | Affirmative | |
| 3 | Kansas City Power & Light Co. | Charles Locke | | |
| 3 | Kissimmee Utility Authority | Gregory David Woessner | Affirmative | |

| | | | | |
|---|---|-----------------------|-------------|----------------------|
| 3 | Lakeland Electric | Mace Hunter | Affirmative | |
| 3 | Lane Electric Cooperative, Inc. | Rick Crinklaw | Negative | View |
| 3 | Lincoln Electric Cooperative, Inc. | Michael Henry | Negative | View |
| 3 | Lincoln Electric System | Bruce Merrill | Affirmative | |
| 3 | Los Angeles Department of Water & Power | Daniel D Kurowski | | |
| 3 | Lost River Electric Cooperative | Richard Reynolds | Negative | View |
| 3 | Louisville Gas and Electric Co. | Charles A. Freibert | Affirmative | View |
| 3 | Manitoba Hydro | Greg C. Parent | Negative | View |
| 3 | Mississippi Power | Don Horsley | Affirmative | View |
| 3 | Municipal Electric Authority of Georgia | Steven M. Jackson | Affirmative | |
| 3 | Muscatine Power & Water | John S Bos | Affirmative | View |
| 3 | Nebraska Public Power District | Tony Eddleman | Abstain | |
| 3 | New York Power Authority | Marilyn Brown | Affirmative | |
| 3 | Niagara Mohawk (National Grid Company) | Michael Schiavone | Abstain | |
| 3 | Northern Indiana Public Service Co. | William SeDoris | Affirmative | |
| 3 | Northern Lights Inc. | Jon Shelby | Negative | View |
| 3 | NRG Energy Power Marketing, Inc. | Rick Keetch | | |
| 3 | Okanogan County Electric Cooperative, Inc. | Ray Ellis | Negative | View |
| 3 | Omaha Public Power District | Blaine R. Dinwiddie | Affirmative | |
| 3 | Orange and Rockland Utilities, Inc. | David Burke | Affirmative | |
| 3 | Orlando Utilities Commission | Ballard Keith Mutters | Affirmative | |
| 3 | Owensboro Municipal Utilities | Thomas T Lyons | Affirmative | |
| 3 | Pacific Gas and Electric Company | John H Hagen | Affirmative | View |
| 3 | PacifiCorp | John Apperson | | |
| 3 | Platte River Power Authority | Terry L Baker | Affirmative | View |
| 3 | Progress Energy Carolinas | Sam Waters | | |
| 3 | Public Service Electric and Gas Co. | Jeffrey Mueller | Affirmative | View |
| 3 | Public Utility District No. 2 of Grant County | Greg Lange | Negative | View |
| 3 | Raft River Rural Electric Cooperative | Heber Carpenter | Negative | View |
| 3 | Sacramento Municipal Utility District | James Leigh-Kendall | Affirmative | View |
| 3 | Salmon River Electric Cooperative | Ken Dizes | Negative | View |
| 3 | Salt River Project | John T. Underhill | Affirmative | |
| 3 | San Diego Gas & Electric | Scott Peterson | | |
| 3 | Santee Cooper | Zack Dusenbury | Affirmative | |
| 3 | Seattle City Light | Dana Wheelock | Affirmative | |
| 3 | Snohomish County PUD No. 1 | Mark Oens | Negative | View |
| 3 | South Carolina Electric & Gas Co. | Hubert C Young | Affirmative | |
| 3 | Southern California Edison Co. | David Schiada | Affirmative | |
| 3 | Tacoma Public Utilities | Travis Metcalfe | Affirmative | View |
| 3 | Tampa Electric Co. | Ronald L Donahey | Affirmative | |
| 3 | Tennessee Valley Authority | Ian S Grant | Negative | View |
| 3 | Umatilla Electric Cooperative | Steve Eldrige | Negative | View |
| 3 | West Oregon Electric Cooperative, Inc. | Marc Farmer | Negative | View |
| 3 | Wisconsin Electric Power Marketing | James R. Keller | Affirmative | |
| 3 | Wisconsin Public Service Corp. | Gregory J Le Grave | | |
| 3 | Xcel Energy, Inc. | Michael Ibold | Affirmative | View |
| 4 | Alliant Energy Corp. Services, Inc. | Kenneth Goldsmith | Affirmative | |
| 4 | American Municipal Power | Kevin Koloini | Affirmative | |
| 4 | Blue Ridge Power Agency | Duane S Dahlquist | Affirmative | |
| 4 | Central Lincoln PUD | Shamus J Gamache | Negative | View |
| 4 | City of Austin dba Austin Energy | Reza Ebrahimian | Affirmative | |
| 4 | City of New Smyrna Beach Utilities Commission | Timothy Beyrle | Affirmative | |
| 4 | City of Redding | Nicholas Zettel | Negative | |
| 4 | City Utilities of Springfield, Missouri | John Allen | Affirmative | |
| 4 | Consumers Energy | David Frank Ronk | | |
| 4 | Cowlitz County PUD | Rick Syring | Negative | View |
| 4 | Florida Municipal Power Agency | Frank Gaffney | Affirmative | |
| 4 | Georgia System Operations Corporation | Guy Andrews | Abstain | |
| 4 | Illinois Municipal Electric Agency | Bob C. Thomas | Affirmative | |
| 4 | Imperial Irrigation District | Diana U Torres | Affirmative | |
| 4 | Integrus Energy Group, Inc. | Christopher Plante | Affirmative | |
| 4 | LaGen | Richard Comeaux | Abstain | |
| 4 | Madison Gas and Electric Co. | Joseph G. DePoorter | Affirmative | |
| 4 | Modesto Irrigation District | Spencer Tacke | Negative | View |
| 4 | Ohio Edison Company | Douglas Hohlbaugh | Affirmative | |
| 4 | Oklahoma Municipal Power Authority | Terri Pyle | Affirmative | |

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|---|--|-----------------------|-------------|----------------------|
| 4 | Old Dominion Electric Coop. | Mark Ringhausen | | |
| 4 | Pacific Northwest Generating Cooperative | Aleka K Scott | Negative | View |
| 4 | Public Utility District No. 1 of Snohomish County | John D. Martinsen | Negative | View |
| 4 | Sacramento Municipal Utility District | Mike Ramirez | Affirmative | View |
| 4 | Seattle City Light | Hao Li | Affirmative | |
| 4 | Seminole Electric Cooperative, Inc. | Steven R Wallace | Affirmative | |
| 4 | Tacoma Public Utilities | Keith Morisette | Affirmative | |
| 4 | Wisconsin Energy Corp. | Anthony Jankowski | Affirmative | View |
| 5 | Amerenue | Sam Dwyer | Affirmative | |
| 5 | Arizona Public Service Co. | Edward Cambridge | Negative | View |
| 5 | Avista Corp. | Edward F. Groce | Affirmative | |
| 5 | BC Hydro and Power Authority | Clement Ma | Affirmative | View |
| 5 | Bonneville Power Administration | Francis J. Halpin | Affirmative | |
| 5 | BrightSource Energy, Inc. | Chifong Thomas | Affirmative | |
| 5 | Chelan County Public Utility District #1 | John Yale | Affirmative | |
| 5 | City and County of San Francisco | Daniel Mason | | |
| 5 | City of Austin dba Austin Energy | Jeanie Doty | Affirmative | |
| 5 | City of Grand Island | Jeff Mead | Abstain | |
| 5 | City of Redding | Paul A Cummings | Affirmative | |
| 5 | City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power | Max Emrick | Affirmative | |
| 5 | City of Tallahassee | Alan Gale | Affirmative | |
| 5 | Cleco Power | Stephanie Huffman | Negative | View |
| 5 | Colorado Springs Utilities | Jennifer Eckels | Negative | View |
| 5 | Consolidated Edison Co. of New York | Wilket (Jack) Ng | Affirmative | |
| 5 | Constellation Power Source Generation, Inc. | Amir Y Hammad | Negative | View |
| 5 | Consumers Energy | James B Lewis | Negative | View |
| 5 | Cowlitz County PUD | Bob Essex | Negative | View |
| 5 | Detroit Edison Company | Christy Wicke | Affirmative | |
| 5 | Dominion Resources, Inc. | Mike Garton | Affirmative | |
| 5 | Duke Energy | Dale Q Goodwine | Affirmative | |
| 5 | Dynegy Inc. | Dan Roethemeyer | | |
| 5 | E.ON Climate & Renewables North America, LLC | Dana Showalter | Abstain | |
| 5 | Electric Power Supply Association | John R Cashin | | |
| 5 | Entergy Corporation | Stanley M Jaskot | | |
| 5 | Exelon Nuclear | Michael Korchynsky | Affirmative | |
| 5 | ExxonMobil Research and Engineering | Martin Kaufman | Abstain | |
| 5 | FirstEnergy Solutions | Kenneth Dresner | Affirmative | |
| 5 | Florida Municipal Power Agency | David Schumann | Affirmative | |
| 5 | Great River Energy | Preston L Walsh | Affirmative | |
| 5 | Green Country Energy | Greg Froehling | Affirmative | |
| 5 | Indeck Energy Services, Inc. | Rex A Roehl | | |
| 5 | JEA | John J Babik | Affirmative | |
| 5 | Liberty Electric Power LLC | Daniel Duff | Affirmative | |
| 5 | Lincoln Electric System | Dennis Florom | Affirmative | |
| 5 | Los Angeles Department of Water & Power | Kenneth Silver | Affirmative | |
| 5 | Lower Colorado River Authority | Tom Foreman | Affirmative | |
| 5 | Luminant Generation Company LLC | Mike Laney | Negative | View |
| 5 | Manitoba Hydro | S N Fernando | Negative | View |
| 5 | Massachusetts Municipal Wholesale Electric Company | David Gordon | | |
| 5 | MEAG Power | Steven Grego | Affirmative | |
| 5 | MidAmerican Energy Co. | Christopher Schneider | Affirmative | |
| 5 | Muscatine Power & Water | Mike Avesing | Affirmative | |
| 5 | Nebraska Public Power District | Don Schmit | Abstain | |
| 5 | New Harquahala Generating Co. LLC | Nathaniel Larson | Affirmative | |
| 5 | New York Power Authority | Gerald Mannarino | Negative | View |
| 5 | NRG Energy, Inc. | Patricia A. Lynch | | |
| 5 | Occidental Chemical | Michelle DAntuono | Negative | View |
| 5 | Oglethorpe Power Corporation | Scott McGough | | |
| 5 | Omaha Public Power District | Mahmood Z. Safi | Affirmative | |
| 5 | Ontario Power Generation Inc. | Colin Anderson | Negative | View |
| 5 | Orlando Utilities Commission | Richard Kinas | Negative | View |
| 5 | Pacific Gas and Electric Company | Richard J. Padilla | Negative | View |
| 5 | Platte River Power Authority | Pete Ungerman | Affirmative | |
| 5 | Portland General Electric Co. | Gary L Tingley | Affirmative | |

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|---|--|--------------------------|-------------|----------------------|
| 5 | PowerSouth Energy Cooperative | Tim Hattaway | | |
| 5 | PPL Generation LLC | Annette M Bannon | Affirmative | |
| 5 | Progress Energy Carolinas | Wayne Lewis | Affirmative | |
| 5 | PSEG Fossil LLC | Mikhail Falkovich | Affirmative | |
| 5 | Public Service Enterprise Group Incorporated | Dominick Grasso | | |
| 5 | Sacramento Municipal Utility District | Bethany Hunter | Affirmative | View |
| 5 | Salt River Project | Glen Reeves | Affirmative | |
| 5 | Santee Cooper | Lewis P Pierce | Affirmative | |
| 5 | Seattle City Light | Michael J. Haynes | Negative | View |
| 5 | Seminole Electric Cooperative, Inc. | Brenda K. Atkins | | |
| 5 | Snohomish County PUD No. 1 | Sam Nietfeld | Negative | |
| 5 | Southern California Edison Co. | Denise Yaffe | Affirmative | |
| 5 | Southern Company Generation | William D Shultz | Affirmative | |
| 5 | Tenaska, Inc. | Scott M. Helyer | Abstain | |
| 5 | Tennessee Valley Authority | David Thompson | Negative | View |
| 5 | Trans Canada Power | John Fish | | |
| 5 | U.S. Army Corps of Engineers | Melissa Kurtz | Affirmative | |
| 5 | U.S. Bureau of Reclamation | Martin Bauer P.E. | Negative | View |
| 5 | Vandolah Power Company L.L.C. | Douglas A. Jensen | Affirmative | |
| 5 | Wisconsin Electric Power Co. | Linda Horn | Affirmative | |
| 5 | Wisconsin Public Service Corp. | Leonard Rentmeester | | |
| 6 | AEP Marketing | Edward P. Cox | Affirmative | View |
| 6 | Arizona Public Service Co. | Justin Thompson | Negative | |
| 6 | Black Hills Power | andrew heinle | Affirmative | |
| 6 | Bonneville Power Administration | Brenda S. Anderson | Affirmative | |
| 6 | City of Austin dba Austin Energy | Lisa L Martin | Affirmative | |
| 6 | City of Redding | Marvin Briggs | Affirmative | |
| 6 | Cleco Power LLC | Robert Hirschak | Negative | View |
| 6 | Colorado Springs Utilities | Lisa C Rosintoski | Negative | View |
| 6 | Consolidated Edison Co. of New York | Nickesha P Carrol | Affirmative | |
| 6 | Constellation Energy Commodities Group | Brenda Powell | Negative | View |
| 6 | Dominion Resources, Inc. | Louis S. Slade | Affirmative | |
| 6 | Duke Energy Carolina | Walter Yeager | Affirmative | |
| 6 | Entergy Services, Inc. | Terri F Benoit | Negative | View |
| 6 | Exelon Power Team | Pulin Shah | Affirmative | |
| 6 | FirstEnergy Solutions | Mark S Travaglianti | Affirmative | |
| 6 | Florida Municipal Power Agency | Richard L. Montgomery | Affirmative | |
| 6 | Florida Municipal Power Pool | Thomas E Washburn | Affirmative | |
| 6 | Florida Power & Light Co. | Silvia P. Mitchell | Affirmative | |
| 6 | Great River Energy | Donna Stephenson | | |
| 6 | Kansas City Power & Light Co. | Jessica L Klinghoffer | | |
| 6 | Lincoln Electric System | Eric Ruskamp | Affirmative | |
| 6 | Manitoba Hydro | Daniel Prowse | Negative | View |
| 6 | Muscatine Power & Water | Brandy D Olson | Affirmative | |
| 6 | New York Power Authority | William Palazzo | Affirmative | |
| 6 | Northern Indiana Public Service Co. | Joseph O'Brien | Affirmative | |
| 6 | NRG Energy, Inc. | Alan R. Johnson | Abstain | |
| 6 | Omaha Public Power District | David Ried | Affirmative | |
| 6 | Orlando Utilities Commission | Claston Augustus Sunanon | Negative | View |
| 6 | Platte River Power Authority | Carol Ballantine | Affirmative | |
| 6 | PPL EnergyPlus LLC | Mark A Heimbach | Affirmative | |
| 6 | Progress Energy | John T Sturgeon | Affirmative | |
| 6 | PSEG Energy Resources & Trade LLC | Peter Dolan | Affirmative | |
| 6 | Public Utility District No. 1 of Chelan County | Hugh A. Owen | Affirmative | |
| 6 | Sacramento Municipal Utility District | Claire Warshaw | Affirmative | View |
| 6 | Salt River Project | Steven J Hulet | Affirmative | |
| 6 | Santee Cooper | Suzanne Ritter | Affirmative | |
| 6 | Seattle City Light | Dennis Sismaet | Affirmative | |
| 6 | South California Edison Company | Lujuanna Medina | Affirmative | |
| 6 | Tacoma Public Utilities | Michael C Hill | Affirmative | |
| 6 | Tampa Electric Co. | Benjamin F Smith II | Affirmative | |
| 6 | Tennessee Valley Authority | Marjorie S. Parsons | Negative | View |
| 8 | | Roger C Zaklukiewicz | Abstain | View |
| 8 | | James A Maenner | Affirmative | |
| 8 | | Edward C Stein | Affirmative | |
| 8 | JDRJC Associates | Jim D. Cyrulewski | Affirmative | |
| 8 | Utility Services, Inc. | Brian Evans-Mongeon | Affirmative | |



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|----|--|---------------------|-------------|----------------------|
| 8 | Volkman Consulting, Inc. | Terry Volkman | | |
| 9 | National Association of Regulatory Utility Commissioners | Diane J. Barney | Affirmative | View |
| 9 | Snohomish County PUD No. 1 | William T Moojen | | |
| 10 | Midwest Reliability Organization | James D Burley | Affirmative | |
| 10 | New York State Reliability Council | Alan Adamson | Affirmative | |
| 10 | Northeast Power Coordinating Council, Inc. | Guy V. Zito | Affirmative | |
| 10 | ReliabilityFirst Corporation | Anthony E Jablonski | Affirmative | View |
| 10 | SERC Reliability Corporation | Carter B. Edge | Affirmative | View |
| 10 | Texas Reliability Entity | Larry D. Grimm | Affirmative | |
| 10 | Western Electricity Coordinating Council | Steven L. Rueckert | Affirmative | View |
| | | | | |

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 Washington Office: 1120 G Street, N.W. : Suite 990 : Washington, DC 20005-3801

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NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Standards Announcement Project 2009-06 Facility Ratings Recirculation Ballot Results

Now available at: <https://standards.nerc.net/Ballots.aspx>

A recirculation ballot on revisions to FAC-008- Facility Ratings concluded on May 23, 2011. The standard was approved by the ballot pool.

Ballot Results for Revisions to FAC-008

Voting statistics are listed below, and the [Ballot Results](#) Web page provides a link to the detailed results:

Quorum: 91.25 %

Approval: 78.92 %

Next Steps

The NERC Board of Trustees has scheduled a meeting on May 24, 2011 and will be asked to take action on FAC-008 during that meeting. Once the Board adopts FAC-008-3, it will be filed with regulators for approval. In order for the ERO to be in compliance with the applicable directives, the revisions to FAC-008 must be filed with FERC no later than June 15, 2011.

Background

As the ERO, NERC must address all directives in Orders issued by FERC. The Facility Ratings Standard Drafting Team (FR SDT) has been tasked with creating a requirement to address a Supplemental SAR to address the reliability concerns related to Facility Ratings initially discussed in paragraphs 756 and 771 of FERC's Order 693, and further explained in paragraph 76 of FERC's "Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay," September 16, 2010. These concerns relate to ensuring broad situational awareness regarding the most limiting elements of Facilities.

In Order 693, FERC explained in paragraph 756:

"...The Commission's proposed modification would require identifying and documenting the limiting component for all facilities and the increase in rating if that component were no longer the most limiting component; in other words, the rating based on the second-most limiting component. The Commission further clarifies that this Reliability Standard will require this additional thermal rating information only for those facilities for which thermal ratings cause the following: (1) an IROL; (2) a limitation of TTC; (3) an impediment to generation deliverability or (4) an impediment to service to major cities or load pockets."

And provided further direction in paragraph 771:

"...we direct the ERO to develop modifications to FAC-008-1 through its Reliability Standards development process requiring transmission and generation facility owners to: (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.”

FERC later explained in paragraph 76 of its September 16, 2010 Order Denying Rehearing, Denying Clarification, Denying Reconsideration, and Denying Request for a Stay:

“In order to determine facility ratings, entities must identify the most limiting component that comprises the facility, based on a validated methodology that considers the specific characteristics and ratings of all of the components to determine their limits for a range of ambient conditions, including if and for what duration these limits can be exceeded. This is, in part, because the limiting element upon which a facility rating is based can change under different operating conditions. For example, an underground high voltage cable may be the limiting element for continuous ratings, but a disconnect switch may be the limiting element for a four-hour emergency rating. With heavy power flows from generators through critical facilities to load, contingency conditions could reveal a thermal overload above the normal rating of the first limiting component of one of these facilities. However, that component also likely has a documented short time rating that could sustain the overload. If the second-most limiting component does not afford much increase in rating above the first, and its overload can result in the unintended removal of the facility from service (i.e., a relay or other protection system component that trips a facility out of service due to the overload), the prior identification of this second limiting component could alter the mitigation plans and avoid relay operations that trip facilities out-of-service, and thus potentially prevent a cascading event.”

On February 24, 2011, members of the FR SDT met with NERC and FERC staff to discuss the original directive from FERC Order 693 as well as the subsequent guidance issued in the September 16, 2010 Order.

Standards Process

The [Standard Processes Manual](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

*For more information or assistance, please contact Monica Benson,
Standards Process Administrator, at monica.benson@nerc.net or at 404.446.2560.*

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Exhibit F

Standard Drafting Team Roster for NERC Standards Development Project 2009-06 Facility Ratings

**Project 2009-06 Facility Ratings Standard
Drafting Team**

| Name and Title Affiliation Contact Info | Bio |
|---|---|
| <p>Paul B. Johnson – Chair Managing Director – Transmission Operations</p> <p>American Electric Power 8400 Smiths Mill Road New Albany Oh. 43058</p> <p>pbjohnson@aep.com</p> | <p>Paul Johnson is the Managing Director – Transmission Operation at American Electric Power, and is responsible for the safe and reliable operation of AEP’s 11 state transmission system. Paul began his career at AEP in 1981, and has held various engineering and management positions in Transmission Planning, Asset Management, and currently Transmission Operation. Prior to joining AEP, Paul was employed by another electric utility and utility consultant, and held positions involving design engineering and field engineering functions. For over 20 years, Paul was adjunct professor at Franklin University (Columbus, Ohio). Paul has served on several (former) ECAR and NERC committees and working groups. Currently Paul chairs the RFC Standards Committee, on the SPP Market and Operations Committee, and TRE Reliability Standards Committee.</p> <p>Paul received his B.S. Engineering, and M.S. – Management both from Purdue University, and is registered Professional Engineer in the State of Ohio.</p> |
| <p>Robert A. Birch</p> <p>Manager System Operations</p> <p>Florida Power & Light Co. P.O. Box 029311 Miami, Florida 33102-9311</p> <p>Bob.Birch@fpl.com</p> | <p>Bob Birch is a Staff Engineer at Florida Power & Light Company (FPL) and is in charge of the Scheduling Desk in FPL’s System Control Center and transmission billings. Bob has worked in System Operations for approx. the last 18 years. Prior to transferring to System Operations, Bob spent 7 years working in FPL’s Bulk Power Marketing department and was responsible for negotiating interconnection agreements, transmission service agreements, interchange contracts and power purchase agreements. Bob started at FPL in June 1973 as an engineer in Distribution Engineering designing overhead and underground projects. In 1979 Bob transferred to the Distribution Planning and Standards group where he wrote standards and did product approvals. Between 1980 and 1986 Bob worked in FPL’s Transmission Planning and was responsible for regional and bulk transmission assessments and system expansion planning.</p> <p>Bob received his Bachelor of Science in Electrical Engineering from the University of Florida and is a registered Professional Engineer in the State of Florida. Bob also obtained a Master of Business Administration degree from Florida International University.</p> |
| <p>Terry L. Crawley, P.E. Principal Engineer</p> <p>Southern Company Generation P.O. Box 2625 Birmingham, AL 35202</p> <p>tlcrawle@southernco.com</p> | <p>Terry Crawley is a Staff Engineer with Southern Company Generation, SCS Technical Services, Electrical Systems and Field Support. Terry has over 35 years of electrical engineering experience, mostly in the area of generating plant electrical technical support to Southern Company’s fleet of fossil, hydro, and nuclear plants. This includes plant electrical system testing and startup, field technical support, electrical and protection system calculations and studies, coordination of plant switchyard maintenance and modifications, plant-grid interface studies and issues resolution, project support, electrical systems design, electrical equipment applications, NERC/SERC reliability standards compliance, and nuclear regulatory compliance. His responsibilities have included those of electrical technical lead engineer, supervising engineer, and project engineer. In addition to the NERC Facility Ratings SDT, Terry has served as Chairman of the NERC NUC-001 SDT and as Member and Chairman of the SERC Generation Subcommittee.</p> <p>Terry received his Bachelor of Science in Electrical Engineering from the University of Alabama and Master of Science in Electrical Engineering from the University of Alabama in Birmingham.</p> |

Robert Kluge
American Transmission
Company, LLC
rkluge@atcllc.com

Robert Kluge is a Professional Engineer in Wisconsin and Illinois with 31 years of experience in transmission line design at Wisconsin Power and Light, Alliant Energy and American Transmission Co. (ATC). He is a member of the CIGRE and IEEE-TP&C committees and the NESC Subcommittee 5 and has been involved in ratings of transmission lines at the above companies since the 1980's. His duties have included establishing a program for surveying existing transmission lines, overseeing the development of software programs to analyze clearances and thermal line rating, verifying the accuracy of these tools, participating in the development weather parameters to establish operating capacity at all three above mentioned utilities, and authoring ATC's "Rating Criteria for Overhead Lines."

He has been involved in several dynamic ratings efforts. He introduced dynamic ratings at Alliant Energy in 1995, provided engineering leadership to the installation of a CAT-1 and integrating into operations and for installations of five sag-o-meters at ATC.

Mr. Kluge specifies ratings for conductor connectors at ATC and is knowledgeable of ANSI C119.4 "American National Standard for Electric Connectors (for overhead conductors)" and the proposed ANSI C119.7 for High-temperature low-sag conductors. ATC has actively participated in the research on the proper installation and methods of inspection of overhead connectors, which Mr. Kluge has followed closely.

Mr Kluge conducted a "Study-based" rating investigation following CIGRE 299 guidelines, 2010, the results of which are being implemented in ATC's rating methodology. He has provided technical comments to the CIGRE 299 "Guide for Selection of Weather Parameters for Bare Overhead Conductor Ratings," and the IEEE papers regarding conductor sag assumptions (ruling span, prior heavy loading history (icing), aluminum bar source, methods of modeling with finite element vs. ruling span and accuracy of survey data. For six years, he taught a session on up-rating of transmission lines at University of Wisconsin Extension as a part of the course "Design of Transmission Line Structures and Foundations".

He authored the following change proposal accepted by NESC in 2002 to Rule 235C2b(1)(a) "*EXCEPTION 2: ...for supply conductors of different utilities, vertical clearance at any point in the span need not exceed 75% of the values required at the supports for the same utility by Table 235-5*". This is critical as utilities separate ownership of transmission assets. Without this change, the rating of transmission lines, having distribution attachments beneath, would have been instantly de-rated and possibly deemed unsafe to operate simply due to the change of ownership of the facilities. Mr. Kluge has also authored papers on Longitudinal loading on transmission lines (IEEE), Conductor galloping control with TP conductor (EDM conference), and wood pole design parameter development in ANSI-O5 (ASCE conference).

Mr. Kluge holds a Masters of Science degree in civil-structural engineering from the University of Wisconsin-Madison 1979.

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| <p>H. Steven Myers</p> <p>Principal, Operating & Planning Standards</p> <p>Electric Reliability Council of Texas</p> <p>Electric Reliability Council of Texas, Inc. 2705 West Lake Drive Taylor, Texas 76574-2136</p> <p>smyers@ercot.com</p> | <p>Steve Myers, Principal, Operating & Planning Standards at the Electric Reliability Council of Texas (ERCOT), has over forty-two years of electric system operations experience.</p> <p>Mr. Myers first joined ERCOT in 1996 as the Security Center Manager at the inception of the ERCOT Independent System Operator (ISO). During his time at ERCOT, he has served as Security Center Manager, Manager of System Operations, Manager of Operations Support, Manager of Operating Standards, and now as Principal, Operating & Planning Standards.</p> <p>Prior to joining ERCOT, Mr. Myers served as Manager of the North Texas Security Center. He also served as Operations Supervisor and as Supervisor of Operations Engineering for an investor-owned electric utility; including generation and transmission operations. As a more junior engineer, he served as an engineer in electrical distribution, with responsibilities including supervision of a transformer repair shop, supervision of an underground network group, and as an operations engineer at the system control center.</p> <p>Mr. Myers is a graduate of New Mexico State University, with a Bachelor of Science in Electrical Engineering (BSEE). He has a Master of Business Administration (MBA) degree in Management from the University of Texas at Arlington, and is a Registered Professional Engineer in the State of Texas.</p> <p>Mr. Myers served as an officer in the U. S. Naval Reserve as an Assistant Resident Officer in Charge of Construction in San Diego, California. His electrical engineering training enabled his oversight of all contracts for electrical systems on all bases in the San Diego area. He also gained experience with oversight of contracts of every nature on three assigned Navy bases in the area.</p> |
| <p>Ronald F. Szymczak</p> <p>Interconnection Planning Director</p> <p>Exelon Corporation T&D Planning 10 South Dearborn Street, 37th Floor Post Office Box A-3005 Chicago, Illinois 60690-3005</p> <p>ronald.szymczak@comed.com</p> | <p>Ronald Szymczak is a member of the Project 2009-06, Facility Ratings team. He is employed by Commonwealth Edison Company ("ComEd"), and is the Manager of Interregional and Long Range Planning. In that capacity he is responsible for ComEd's long-range transmission planning, participation in ReliabilityFirst regional work and transmission facility ratings. In addition, he also serves as the Exelon representative on the ReliabilityFirst Reliability Committee. He has over 36 years of work experience at ComEd and has held positions in distribution engineering, transmission planning and financial analysis. He has spent the last 17 years of his career in Transmission Planning as a manager of engineers dealing with transfer capability and power flow analysis, ATC calculations, transmission facility ratings, intraregional studies and interregional studies. He obtained a BSEE from the University of Illinois at Chicago in 1974 and is a Registered Professional Engineer in the State of Illinois.</p> |

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| <p>Chifong Thomas Senior Director, Energy Market and Strategy</p> <p>BrightSource Energy, Inc. 1999 Harrison Street Suite 2150 Oakland, CA 94612</p> <p>cthomas@ brightsourceenergy.com</p> | <p>Chifong Thomas is the Senior Director, Energy Markets and Strategy at BrightSource Energy, Inc. Prior to her current position, she was a Principal Transmission Planning Engineer at Pacific Gas and Electric Company (PG&E). She has more than 39 years of electric utility experience, more than 37 of which in electric transmission planning. She has both conducted and supervised transmission planning studies to develop plans for PG&E transmission system from 60 kV to 500 kV. She has participated in developing methodologies, policies and strategic plans, and in contract negotiations. Ms Thomas has also served as expert witness in various regulatory and judicial forums. She has served on various technical organizations and work groups, including WECC Technical Studies Subcommittee (where she served as Chair from 2003 to 2005) and various WECC task forces, four NERC Standards Drafting Teams, and Industry Advisory Committees of the California Energy Commission and of EPRI. She currently serves as Secretary of the WECC-Planning Coordination Committee (PCC) and also chairs the WECC PCC-TEPPC Coordination Task Force. She had also served on the Technical Advisory Committee (Electrical Engineering) to California Board of Registration for Professional Engineers and Land Surveyors. Ms Thomas holds a Bachelor of Science Degree in Electrical Engineering from Washington State University and is a registered Electrical Engineer in the State of California. She is also a senior member of the IEEE.</p> |
| <p>Stephen Crutchfield Standards Development Coordinator</p> <p>North American Electric Reliability Corporation 116-390 Village Boulevard Princeton, New Jersey 08540- 5721</p> <p>Stephen.crutchfield@nerc.net</p> | <p>Stephen Crutchfield is the NERC Staff Coordinator for Project 2009-06, Facility Ratings. Stephen began his career with NERC in May 2007. Prior to joining NERC, Stephen was a Project Manager with Shaw Energy Delivery Services, managing engineering and construction projects in the substation and transmission line fields. Stephen's background also includes experience with PJM as Manager of RTO Integration, working on the operations and markets integration of new members (AEP, ComEd, Dayton, Dominion and Duquesne) into PJM and southern seams operations issues with Progress Energy, Duke and TVA. Stephen also helped lead the team that was developing GridSouth in the dual roles of Organization Architect and Manager of Customer Support. Prior to GridSouth, Stephen was the Manager of Power System Operations Training at Progress Energy where he spent over 10 years training System Operators and Engineers. Overall, Stephen was with Progress Energy for 16 years.</p> <p>Stephen received his Bachelor of Arts in Physics from the University of Virginia and Masters of Science in Electrical Engineering from North Carolina State University. Stephen also holds a Master of Science in Management degree, also from North Carolina State University.</p> |

CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the foregoing document upon all parties listed on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 15th day of June, 2010.

/s/ Holly A. Hawkins
Holly A. Hawkins
*Assistant General Counsel for North
American Electric Reliability
Corporation*