

Standard MOD-024-1 — Verification of Generator Gross and Net Real Power Capability**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.

This proposed standard is a translation of planning measure II.B.M2, which was not included in the approval Version 0 reliability standards because it required further work.

Development Steps Completed:

1. A SAR was posted from December 2, 2004 through January 7, 2005.
2. The SAC appointed a standard drafting team on January 13, 2005.
3. The drafting team posted its response to SAR comments and all other historical comments on April 19, 2005.
4. Drafting team posted drafts for comment (April 21–June 13, 2005) (September 1–October 15, 2005).
5. The drafting team posted the standards and implementation plan for a 30-day pre-ballot review from December 1–30, 2005
6. First Ballot conducted from January 9–19, 2005
7. Recirculation Ballot was conducted from January 25–February 3, 2006.

Description of Current Draft:

Final draft for board adoption.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Board adoption.	February 7, 2006
2. Effective date.	Phased — April 1, 2006 for RRO requirements; January 1, 2007 for GOW requirements

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.

No new definitions are proposed for this standard.

A. Introduction

- 1. Title:** Verification of Generator Gross and Net Real Power Capability
- 2. Number:** MOD-024-1
- 3. Purpose:** To ensure accurate information on generator gross and net Real Power capability is available for steady-state models used to assess Bulk Electric System reliability.
- 4. Applicability**
 - 4.1.** Regional Reliability Organization.
 - 4.2.** Generation Owner.
- 5. Proposed Effective Dates:**

Requirement 1 and Requirement 2 — April 1, 2006.

Requirement 3 — January 1, 2007.

B. Requirements

- R1.** The Regional Reliability Organization shall establish and maintain procedures to address verification of generator gross and net Real Power capability. These procedures shall include the following:
 - R1.1.** Generating unit exemption criteria including documentation of those units that are exempt from a portion or all of these procedures.
 - R1.2.** Criteria for reporting generating unit auxiliary loads.
 - R1.3.** Acceptable methods for model and data verification, including any applicable conditions under which the data should be verified. Such methods can include use of manufacturer data, commissioning data, performance tracking, and testing, etc.
 - R1.4.** Periodicity and schedule of model and data verification and reporting.
 - R1.5.** Information to be verified and reported:
 - R1.5.1.** Seasonal gross and net Real Power generating capabilities.
 - R1.5.2.** Real power requirements of auxiliary loads.
 - R1.5.3.** Method of verification, including date and conditions.
- R2.** The Regional Reliability Organization shall provide its generator gross and net Real Power capability verification and reporting procedures, and any changes to those procedures, to the Generator Owners, Generator Operators, Transmission Operators, Planning Authorities, and Transmission Planners affected by the procedure within 30 calendar days of the approval.
- R3.** The Generator Owner shall follow its Regional Reliability Organization's procedures for verifying and reporting its gross and net Real Power generating capability per R1.

C. Measures

- M1.** The Regional Reliability Organization shall have available for inspection the procedures for the verification and reporting of generator gross and net Real Power capability in accordance with R1.
- M2.** The Regional Reliability Organization shall have evidence that its procedures, and any revisions to those procedures, for verification and reporting of generator gross and net Real Power capability were provided to affected Generator Owners, Generator Operators,

Transmission Operators, Planning Authorities, and Transmission Planners within 30 calendar days of approval.

- M3.** The Generator Owner shall have evidence it provided verified information of its generator gross and net Real Power capability, consistent with that Regional Reliability Organization's procedures.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Responsibility

For Regional Reliability Organization: NERC

For Generator Owner: Regional Reliability Organization.

1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year.

1.3. Data Retention

The Regional Reliability Organization shall retain both the current and previous versions of the procedures.

The Generator Owner shall retain information from the most current and prior verification.

The Compliance Monitor shall retain any audit data for three years.

1.4. Additional Compliance Information

The Regional Reliability Organization and Generator Owner shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

2. Levels of Non-Compliance for Regional Reliability Organization:

- 2.1. Level 1:** There shall be a level one non-compliance if either of the following conditions is present:

2.1.1 Procedures did not meet one of the following requirements: R1.1, R1.2, R1.4

2.1.2 No evidence that procedures were distributed as required in R2.

- 2.2. Level 2:** There shall be a level two non-compliance if **both** of the following conditions are present:

2.2.1 Procedures did not meet two of the following requirements: R1.1, R1.2, R1.4

2.2.2 No evidence that procedures were distributed as required in R2.

- 2.3. Level 3:** Procedures did not meet R1.3.

- 2.4. Level 4:** Procedures did not meet either R1.5.1, R1.5.2 or R1.5.3

3. Levels of Non-Compliance for Generator Owner:

- 3.1. Level 1:** Complete, verified generator data were provided for 98% or more but less than 100% of a generator owner's units as required by the regional procedures.
- 3.2. Level 2:** Complete, verified generator data were provided for than 96% or more, but less than 98% of a generator owner's units as required by the regional procedures.
- 3.3. Level 3:** Complete, verified generator data were provided for 94% or more, but less than 96% of a generator owner's units as required by the regional procedures.
- 3.4. Level 4:** Complete, verified generator data were provided for less than 94% of a generator owner's units as required by the regional procedures.

E. Regional Differences

None identified.

Version History

Version	Date	Action	Change Tracking
Version 1	12/01/05	<ol style="list-style-type: none"> 1. Changed tabs in footer. 2. Removed comma after 2004 in "Development Steps Completed," #1. 3. Changed incorrect use of certain hyphens (-) to "en dash" (–) and "em dash" (—). 4. Added "periods" to items where appropriate. 5. Changed apostrophes to "smart" symbols. 6. Changed "Timeframe" to "Time Frame" in item D, 1.2. 7. Lower cased all instances of "regional" in section D.3. 8. Removed the word "less" after 94% in section 3.4. Level 4. 	01/20/06

Standard MOD-025-1 — Verification of Generator Gross and Net Reactive Power Capability

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.

This proposed standard is a translation of planning measure II.B.M3, which was not included in the approval Version 0 reliability standards because it required further work.

Development Steps Completed:

1. A SAR was posted from December 2, 2004, through January 7, 2005.
2. The SAC appointed a standard drafting team on January 13, 2005.
3. The drafting team posted its response to SAR comments and all other historical comments on April 19, 2005.
4. Drafting team posted drafts for comment (April 21–June 13, 2005) (September 1–October 15, 2005)
5. The drafting team posted the standards and implementation plan for a 30-day pre-ballot review from December 1–30, 2005
6. First Ballot conducted from January 9–19, 2005
7. Recirculation Ballot was conducted from January 25–February 3, 2006

Description of Current Draft:

Final draft for board adoption.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Board adoption.	February 7, 2006
2. Effective date.	Phased — January 1, 2007 for RRO requirements; January 1, 2008–January 1, 2012 for GOW requirements

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.

No new definitions are proposed for this standard.

Standard MOD-025-1 — Verification of Generator Gross and Net Reactive Power Capability

A. Introduction

1. **Title:** Verification of Generator Gross and Net Reactive Power Capability
2. **Number:** MOD-025-1
3. **Purpose:** To ensure accurate information on generator gross and net Reactive Power capability is available for steady-state models used to assess Bulk Electric System reliability.
4. **Applicability**
 - 4.1. Regional Reliability Organization.
 - 4.2. Generator Owner.
5. **Proposed Effective Dates:**

Requirement 1 and Requirement 2 – January 1, 2007

Requirement 3:

 - January 1, 2008 — 1st 20% compliant
 - January 1, 2009 — 2nd 20% compliant
 - January 1, 2010 — 3rd 20% compliant
 - January 1, 2011 — 4th 20% compliant
 - January 1, 2012 5th 20% compliant

B. Requirements

- R1. The Regional Reliability Organization shall establish and maintain procedures to address verification of generator gross and net Reactive Power capability. These procedures shall include the following:
 - R1.1. Generating unit exemption criteria including documentation of those units that are exempt from a portion or all of these procedures.
 - R1.2. Criteria for reporting generating unit auxiliary loads.
 - R1.3. Acceptable methods for model and data verification, including any applicable conditions under which the data should be verified. Such methods can include use of commissioning data, performance tracking, engineering analysis, testing, etc.
 - R1.4. Periodicity and schedule of model and data verification and reporting.
 - R1.5. Information to be reported:
 - R1.5.1. Verified maximum gross and net Reactive Power capability (both lagging and leading) at Seasonal Real Power generating capabilities as reported in accordance with Reliability Standard MOD-024 Requirement 1.5.1.
 - R1.5.2. Verified Reactive Power limitations, such as generator terminal voltage limitations, shorted rotor turns, etc.
 - R1.5.3. Verified Reactive Power of auxiliary loads.
 - R1.5.4. Method of verification, including date and conditions.
- R2. The Regional Reliability Organization shall provide its generator gross and net Reactive Power capability verification and reporting procedures, and any changes to those procedures, to the

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Generator Owners, Generator Operators, Transmission Operators, Planning Authorities, and Transmission Planners affected by the procedure within 30 calendar days of the approval.

- R3.** The Generator Owner shall follow its Regional Reliability Organization's procedures for verifying and reporting its gross and net Reactive Power generating capability per R1.

C. Measures

- M1.** The Regional Reliability Organization shall have available for inspection the procedures for the verification and reporting of generator gross and net Reactive Power capability in accordance with R1.
- M2.** The Regional Reliability Organization shall have evidence that its procedures, and any revisions to these procedures, for verification and reporting of generator gross and net Reactive Power capability were provided to affected Generator Owners, Generator Operators, Transmission Operators, Planning Authorities, and Transmission Planners within 30 calendar days of approval.
- M3.** The Generator Owner shall have evidence it provided verified information of its generator gross and net Reactive Power capability, consistent with that Regional Reliability Organization's procedures.

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Responsibility

For Regional Reliability Organization: NERC.

For Generator Owner: Regional Reliability Organization.

1.2. Compliance Monitoring Period and Reset Timeframe

One calendar year.

1.3. Data Retention

The Regional Reliability Organization shall retain both the current and previous version of the procedures.

The Generator Owner shall retain information from the most current and prior verification.

The Compliance Monitor shall retain any audit data for three years.

1.4. Additional Compliance Information

The Regional Reliability Organization and Generator Owner shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

2. Levels of Non-Compliance for Regional Reliability Organization:

- 2.1. Level 1:** There shall be a level one non-compliance if either of the following conditions is present:

2.1.1 Procedures did not meet one of the following requirements: R1.1, R1.2 or R1.4.

2.1.2 No evidence that procedures were distributed as required in R2.

- 2.2. Level 2:** Procedures did not meet two or three of the following requirements: R1.1, R1.2 or R1.4.

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- 2.3. **Level 3:** Procedures did not meet R1.3.
- 2.4. **Level 4:** Procedures did not meet R1.5.1, R1.5.2, R1.5.3, or R1.5.4.

3. Levels of Non-Compliance for Generator Owner:

- 3.1. **Level 1:** Complete, verified generator data were provided for 98% or more but less than 100% of a Generator Owner’s units as required by the regional procedures.
- 3.2. **Level 2:** Complete, verified generator data were provided for than 96% or more, but less than 98% of a Generator Owner’s units as required by the regional procedures.
- 3.3. **Level 3:** Complete, verified generator data were provided for 94% or more, but less than 96% of a Generator Owner’s units as required by the regional procedures.
- 3.4. **Level 4:** Complete, verified generator data were provided for less than 94% less of a Generator Owner’s units as required by the regional procedures.

E. Regional Differences

None identified.

Version History

Version	Date	Action	Change Tracking
Version 1	12/01/05	<ol style="list-style-type: none"> 1. Changed tabs in footer. 2. Removed comma after 2004 in “Development Steps Completed,” #1. 3. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).” 4. Added “periods” to items where appropriate. 5. Changed apostrophes to “smart” symbols. 6. Changed “Timeframe” to “Time Frame” in item D, 1.2. 7. Lower cased all instances of “regional” in section D.3. 	01/20/06