

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:

SAR authorized by Standards Committee for development as a reliability standard July 12, 2007.
Standard Drafting Team appointed by Standards Committee September 11, 2007.

Proposed Action Plan and Description of Current Draft:

This is the first draft of the proposed revision to this standard and includes requirements without violation risk factors, time horizons, measures or Violation Severity Levels. This first posting is for a 30-day comment period from January 6 through February 5, 2010.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Post response to comments and second version draft revision of standard.	June 2010
2. Post response to comments and request authorization to ballot the revised standard.	September 2010
3. Conduct initial ballot.	October 2010
4. Post response to comments.	November 2010
5. Conduct recirculation ballot.	December 2010
6. BOT adoption.	February 2011
7. File with regulatory authorities.	March 2011

A. Introduction

- 1. Title:** **Verification and Data Reporting of Generator Real Power Capability**
- 2. Number:** **MOD-024-2**
- 3. Purpose:** To ensure that planning entities have accurate generator Real Power capability modeling data used in system planning studies.
- 4. Applicability:**
 - 4.1 Functional Entities:**
 - 4.1.1** Generator Owner
 - 4.1.2** Planning Coordinator
 - 4.1.3** Resource Planner
 - 4.2 Facilities:**
 - 4.2.1** Generating Facilities connected at the point of interconnection at 100 kV or above, containing an individual generating unit greater than 20 MVA (individual gross nameplate rating)
 - 4.2.2** Generating plants/Facilities connected at the point of interconnection at 100 kV or above, containing greater than 75 MVA (gross aggregate nameplate rating).
 - 4.2.3** Variable energy units such as wind generators, solar, and run of river hydro are exempt from the requirements of this Standard.
- 5. Effective Date:** All requirements of MOD-024-2 become effective the first day of the first calendar quarter six months after applicable regulatory approval. In those jurisdictions where no regulatory approval is required, the standard shall become effective on the first day of the first calendar quarter six months after Board of Trustees adoption.

Verification requirements in this standard cover the summer and winter peak periods; the compliance monitoring:

- for units to be verified annually per MOD-024-2 Attachment 1 - Verification of Summer and Winter Generating Unit Capability, section number 4, will begin 30 calendar days following the first summer or winter peak period that begins at least 60 calendar days following the effective date.
- for units to be verified every five years per MOD-024-2 Attachment 1 - Verification of Summer and Winter Generating Unit Capability, section number 4, will begin five years after the compliance implementation date for annual units.

B. Requirements

- R1.** Each Generator Owner shall verify the summer and winter Real Power generating capability for each of its units in accordance with MOD-024-2 Attachment 1 - Verification of Summer and Winter Generating Unit Capability and record and submit the information via MOD-024-2 Attachment 2 - One-line Diagram, Table and Summary for Verification Information Reporting.

[Violation Risk Factor: TBD] [Time Horizon: TBD]

- R2.** Each Resource Planner and Planning Coordinator that seeks verified generating unit Real Power capability data shall provide each Generator Owner:

- the desired temperature to which the data is to be adjusted.
- and the reporting schedule consistent with section number 4 of the MOD-024-2 Attachment 1 - Verification of Summer and Winter Generating Unit Capability.

[Violation Risk Factor: TBD] [Time Horizon: TBD]

- R3.** Each Generator Owner shall report to its Resource Planner and Planning Coordinator any change in the gross Real Power generating capability of any unit that is:

- greater than 50 MW compared with the last verification submittal
- and expected to last more than six months

within 15 calendar days of the determination that the change in capability is expected to last more than 6 months.

[Violation Risk Factor: TBD] [Time Horizon: TBD]

C. Measures:

- M1.** Each Generator Owner has evidence that it performed the verification (such as a completed MOD-024-2 Attachment 2) and has evidence that it submitted the information (such as dated electronic mail messages or mail receipts) in accordance with Requirement R1.
- M2.** Each Resource Planner and each Planning Coordinator has evidence (such as dated electronic mail messages or mail receipts) that it provided each Generator Owner the desired temperature to which the verified Real Power generating capability is to be adjusted and the report schedule as specified in Requirement R2.
- M3.** Each Generator Owner has evidence (such as dated electronic mail messages or mail receipts) that it reported the amount of a change in a unit's gross Real Power capability as specified in Requirement R3.

D. Compliance

1. **Compliance Monitoring Process**
 - 1.1. **Compliance Enforcement Authority**

Regional Entity

1.2. Compliance Monitoring Period and Reset Time Frame

Not applicable

1.3. Compliance Monitoring and Assessment Processes

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

1.4. Additional Compliance Information

2. Violation Severity Levels (TBD)

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.				
R2.				
R3				

E. Regional Variances

None.

F. Associated Documents

Version History

Version	Date	Action	Change Tracking

MOD-024-2 Attachment 1 — Verification of Summer and Winter Generating Unit Capability

1. **Verify generating unit summer gross Real Power generating capability as follows:**
 - 1.1. For nuclear and fossil units, record data for one continuous hour of normal operation during the summer period.
 - 1.2. For hydro (other than run of river hydro) and pumped storage units, record data for one continuous hour of normal operation at any time during the year. Adjust the collected data to reflect forecasted reservoir levels or water flow conditions to reflect expected normal operation during the summer season.
 - 1.3. For units of less than 20 MVA that are part of a plant greater than 75 MVA in aggregate, record data either on an individual unit basis or as a group.
2. **Verify generating unit winter gross Real Power generating capability as follows:**
 - 2.1. For nuclear and fossil units, record data for one continuous hour of normal operation during the winter period.
 - 2.2. For hydro (other than run of river hydro) and pumped storage units, record data for one continuous hour of normal operation at any time during the year. Adjust the collected data to reflect forecasted reservoir levels or water flow conditions to reflect expected normal operation during the winter season.
 - 2.3. For units of less than 20 MVA that are part of a plant greater than 75 MVA in aggregate, record data either on an individual unit basis or as a group.
 - 2.4. Alternatively for any unit listed in 2.1, 2.2 or 2.3, by making a temperature correction to the most recent summer gross Real Power generating capability verification. The method used shall be indicated on the form used to record verified data.
3. Data recorded either during or associated with the summer and winter gross Real Power generating capability verification as specified in Number 1 and 2 of this Attachment shall include:
 - 3.1. The average value of the summer and winter gross Real Power generating capabilities over the verification period.
 - 3.2. The average ambient air temperature over the verification period.
 - 3.3. The date of the verification period, including start and end time
 - 3.4. The average megawatt values of the auxiliary Real Power loads and associated system connections, including nominal connection voltage, and an indication if such loads were metered or calculated.
 - 3.4.1. Include Real Power consumption by common auxiliary loads at a multiple unit facility (for example, coal-handling) by prorating the consumption among the appropriate units in the plant and assuming expected normal full load equipment operation of all units.

- 3.4.2. Provide an engineering estimate and associated calculations within 30 days of a request from the Resource Planner or Planning Coordinator for reported loads that were calculated since metering did not exist to measure such auxiliary load(s).
 - 3.4.3. Include Generator Step-Up (GSU) and auxiliary transformers in MOD-024-2 Attachment 2 - One-line Diagram, Table and Summary for Verification Information Reporting.
 - 3.4.4. Show Real Power flows assuming expected normal full load equipment operation of all units in Attachment 2.
 - 3.4.5. Data adjusted according to the respective temperature specified by the Planning Coordinator and Resource Planner in accordance with requirement R2.
4. The periodicity for performing summer and winter Real Power generating capability verification is as follows:
 - 4.1. For each generating unit with a generator maximum nameplate rating of greater than or equal to 75 MVA, annually.
 - 4.2. For each generating unit with a generator maximum nameplate rating less than 75 MVA but greater than 20 MVA and with an average capacity factor over the last three years that is greater than five percent, annually.
 - 4.3. For each individual generating units not included under 4.1 or 4.2 that is either greater than 20 MVA (gross nameplate rating) or is part of a generating plant/facility greater than 75 MVA (gross aggregate nameplate rating), either on an individual unit basis or as a group, verify at least once every five years.
 - 4.4. Alternatively for multiple units installed at the same site where the units have identical designs, identical major components, identical significant control system settings and similar verified capabilities:
 - 4.4.1. Verify approximately 20 percent of all such units annually with all units being verified over a five year period.
 - 4.4.2. Verify at least one unit each year if fewer than five units meet the criteria in 4.4.
 - 4.5. For a generating unit that does not run within the periodicity described in 4.1 through 4.4, verify the unit the next time the unit is run for one continuous hour of normal operation.

MOD-024-2 Attachment 2

One-line Diagram, Table and Summary for Verification Information Reporting

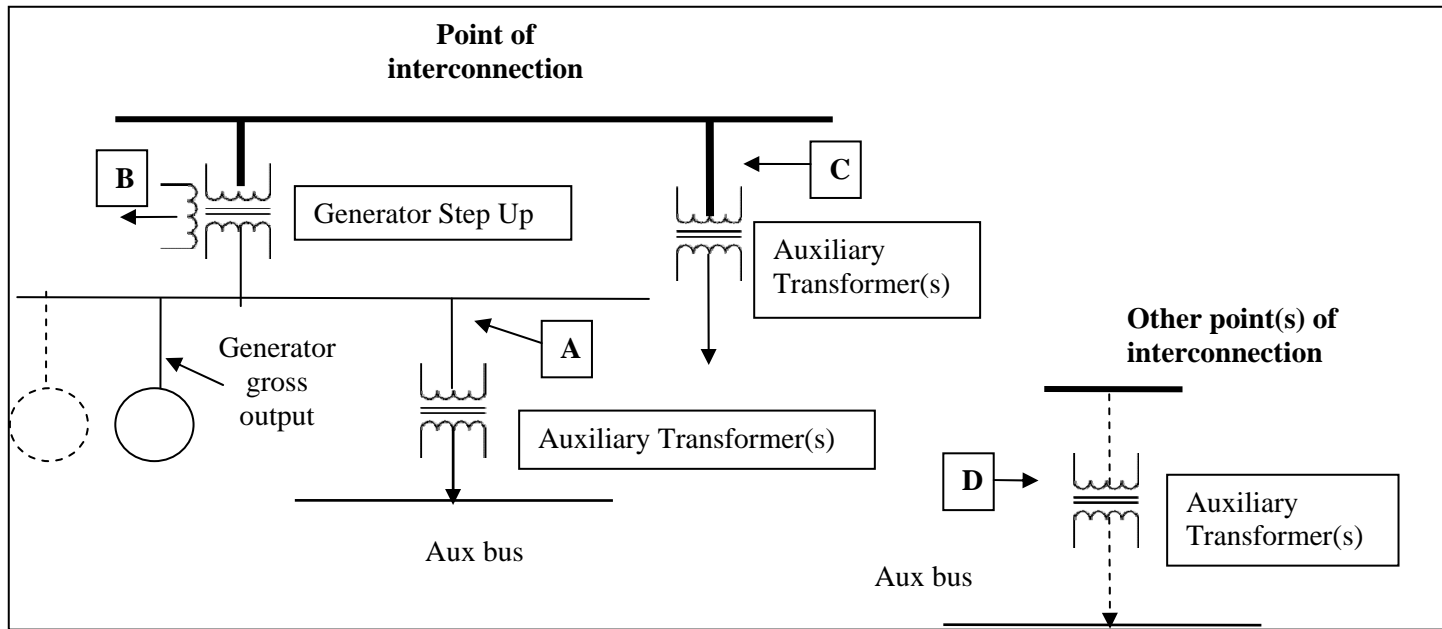
Note: If the configuration of the generation facility does not lend itself to the use of the diagram, tables or summaries for reporting the required information, changes may be made to this form provided that all required information (identified in MOD-024-Attachement 1) is reported.

Company _____ Reported By (name) _____

Plant _____ Unit No _____

Date of Report _____

Simplified one-line diagram showing plant auxiliary load connections and verification



data:

A: _____ kV _____ MW (Sum multiple Auxiliary Transformers.)

metered calculated

B: _____ kV _____ MW (tertiary load, if any)

metered calculated

C: _____ kV _____ MW (Sum multiple Auxiliary Transformers.)

metered calculated

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D: _____ kV _____ MW (If multiple points of interconnection describe these for accurate modeling; report points individually) (Sum multiple Auxiliary Transformers.)

metered calculated

MOD-024-2 Attachment 2 (continued)

Summer Verification Data

(Provide data by unit or Facility as appropriate)

	<u>Gross Real Power generating Capability (MW *)</u>	<u>Aux Power (MW *)</u>	<u>Gross Capability (MW *) minus Aux Power (MW *) equals Net Capability (MW *)</u>
Recorded			
Adjusted			

* Note: Enter average values for the verification hour.

Summary of Summer Verification

- Date of Verification _____ Verification Start Time; _____, Verification End Time _____
- Average ambient air temperature over verification period:
Air temperature: _____ °F
- The recorded MW values were adjusted for the following average temperature conditions:
Air temperature: _____ °F

MOD-024-2 Attachment 2 (continued)

Winter Verification Data

Provide data by unit or Facility as appropriate.

	<u>Gross Real Power generating Capability (MW *)</u>	<u>Aux Power (MW *)</u>	<u>Gross Capability (MW *) minus Aux Power (MW *) equals Net Capability (MW *)</u>
Recorded			
Adjusted			

* Note: Enter average values for the verification hour.

Check One:

- The winter data above is based on adjusted summer values
- The winter data above is based on tracking during a winter hour.

Comments:

Summary of Winter Verification

- Date of Verification¹ _____ Verification Start Time; _____, Verification End Time _____
- Average ambient air temperature over verification period:
Air temperature: _____ °F
- The recorded MW values were adjusted for the following average temperature conditions:
Air temperature: _____ °F

¹ If the winter verification is based on Summer data, provide only the date of the verification, not the start and end times.