

### **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 NERC Reliability Standards Glossary of Terms or the MRO 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 Midwest Reliability Organization (“MRO”) Glossary.*

**Resource Adequacy**<sup>1</sup> is defined as the ability of supply-side and demand-side resources to meet the aggregate electrical demand and energy requirements of the end-use customers with a specified degree of reliability.

**Planned Reserve Sharing Group** (“PRSG”) is defined as a group of Load Serving Entities (“LSEs”) that contractually commit to use their shared resources to meet the planned Resource Adequacy requirements for the load of the PRSG as a whole.

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<sup>1</sup> Historically, the Resource Adequacy requirement was referred to as the planning reserve margin in MAIN Guide #6 and the Reserve Capacity Obligation (“RCO”) in the MAPP Generation Reserve Sharing Pool Handbook.

**A. Introduction**

1. **Title:** Planned Resource Adequacy Requirement<sup>2</sup>
2. **Number:** RES-501-MRO-01
3. **Purpose:** To establish common criteria by which to assess Resource Adequacy in the MRO for the short term and long term planning horizon.
4. **Applicability**
  - 4.1. LSEs or as delegated to:
    - 4.1.1 Planned Reserve Sharing Group
    - 4.1.2 Resource Planner
    - 4.1.3 Planning Authority
5. **(Proposed) Effective Date:** Upon MRO Board Approval for RES-501-MRO-01\_R2 through RES-501-MRO-01\_R5 except that portion of RES-501-MRO-01\_R4 that pertains to RES-501-MRO-01\_R1.  
January 1, 2008 for RES-501-MRO-01\_R1 and that portion of RES-501-MRO-01\_R4 that pertains to RES-501-MRO-01\_R1.

**B. Requirements**

- R1.** *[Violation Risk Factor: Medium]*. The Load Serving Entity and/or its delegate(s) shall perform and possess the documentation of a Resource Adequacy assessment.

To be valid, the Resource Adequacy assessment shall:

- R1.1** Be performed annually unless a document summarizing a review of system data that concludes that changes to system data used in the assessment do not warrant such a study is provided to the MRO.
- R1.2** Determine the peak season for resource adequacy assessment. The peak season is defined as a period consisting of two (2) or more calendar months but less than seven (7) calendar months, which includes the period during which the LSEs annual peak demand is expected to occur.
- R1.3** Determine the minimum planned Resource Adequacy requirements for the short-term planning horizon (defined as the first year beginning exactly one (1) year prior to the end of the upcoming peak season of the year that the analysis is performed) and long-term planning horizon

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<sup>2</sup> This standard does not authorize the MRO, ERO or FERC to order the construction of additional generation or transmission capacity or to set and enforce compliance with standards for adequacy or safety of electric facilities or services. Nothing in this standard shall be construed to preempt any authority of any State/Province to take action to ensure the safety, adequacy, and reliability of electric service within that State, as long as such action is not inconsistent with any reliability standard, as long as such action does not result in lesser reliability outside the State/Province than that provided by the reliability standards.

(defined as the second year immediately following the first year through the tenth year).

- R1.4** Employ a Loss of Load Expectation (“LOLE”) methodology that combines the generation capacity outage probability with the expected demand to give an expected risk of load exceeding available capacity.
- R1.5** Meet a LOLE of no greater than 0.1 day in one (1) year or one (1) day in ten (10) years.

- R1.6** Include, at a minimum, documentation of how and why the following were/were not included in the analysis:
  - R1.6.1** Resource Availabilities.
    - R1.6.1.1** Appropriate modeling of non-conventional resources such as wind and cogeneration.
    - R1.6.1.2** Energy limitations of hydroelectric units.
    - R1.6.1.3** Extreme weather/drought conditions
    - R1.6.1.4** Merchant plant availabilities.
    - R1.6.1.5** Appropriate modeling of firm capacity purchases and sales of the LSE and/or its delegates.
  - R1.6.2** Resource Ratings.
  - R1.6.3** Load Forecasts.
  - R1.6.4** Load Forecast Uncertainty.
  - R1.6.5** Load Diversity.
  - R1.6.6** Emergency assistance from other interconnected systems including multi-area assessment considering transmission limitations where agreements exist to provide such service.
  - R1.6.7** Generation and transmission outage schedules.
  - R1.6.8** Transmission limitations that prevent the delivery of generation reserves.
  - R1.6.9** Uncertainty in unit forced outage rates.
  - R1.6.10** Proper hourly demand modeling (firm, interruptible).
  - R1.6.11** Available Demand-Side Management.
  - R1.6.12** Proper modeling of emergency operation procedures used during unexpected resource outages.
  - R1.6.13** Availability and deliverability of fuel.
- R1.7** Document and justify the inclusion of market resources not committed to serving load (uncommitted resources) within the planned Resource Adequacy requirements analysis.
- R1.8** Document what the planned Resource Adequacy requirements consists of as a percentage of the 50:50 probability forecast peak load.
- R1.9** Document that the resource capacity is not counted more than once as reserve by multiple Load Serving Entities, Reserve Sharing Groups and/or Planning Reserve Sharing Groups.
- R2.** *[Violation Risk Factor: Lower].* The LSE and/or its delegate(s) shall annually provide the results of the planned Resource Adequacy assessment or the justification that such study need not be conducted and provide the results to the MRO.
- R3.** *[Violation Risk Factor: Lower].* The LSE and/or its delegate(s) shall, at a minimum, submit load and capability data on an annual basis that demonstrates

its plan to meet the planned Resource Adequacy requirements established by the most recent planned Resource Adequacy assessment for the short-term and long-term planning horizons.

- R4.** *[Violation Risk Factor: High]*. The LSE and/or its delegate(s) shall demonstrate annually that the appropriate resources were secured for and in effect at the time of the short-term planning horizon. The LSE and/or its delegate(s) shall also demonstrate that the resources were not double counted to validate compliance with planned resource adequacy requirements as specified in RES-501-MRO-01\_R1 and RES-501-MRO-01\_R3.
- R5.** *[Violation Risk Factor: Lower]*. Each LSE shall report to the MRO within 90 days of the effective date of RES-501-MRO-01, which Planned Reserve Sharing Group, Resource Planner or Planning Authority is responsible for meeting Reliability Standards RES-501-MRO-01\_R1 through R4. If a LSE changes the party that is responsible, the LSE shall notify the MRO at least 90 days prior to the proposed change or 180 days prior to the planning period under review, whichever is greater. The LSE does not have to delegate all of the requirements in Reliability Standards RES-501-MRO-01\_R1 through R4 to the same party. The LSE shall provide the MRO with evidence of acceptance of the delegation by the applicable party. All delegations are subject to verification by the MRO.

A LSE can meet this requirement by providing confirmation in accordance with the reporting time requirements outlined in RES-501-MRO-01\_R5 that the LSE's load is in a Balancing Authority Area that accounts for the LSE's load in its planning process and that the Balancing Authority is a member of a Planned Reserve Sharing Group.

**C. Measures**

- M1.** The LSE and/or its delegate(s) shall have a valid planned Resource Adequacy assessment covering the short-term and long-term planning horizons per RES-501-MRO-01\_R1.
- M2.** The LSE and/or its delegate(s) shall have evidence that it has plans, load and capability data that demonstrates its ability to meet the Resource Adequacy assessment per RES-501-MRO-01\_R3 .
- M3.** The LSE and/or its delegate(s) shall have evidence that it has secured appropriate resources for and were in effect at the time of the short-term planning horizon per RES-501-MRO-01\_R4 .
- M4.** The LSE and/or its delegate(s) shall have evidence that it has completed all the reports as required in RES-501-MRO-01\_R2 through R5.

**D. Compliance**

**1. Compliance Monitoring Process**

- 1.1. Compliance Monitoring Responsibility.** Midwest Reliability Organization.
- 1.2. Compliance Monitoring Period and Reset Timeframe.** Annual.
- 1.3. Annual Data Retention Period.** The MRO and the LSE and/or its delegate(s) shall each retain the data necessary to conduct the analysis

and documentation of the latest results from such analysis along with evidence of plan implementation for five (5) years. In addition, entities found non-compliant shall keep information related to non-compliance until found compliant.

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

**1.4. Additional Compliance Information.** None specified

**2. Violation Severity Levels**

- Lower** One of the reporting requirements of RES-501-MRO-01\_R2 through R5 was not met.
- Moderate** A valid analysis was not performed for the long-term planning horizon in accordance with RES-501-MRO-01\_R1 or the appropriate plan was not prepared for the long-term planning horizon in accordance with RES-501-MRO-01\_R3.
- High** Not Applicable.
- Severe** A valid analysis was not performed for the short-term planning horizon in accordance with RES-501-MRO-01\_R1..

Comment [slh1]: Check reference.

**Version History**

Version	Date	Action	Change Tracking
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