NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

On February 26, 2008 a change was made to the table on page 5; "MOD-001-0" to "MOD-011-0."

Standard Authorization Request Form

Title of Proposed Standard	Resource Adequacy Assessments
Request Date	November 11, 2004
Revised Date	November 15, 2005
Revised Date	December 15, 2006
Revised Date	August 17, 2007

SAR Requestor Information		**SAR Type** (Put an 'x' in front of one of these selections)	
Name Mary Johannis (RIS Chair) on behalf of the Resource Adequacy Assessments SAR Drafting Team		☒	New Standard
Primary Contact Mary Johannis		☐	Revision to existing Standard
Telephone Fax	503-230-3047 503-230-3270	☐	Withdrawal of existing Standard
E-mail	mhjohannis@bpa.gov	☐	Urgent Action

Purpose/Industry Need

The purpose of this standard is to implement certain recommendations from the *Resource and Transmission Adequacy Task Force (RTATF) Report* and the *Gas/Electricity Interdependency Task Force Report,* approved by the NERC Board on June 15, 2004, related to resource adequacy. This standard would establish a requirement for the Regions to: 1) create a metric(s) to assess resource adequacy that takes into account various factors, including, but not limited to, fuel deliverability, 2) perform resource adequacy assessments, 3) make the results of the assessments available to the industry and appropriate regulatory agencies, and 4) make the assessments and associated data available to NERC for their review. If approved, this standard will facilitate the Energy Policy Act of 2005 mandate for the Electricity Reliability Organization (ER0) to "conduct periodic assessments of the reliability and adequacy of the bulk-power system in North America,"[1].

[1] Energy Policy Act of 2005, Title XII—Electricity, Subtitle A—Reliability Standards, (g) RELIABILITY REPORTS

Reliability Functions

Note – The SAR Form has been updated to add the ERO and RE and to revise the description of many of the 'functions' to reflect the definitions in the approved Functional Model V3. These changes are not shown as 'red line' changes.

The Standard will Apply to the Following Functions		
☒	Regional Entity	Conducts the regional activities related to planning and operations, and coordinates activities of Responsible Entities to secure the reliability of the Bulk Electric System within the region and adjacent regions.
☐	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.
☐	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.
☐	Interchange Authority	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
☒	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
☒	Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.
☐	Transmission Planner	Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area.
☐	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
☐	Transmission Owner	Owns and maintains transmission facilities.
☐	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
☐	Distribution Provider	Delivers electrical energy to the End-use customer.
☒	Generator Owner	Owns and maintains generation facilities.
☒	Generator Operator	Operates generation unit(s) to provide real and reactive power.
☐	Purchasing-Selling Entity	Purchases or sells energy, capacity, and necessary reliability-related services as required.
☐	Market Operator	Interface point for reliability functions with commercial functions.
☒	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	
☒	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.
☐	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.
☒	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.
☐	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
☐	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
☐	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?
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

Detailed Description: (Provide enough detail so that an independent entity familiar with the industry could draft, modify, or withdraw a Standard based on this description.)

Definition: Resource adequacy is defined as the ability of supply-side and demand-side resources to meet the aggregate electrical demand and energy requirements (including losses) of the end-use customers with a specified degree of reliability not inconsistent with NERC Standards and any applicable more stringent Regional or local criteria

This Standard would require the following:

1) Each NERC regional reliability assurance functional entity (Regional Entity) establish a framework (consisting of criteria or guidelines, methodology, assumptions, approach and reporting requirements), through a stakeholder review process, by which to assess the resource adequacy of the Region. Such framework needs to recognize applicable local/state/provincial or multi-state/provincial resource adequacy criteria or requirements, where such criteria/requirements exist. The regional resource adequacy framework should include a probability-based evaluation or some other systematic approach for assessing whether projected resources will be sufficient to meet forecasted load taking into account relevant uncertainties.

2) RTO/ISO(s), generation planning reserve sharing pool(s) and/or other appropriate entity(ies) to comply with the Region's resource adequacy framework, consistent with the applicable local/state/provincial or multi-state/provincial entities' requirements.

3) Each Region to periodically assess, through analysis, the resource adequacy of the Region utilizing the established framework. The analysis should demonstrate compliance with NERC Standards and any applicable more stringent Regional or Local criteria. As a part of the assessment, each Region needs to describe the resource, transmission and load assumptions for the study period; identify risks to resource adequacy, such as the impacts, if any, of fuel supply interruptions or environmental constraints; and describe available mechanisms to mitigate such impacts. The assessment is to include analyses supporting all critical assumptions.

4) Provisions to allow the results of all Regional resource adequacy assessments, whether performed by NERC or the Regions, to be made public and available on a public website with the understanding that some data which supports the assessment may be considered confidential. The Region is to aggregate the data considered confidential and not report specific data if that data is not available in other public forums.

5) ERO to perform independent periodic audits of the Regional resource adequacy assessments to determine compliance with NERC Standards and any applicable more stringent Regional or Local criteria. Such audits need to also confirm adherence to the Region's stated resource adequacy framework (criteria or guidelines, methodology, assumptions, approach, and reporting requirements).

6) The Regions to participate in periodic NERC reviews of their respective Regional resource adequacy frameworks (criteria or guidelines, methodology, assumptions, approach, and reporting requirements) for general consistency, interdependency and/or impact on adjacent Regions.

Related Standards

Standard No.	Explanation
MOD-011-0	Regional Steady-State Data Requirements and Reporting Procedures
MOD-014-0	Development of Steady State System Models
TPL-005-0	Regional and Inter-Regional Self-Assessment Reliability Reports
MOD-017-1	Aggregated Actual and Forecast Demands, Net Energy for Load
MOD-018-0	Reports of Actual and Forecast Demand Data
MOD-016-1	Actual and Forecast Demands, Net Energy for Load, Controllable DSM

Related SARs

SAR ID	Explanation

Regional Variances

Region	Explanation
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	