

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
<u>Revised Date</u>	<u>November 15, 2005</u>
<u>Revised Date</u>	<u>December 15, 2006</u>
<u>Revised Date</u>	<u>August 17, 2007</u>

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	<input checked="" type="checkbox"/>	New Standard
Primary Contact Mary Johannis	<input type="checkbox"/>	Revision to existing Standard
Telephone 503-230-3047 Fax 503-230-3270	<input type="checkbox"/>	Withdrawal of existing Standard
E-mail <a href="mailto:mhjohannis@bpa.gov">mhjohannis@bpa.gov</a>	<input type="checkbox"/>	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. ~~Because the NERC functional model was still in the developmental stages at the time of the formulation of the RTATF Report, no attempt was made to develop recommendations that specifically conform to the NERC functional model framework.~~ 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 (ERO) to "conduct periodic assessments of the reliability and adequacy of the bulk-power system in North America,"<sup>1</sup> ~~assuming NERC is eventually certified as the ERO.~~

<sup>1</sup> 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		
<input checked="" type="checkbox"/>	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.
<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 checked="" type="checkbox"/>	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
<input checked="" type="checkbox"/>	Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.
<input type="checkbox"/>	Transmission Planner	Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator 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"/>	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"/>	Distribution Provider	Delivers electrical energy to the End-use customer.
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation facilities.
<input checked="" 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"/>	Market Operator	Interface point for reliability functions with commercial functions.
<input checked="" 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**

<b>Applicable Reliability Principles</b>	
<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.
<input type="checkbox"/>	8. Bulk power systems shall be protected from malicious physical or cyber attacks.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b>	
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 Organization (Region)~~ 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~~ shall recognize applicable local/state/provinciale or multi-state/provinciale 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 ~~of~~ 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) ~~should establish resource adequacy requirements so as~~ to comply with the Region's resource adequacy framework, consistent with the applicable local/state/provincial or multi-state/provincial entities' requirements.

~~criteria (or criteria) of the Region. The Region or sub-regions should establish assessment methodologies to determine whether the adequacy criteria are met.~~

3) Each Region ~~shall 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 ~~should~~ needs to describe the resource, transmission and load assumptions expected resource characteristics for the study period; ~~The assessment should~~ 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. ~~Other factors such as expected transmission constraints and/or environmental restrictions that may impact the Region's resource adequacy should be examined.~~ The assessment ~~should~~ 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, ~~should to~~ be made public and available on a public website with the understanding that some data which supports the assessment may be considered confidential ~~and may not be made public~~. The Region will is to aggregate the supply/demand data considered confidential and not report specific data if that within the Region and report an aggregate number, not individual electric utility supply/demand data if that data is not available in other public forums.

5) ~~NERC should~~ 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 should validate the compliance of the Regional-Region's stated resource adequacy framework (criteria or guidelines, methodology, assumptions, approach, and reporting requirements).~~

~~requirements~~

~~with the resource adequacy criteria and may include the performance of independent analysis by NERC. Such audits should also confirm the consistent application of standard resource adequacy assessment methodologies, including appropriate Regional variations.~~

6) ~~NERC, in conjunction with the Regions, should conduct~~The Regions to participate in periodic NERC reviews of their respective Regional resource adequacy frameworks (criteria or guidelines, methodology, assumptions, approach, and reporting requirements)~~criteria and their methodologies~~ for general consistency, interdependency and/or impact on adjacent Regions, ~~the treatment of contract considerations, and the deliverability of resources to load.~~

**Related Standards**

Standard No.	Explanation
MOD-00411-0	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
<u>MOD-016-1</u>	<u>Actual and Forecast Demands, Net Energy for Load, Controllable DSM</u>

**Related SARs**

SAR ID	Explanation
<del>MOD-016-1</del>	<del>Actual and Forecast Demands, Net Energy for Load, Controllable DSM</del>

**Regional Variances**

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