

Standards Authorization Request Form

When completed, email this form to:
sarcomm@nerc.com

NERC welcomes suggestions to improve the reliability of the bulk power system through improved reliability standards. Please use this form to submit your request to propose a new or a revision to a NERC's Reliability Standard.

Request to propose a new or a revision to a Reliability Standard

Title of Proposed Standard(s):	Project 2009-02: Real-time Reliability Monitoring and Analysis Capabilities		
Date Submitted:	June 18, 2015		
SAR Requester Information			
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SAR Type (Check as many as applicable)			
<input checked="" type="checkbox"/> New Standard	<input type="checkbox"/> Withdrawal of existing Standard		
<input checked="" type="checkbox"/> Revision to existing Standard	<input type="checkbox"/> Urgent Action		

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Purpose (Describe what the standard action will achieve in support of Bulk Electric System reliability.):

To establish requirements for Real-time monitoring and analysis capabilities used by System Operators in support of reliable System operations.

Industry Need (What is the industry problem this request is trying to solve?):

According to the *Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations* dated April 2004 (2003 Blackout Report), a principal cause of the August 14 blackout was a lack of situational awareness. Recommendation 22 of the 2003 Blackout Report states that the industry should "evaluate and adopt better Real-time tools for operators and reliability coordinators." NERC's Operating Committee formed the Real-time Tools Best Practices Task Force (RTBPTF) to evaluate Real-time tools and their usage within the industry. The Task Force produced the report *Real-Time Tools Survey Analysis and Recommendations* dated March 13, 2008 (RTBPTF Report)

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that included recommendations for the functionality, performance, and management of Real-time tools.

The FERC and NERC Staff Report *Arizona-Southern California Outages on September 8, 2011* (2011 Southwest Outage Report) also cited weaknesses in Real-time situational awareness and recommended improvements in Real-time monitoring and analysis capabilities.

In approving the original TOP and IRO standards in Order No. 693, FERC directed future improvements that would require a minimum set of capabilities be made available to System operators:

- P 905: *Further, consistent with the NOPR, the Commission directs the ERO to modify IRO-002-1 to require a minimum set of tools that must be made available to the reliability coordinator. We believe this requirement will ensure that a reliability coordinator has the tools it needs to perform its functions.*
- P 906: *[t]he Commission clarifies that the Commission's intent is to have the ERO develop a requirement that identifies capabilities, not actual tools or products. The Commission agrees that the latter approach is not appropriate as a particular product could become obsolete and technology improves over time.*
- P 1660: *We adopt our proposal to require the ERO to develop a modification [to TOP standards] related to the provision of a minimum set of analytical tools. In response to LPPC and others, we note that our intent was not to identify specific sets of tools, but rather the minimum capabilities that are necessary to enable operators to deal with real-time situations and to ensure reliable operation of the Bulk-Power System.*

This SAR addresses the event reports, Order No. 693 directives, and recommendations from the RTBPTF Report that have not been addressed in other standards projects. The SAR Drafting Team also conducted a Technical Conference on June 4, 2015 to obtain stakeholder input on reliability objectives to be addressed in the proposed project.

Brief Description (Provide a paragraph that describes the scope of this standard action.)

The Standards Drafting Team (SDT) shall develop requirements and definition(s), as needed, for Real-time monitoring and analysis capabilities to ensure effective operator situational awareness. The project will address recommendations from the 2003 Blackout Report, the 2011 Southwest Outage Report, and the RTBPTF Report, as well as directives from FERC Order No. 693, that have not already been addressed in existing or proposed Reliability Standards.

Detailed Description (Provide a description of the proposed project with sufficient details for the standard drafting team to execute the SAR. Also provide a justification for the development or revision of the standard, including an assessment of the reliability and market interface impacts of implementing or not implementing the standard action.)

Situational awareness of Real-time system operations is enabled through monitoring and analysis tasks performed by operators. Existing and proposed TOP and IRO standards and definitions developed in

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Project 2014-03 Revisions to TOP and IRO Standards require Reliability Coordinators (RCs), Transmission Operators (TOPs), and Balancing Authorities (BAs) to perform monitoring and analysis to prevent instability, uncontrolled separation, and Cascading outages that adversely impact the Interconnection. The proposed project will provide additional reliability benefits by addressing issues with the availability and information quality of Real-time monitoring and analysis capabilities.

Specifically, the SDT will develop requirements and definition(s), as needed, to accomplish the following:

- Establish a common understanding of *monitoring* as it applies to Real-time situational awareness of the Bulk Electric System (BES),
- Provide operators with indication(s) of the quality of information being provided by *monitoring* capabilities and procedure(s) to address data quality issues,
- Provide operators with notification(s) during unplanned loss of *monitoring* capabilities, and
- Provide operators with indication(s) of the quality of information being provided by *analysis* capabilities and procedure(s) to address analysis quality issues.

When completed, the project will have addressed recommendations from the 2003 Blackout Report, the 2011 Southwest Outage Report, and the RTBPTF Report, as well as directives from FERC Order No. 693, that have not already been addressed in existing or proposed Reliability Standards.

Reliability Functions

The Standard will Apply to the Following Functions (Check each one that applies.)

<input type="checkbox"/> Regional Reliability Organization	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 checked="" 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 checked="" 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.

Reliability Functions	
<input type="checkbox"/> Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
<input 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 checked="" 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 type="checkbox"/> Generator Owner	Owns and maintains generation facilities.
<input 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 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	
Applicable Reliability Principles (Check all that apply).	
<input checked="" type="checkbox"/>	1. Interconnected bulk power 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 checked="" type="checkbox"/>	2. The frequency and voltage of interconnected bulk power 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 power 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 power systems shall be developed, coordinated, maintained and implemented.

Reliability and Market Interface Principles

<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
<input type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk power 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.
Does the proposed Standard comply with all of the following Market Interface Principles?	
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Enter (yes/no) YES
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	YES
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	YES
4. A reliability 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

Related Standards

Standard No.	Explanation
Project 2014-03 Revisions to TOP and IRO Standards	Proposed TOP and IRO standards and definitions from Project 2014-03 require RC, TOP, and BAs to perform monitoring and analysis to prevent instability, uncontrolled separation, and Cascading outages that adversely impact the Interconnection. The proposed standards and definitions are pending regulatory approval.

Related SARs	
SAR ID	Explanation

Regional Variances	
Region	Explanation
ERCOT	
FRCC	
MRO	
NPCC	
RFC	
SERC	
SPP	
WECC	