Standard Authorization Request Form

Title of Proposed Standard:	Operating Personnel Communications Protocols
Request Date:	March 1, 2007

SAR Requester Information

Name: ***Harry Tom - to be replaced with SAR drafting team chair when SAR drafting team is appointed.***		***SAR Type (Check one box.)***	
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Purpose *(Describe the purpose of the proposed standard – what the standard will achieve in support of reliability.)*

Require that real time system operators use standardized communication protocols during normal and emergency operations to improve situational awareness and shorten response time. The purpose of revising and expanding the existing requirements that address real-time system operator communications is to:

1. Provide an adequate level of reliability for the North American bulk power systems – by ensuring that the standards are complete and the requirements are set at an appropriate level to ensure reliability.

2. Ensure the standard or standards are enforceable as mandatory reliability standards with financial penalties - the applicability to bulk power system owners, operators, and users, are clearly defined; the purpose, requirements, and measures are results-focused and unambiguous; the consequences of violating the requirements are clear.

3. Consider other general improvements described in the standards development work plan.

4. Consider stakeholder comments received during the initial development of the standards and other comments received from Electric Reliability Organization (ERO) regulatory authorities, as noted in the attached review sheets.

5. Satisfy the standards procedure requirement for five-year review of the standards.

Industry Need *(Provide a detailed statement justifying the need for the proposed standard, along with any supporting documentation**.)***

The need for improved real-time communications protocols was identified during the investigation of the August 2003 Blackout. Blackout Recommendation #26 is: “Tighten communications protocols, especially for communications during alerts and emergencies. Upgrade communication system hardware where appropriate.” (Note that this SAR does not include the second part of this recommendation regarding the upgrade to communication system hardware.)

Brief Description *(Describe the proposed standard in sufficient detail to clearly define the scope in a manner that can be easily understood by others.)*

This standard will require the use of specific communication protocols, especially for communications during alerts and emergencies. The standard will be applicable to transmission operators, balancing authorities, reliability coordinators, generator operators and distribution providers.

Requirements will include protocols for communicating changes to real-time operating states and protocols for issuing and responding to operating directives.

The project may involve moving some requirements that address communications protocols from existing standards into this new standard and will involve adding new requirements that more fully address communications protocols under various operating scenarios.

Reliability Functions

The Standard will Apply to the Following Functions (Check all applicable boxes.)		
☒	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 Coordinator	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.

Reliability and Market Interface Principles

Applicable Reliability Principles (Check all boxes that apply.)	
☒	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.
☐	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.
☐	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.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power 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 power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The reliability of the interconnected bulk power 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? *(Select 'yes' or 'no' from the drop-down box.)*	
Recognizing that reliability is an essential requirement of a robust North American economy:	
1. A reliability standard shall not give any market participant an unfair competitive advantage.	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

Detailed Description (Provide enough detail so that an independent entity familiar with the industry could draft a standard based on this description.)

Scope
The scope of the proposed standard or revised standards is to establish a common lexicon of communications protocols and communications paths such that all operators and users of the North American bulk electric system have the same understanding as to its meaning, usage and take pre-determined action in response. The August 2003 Blackout Recommendation Number 26 calls for a tightening of communications protocols. This standard is to ensure that effective communication is practiced and delivered in clear language via pre-established communications paths among pre-identified operating entities. References to communication protocols in other NERC Standards may be moved to this new standard.

Applicability
Medical, law enforcement, air traffic control and other fields routinely use mutually defined and understood terminology or codes. Clear and mutually established communications protocols used during real time operations under normal and emergency conditions ensure universal understanding of terms and reduce errors.

Communications protocols shall precisely define terms, codes, phrases, words, etc. as to their connotation, conditions for use, context of use and expected responses in reply to these terms, codes, phrases, words, etc. Furthermore the protocols shall define a rigorous script for the Sender and Receiver of information. Effective communications with proper communications protocols among the operating entities are essential for maintaining reliable system operations.

The standard will include requirements for the following:

1. Real—time system operators will be required to use specific communications protocols under normal, abnormal and emergency conditions to quickly relay critical reliability-related information.

2. Reliability Coordinators, Balancing Authorities, Generation Operators, Transmission Operators and Distribution Providers will be required to adopt and employ directives that use pre-defined terms, and will require entities that receive those directives to respond to the reliability coordinator using pre-defined terms.

3. The standard will include requirements for entities that experience abnormal conditions to use pre-defined terms to communicate the operating situation to other entities that are in a position to either assist in resolving the operating situation or to entities that are impacted by the operating situation.

4. The standard may include other requirements that involve communications protocols for real-time system operators.

The standard should consider the FERC staff’s Preliminary Assessment of NERC Standards (dated May 11, 2006) in which the FERC staff cited

various Blackout Report excerpts pertaining to ineffective communications as a factor common to the August 14 blackout and other previous major outages in North America. The Commission staff interprets Blackout Report recommendation #26 that urges "effective communications" with "tightened communications protocols" among operating entities to include two key components:

(i) Effective communications that are delivered in clear language via pre-established communications paths among pre-identified operating entities, and

(ii) Communications protocols which clearly identify that any operating actions with reliability impact beyond a local area or beyond a Reliability Coordinator's area must be communicated to the appropriate Reliability Coordinator for assessment and approval prior to their implementation to ensure reliability of the interconnected systems.

The communications protocols may be developed and then distributed to relevant standards and/or may be developed and retained in one or more specialized standards.

Related Standards

Standard No.	***Explanation – these requirement may need to be modified or moved to the new standard***
COM-001-1	R4 is a requirement for the Reliability Coordinator's, Transmission Operator's, and Balancing Authority's real-time operating personnel to use English when communicating between entities.
COM-002-2	R1.1 is a requirement for the Balancing Authority and Transmission Operator to make notifications when there is a threat to reliability. R2 is a requirement for the Reliability Coordinator, Transmission Operator and Balancing Authority relative to issuing and receiving operating directives.
EOP-001-9	R4.1 includes a requirement for the Transmission Operator and Balancing Authority to have communications protocols for use during emergencies
EOP-002-2	R6.5 and R7.2 require the Balancing Authority to ask the Reliability Coordinator to declare an Energy Emergency or an Energy Emergency Alert under certain conditions R8 requires the Reliability Coordinator to issue an Energy Emergency Alert under certain conditions R9.1 requires the Load-serving Entity to ask the Reliability Coordinator to declare an Energy Emergency Alert under certain conditions
EOP-006-1	R4 requires the Reliability Coordinator to disseminate information regarding restoration to neighboring Reliability Coordinators and Transmission Operators or Balancing Authorities R5 requires the Reliability Coordinator to approve, communicate, and coordinate the re-synchronizing of major system islands or synchronizing points
CIP-001-1	R1 and R2 require operating entities to have procedures for communicating information relative to sabotage of bulk power system facilities
CIP-008-1	R1.2 requires the responsible entity to have a communication plan for response to a cyber security incident
IRO-001-1	R3 requires the Reliability Coordinator to direct entities to act and R8 requires entities to respond to the Reliability Coordinator's directives
IRO-004-1	R6 requires the Reliability Coordinator to direct entities to act and R7 requires entities to respond to the Reliability Coordinator's directives
IRO-005-2	R4 requires the Reliability Coordinator to issue an Energy Emergency Alert under certain conditions R3, R5, R8, R11, F15, and R17 require the Reliability Coordinator to direct actions to alleviate various types of abnormal or emergency situations
IRO-014-1	R1.1 requires Reliability Coordinators to have procedures processes or plans that address communications and notifications made between Reliability Coordinators under various operating scenarios
PRC-001-1	R6 requires the Transmission Operator and Balancing Authority to make notifications when there is a change in the status of a special protection system
TOP-001-1	R3 requires some responsible entities to comply with the Reliability Coordinator's and Transmission Operator's directives R4 requires some responsible entities to comply with the Transmission Operator's directives R5 requires the Transmission Operator to notify its Reliability Coordinator of certain emergency situations

TOP-002-2	R14, R16 and R17 require responsible entities to notify their Reliability Coordinator of various changes to operating parameters R18 requires the use of uniform line identifiers when referring to transmission facilities of an interconnected network
TOP-007-0	R1 requires the Transmission Operator to notify its Reliability Coordinator when it exceeds an SOL or IROL R4 requires the Reliability Coordinator to direct entities to take actions to restore the system to within SOLs or IROLs
TOP-008-1	R3 requires the Transmission Operator to make notifications if it disconnects an overloaded facility
VAR-001-1	R8 and R12 require the Transmission Operator to direct actions to maintain voltage within limits and to prevent voltage collapse
VAR-002-1	R2.2 and R5.1 require the Generator Operator to comply with directives Rr3 requires the Generator Operator to notify the Transmission Operator of various status or capability changes

Related SARs

SAR ID	***Explanation***

Regional Variances

Region	***Explanation***
ERCOT	
FRCC	
MRO	
NPCC	
RFC	
SERC	
SPP	
WECC	