NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Authorization Request Form

When completed, email this form to:
Valerie.Agnew@nerc.net

For questions about this form or for assistance in completing the form, call Valerie Agnew at 404-446-2566.

NERC welcomes suggestions for improving the reliability of the Bulk-Power System through improved Reliability Standards. Please use this form to submit your proposal for a new NERC Reliability Standard or a revision to an existing standard.

Request to propose a new or a revision to a Reliability Standard			
Proposed Standard:	PRC-005-4		
Date Submitted:	2/12/2014		
SAR Requester Information			
Name:	Charles Rogers		
Organization:	Protection System Maintenance Standard Drafting Team		
Telephone:	517-788-0027	E-mail:	Charles.Rogers@cmsenergy.com
SAR Type (Check as many as applicable)			
☐ New Standard		☐ Withdrawal of existing Standard	
☒ Revision to existing Standard		☐ Urgent Action	

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

The Federal Energy Regulatory Commission, in paragraphs 11-15 of Order No. 758, accepted NERC's proposal to "develop, either independently or in association with other technical organizations such as IEEE, one or more technical documents which:

1. describe the devices and functions (to include sudden pressure relays which trip for fault conditions) that should address FERC's concern; and
2. propose minimum maintenance activities for such devices and maximum maintenance intervals, including the technical basis for each."

NERC is following through on its commitment to "propose a new or revised standard (e.g. PRC-005) using the NERC Reliability Standards development process to include maintenance of such devices, including establishment of minimum maintenance activities and maximum maintenance intervals." FERC also directed NERC to file an informational filing with a schedule for the development of the changes to the standard.

The NERC System Protection and Control Subcommittee has subsequently issued a technical paper entitled "Sudden Pressure Relays and Other Devices that Respond to Non-Electrical Quantities". The SPCS recommended the following guidance to address the concerns stated in FERC Order No. 758:

"Modify PRC-005 to explicitly address maintenance and testing of the actuator device of the sudden pressure relay when applied as a protective device that trips a facility described in the applicability section of the Reliability Standard.

- Develop minimum maintenance activities for sudden pressure relays similar to Table 1-1: Protective Relay. Based on the survey results, the SPCS recommends the maximum interval for time-based maintenance programs be 6 years.
- Modify Table 1-5: Control Circuitry Associated With Protective Functions to explicitly include the sudden pressure control circuitry."

In addition to the above need to address sudden pressure relays, during the development of PRC-005-3, several commenters raised concerns that there is no obligation for the Balancing Authority (BA) to provide the essential data (the largest BES generating unit within the BA area, per Applicability section 4.2.6.1 of PRC-005-3) for the responsible entities to implement PRC-005-3. Modifying the Applicability of PRC-005-2 was determined to be outside the scope of the PRC-005-3 SAR; consequently, the issue was placed in the NERC Issues Database for consideration during the development of PRC-005-4, and therefore is set forth in this SAR to ensure it is within its scope.

SAR Information
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Industry Need (What is the industry problem this request is trying to solve?):
Also, during the development of NERC Reliability Standard PRC-025-1, a possible inconsistency between that standard and PRC-005-2 was identified regarding the applicability of generator station service transformers. This issue will be considered during the development of PRC-005-4. Additionally, the SDT will review the standard to determine if any modifications are necessary to align the standard with changes made to other NERC Reliability Standards, the BES definition, and any other developments that followed the NERC BOT adoption of PRC-005-2 and PRC-005-3. Finally, NERC staff has requested that possible alternatives to the 24-year record retention period be evaluated by the SDT. During the consideration of PRC-005-2, the Office of Management and Budget requested additional support for the lengthy retention period. Possible solutions include modifying the measures in Section C 'Measures' or the evidence retention in Section D 'Compliance' of the standard. Modifying the standard as set forth will promote the reliable operation of the Bulk Electric System (BES) by: assuring that sudden pressure relays are properly maintained so they may be expected to perform properly; assuring that the Applicability section of PRC-005-4 accurately reflects the relevant Functional Entities and Facilities; improving consistency with other Reliability Standards and the BES definition. No market interface impacts are anticipated.

SAR Information
Purpose or Goal (How does this request propose to address the problem described above?):
The definition of Protection System may be revised, or a new definition created that describes the relays becoming applicable to the revised standard. The Applicability section of the standard may be modified to: 1) describe explicitly those sudden pressure relays that must be maintained in accordance with the revised standard; 2) include Balancing Authorities; and 3) provide consistency with other Reliability Standards and the BES definition. The tables of minimum maintenance activities and maximum maintenance intervals will be modified or added to include appropriate intervals and activities for sudden pressure relays. The SDT shall consider possible alternatives to the 24-year record retention period in PRC-005-3. Possible solutions include modifying the measures in Section C 'Measures' or the evidence retention in Section D 'Compliance'. The SDT shall consider modifications, as needed, to address any FERC directives that may result from the Commission's consideration of PRC-005-3, which is pending regulatory approval. Finally, the Supplementary Reference Document (provided as a technical reference for PRC-005-3) should be modified to provide the rationale for the maintenance activities and intervals within the revised standard, as well as to provide application guidance to industry.
Identify the Objectives of the proposed standard's requirements (What specific reliability deliverables are required to achieve the goal?):
Successful implementation of the revised standard will assure that the sudden pressure relays will perform as needed for the conditions anticipated by those performance requirements.
Brief Description (Provide a paragraph that describes the scope of this standard action.)
The Standard Drafting Team (SDT) shall modify NERC Standard PRC-005-3 to explicitly address the maintenance of sudden pressure relays that trip a facility as described in the Applicability section of the Reliability Standard. The SDT shall also consider changes to the standard that provide consistency and alignment with other Reliability Standards. Additionally, the SDT shall modify the standard to address any directives issued by FERC related to the approval of PRC-005-3.

SAR Information
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.)
The drafting team shall: 1. Consider revising the title of the standard to appropriately include sudden pressure relays. 2. Consider modifying the Purpose of the standard as necessary to address sudden pressure relays. 3. Consider revising the definition of Protection System, or creating a new definition for the applicable sudden pressure relays. 4. Modify the Applicability section of the standard as necessary. 5. Revise or add requirements as necessary. 6. Modify or create additional tables within the standard to include maximum intervals and minimum activities appropriate for the devices being addressed, with consideration for the technology of the devices and for any condition monitoring that may be in place for those devices. 7. Modify the measures and Violation Severity Levels as necessary to address the modified requirements. 8. Modify Section C 'Measures' or Section D 'Compliance' of the standard, as needed, to address the 24-year record retention issue. 9. Consider modifications as needed to address any FERC directives that may result from the Commission's consideration of PRC-005-3. 10. Revise the implementation elements for PRC-005-2 and PRC-005-3 as needed to assure consistent and systematic implementation. 11. Modify the informative Supplementary Reference Document (provided as a technical reference for PRC-005-3) to provide the rationale for the maintenance activities and intervals within the modified standard, as well as to provide application guidance to industry.

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

Reliability Functions		
The Standard will Apply to the Following Functions (Check each one that applies.)		
☐	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 (Check all 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 security 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?		Enter (yes/no)
	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

Reliability and Market Interface Principles	
Does the proposed Standard comply with all of the following Market Interface Principles?	Enter (yes/no)
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

Related SARs	
SAR ID	Explanation

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