

# Compliance Application Notice — 0043

PRC-005 Protection System Maintenance and Testing Evidence

Posted December 30, 2011

## Primary Interest Groups

Compliance Enforcement Authority (CEA)<sup>1</sup>

NERC

Regional Entity (RE)

Transmission Owner (TO)

Generator Owner (GO)

Distribution Provider (DP) that owns a transmission Protection System

## Issue: What types of evidence do CEAs assess in regard to Protection System maintenance and testing to demonstrate compliance?

This CAN clarifies what types of evidence a CEA is to assess in the following areas of compliance:

- Commissioning tests;
- Historical evidence;
- The basis of time allowances for maintenance and testing intervals;
- Providing evidence of continuous monitoring devices; and
- The degree of specificity needed for electronic evidence files.

## Background

CAN-0043 originated from the NERC Key Reliability Standards Spot Check (KRSSC)<sup>2</sup> program, which was designed to improve consistency of compliance monitoring across the Electric Reliability Organization (ERO). The program captured a snapshot of the procedures and processes that were being used by the eight Regional Entities to audit registered entities for compliance with PRC-005. CAN-0043 provides guidance to CEAs in assessing compliance for PRC-005 based on the identified inconsistencies from the KRSSC Final Report.

## Compliance Application

PRC-005 provides, in pertinent part:

***R1.*** Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have a Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:

***R1.1.*** Maintenance and testing intervals and their basis.

<sup>1</sup> Compliance Enforcement Authorities include ERO auditors, investigators, enforcement personnel or any person authorized to assess issues of concern, potential non-compliance, and possible, alleged or confirmed violations of NERC Reliability Standard requirements.

<sup>2</sup> KRSSC Final Report can be found at: <http://www.nerc.com/files/PRC-005-1%20KRSSC%20Final%20Report-%2009142011.pdf>.

**R1.2. Summary of maintenance and testing procedures.**

**R2. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:**

**R2.1. Evidence Protection System devices were maintained and tested within the defined intervals.**

**R2.2. Date each Protection System device was last tested/maintained.**

Commissioning Tests

CEAs are to use commissioning test records to verify compliance of new equipment with PRC-005 R2. These records establish evidence that Protection Systems were maintained and tested (R2.1), as well as the date each Protection System device was last tested and maintained (R2.2).

Historical Evidence as Basis for Testing and Maintenance Intervals

When an entity states that historical evidence was the basis for the intervals of its Protection System maintenance and testing program, the CEA is to verify that the registered entity has clear documentation of its prior experience with the equipment for determining the interval. The justification for the historical evidence should include the length of time reviewed in its prior experience and the data used to support the basis of the interval. The rationale that the registered entity may use for historical evidence includes, but is not limited to, operational experience with the equipment and failure rates.

Basis of Time Allowances for Intervals

CEAs are to verify the basis for determining maintenance and testing intervals, including any flexibility or time allowance used to extend intervals for unexpected events. Unexpected events may include scheduling conflicts, system reliability issues, extreme weather events, or other unforeseen occurrences. However, the time allowance extends the registered entity's interval, and the CEA is to verify that the entity's basis for its interval includes a time allowance. An acceptable example of a basis covering an extended time allowance may be the failure rate of the device.

Evidence When Continuous Monitoring is Specified by the Entity's Maintenance and Testing Program

When an entity's maintenance and testing program includes intervals based on having devices that are continuously monitored, CEAs are to verify evidence that shows the devices are continuously monitored, consistent with the entity's program and associated communications systems are operational. Continuously monitored devices must provide notification, such as an alarm, when the monitored Protection System devices or associated communications are not functioning correctly.

CEAs are to obtain evidence that failure or malfunction of a continuously monitored Protection System device produces an alarm and that corrective action will be taken by appropriate parties upon the alarm sounding or being issued. Examples of evidence of alarming include items include, but are not limited to: screen shots of the Supervisory Control and Data Acquisition (SCADA) system depicting Protection System device status, evidence of associated communications, and documentation of corrective action procedures to be taken when an alarm is received.

### Electronic Evidence Files

When registered entities use electronic files for recording testing and maintenance dates, CEAs are to verify evidence that the Protection System devices were tested and maintained within the defined intervals, as well as evidence that the actual tests were performed. CEAs are to verify that electronic evidence files show that some maintenance or testing activity took place and should look for relay test results or field records with annotations such as “as-found” readings or pass/fail results; if failed, then adjustments made. The maintenance record for adjustments may be requested.

### **Effective Period for CAN**

This CAN is effective upon posting as final on the NERC Web site, and is to be used by CEAs to assess compliance from the posting date forward, regardless of the start date of any non-compliance or Possible Violation. It supersedes all prior communications and will remain in effect until such time that a future version of a FERC or other applicable government authority approved standard or interpretation becomes effective and addresses the specific issue contained in this CAN.

For any enforcement action in process and for audits that have been initiated,<sup>3</sup> a CEA will apply the appropriate discretion, including consideration of the specific facts and circumstances of the non-compliance, in determining whether to assess compliance pursuant to this CAN.

### **Evidence of Compliance**

CEAs are to verify evidence of Protection System maintenance and testing programs based on the guidelines listed above.

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*This document is designed to convey compliance monitoring instruction to achieve a measure of consistency among auditors and Compliance Enforcement Authorities. It is not intended to establish new requirements under NERC's Reliability Standards or to modify the requirements in any existing NERC Reliability Standard. Compliance will continue to be assessed based on language in the currently enforceable NERC Reliability Standards. This document is not intended to define the exclusive method an entity must use to comply with a particular standard or requirement, or foreclose a registered entity's demonstration by alternative means that it has complied with the*

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<sup>3</sup> “Initiated” means that a registered entity has received notification of the upcoming audit.

*language and intent of the standard or requirement, taking into account the facts and circumstances of a particular registered entity. Implementation of information in this document is not a substitute for compliance with requirements in NERC's Reliability Standards.*