AESO Reliability Standards Monthly Report

August 2009

PRC-005-1 - Transmission and Generation Protection System Maintenance and Testing

Purpose:
Request for Interpretation.

Standard:
This standard is meant to ensure all transmission and generation Protection Systems affecting the reliability of the Bulk Electric System (BES) are maintained and tested. It has been in effect since May 1, 2006.

Request and Interpretation:
A request for an interpretation of PRC-005-1 Requirement R1 has been submitted by the Compliance Monitoring Processes Working Group (CMPWG).

Question #1 - Does R1 require a maintenance and testing program for the battery chargers for the "station batteries" that are considered part of the Protection System?

NERC Interpretation - While battery chargers are vital for ensuring "station batteries" are available to support Protection System functions, they are not identified within the definition of "Protection Systems." Therefore, PRC-005-1 does not currently require maintenance and testing of battery chargers.

Question #2 - Does R1 require maintenance and testing program for auxiliary relays and sensing devices? If so, what types of auxiliary relays and sensing devices? (i.e., transformer sudden pressure relays).

NERC Interpretation - The existing definition of "Protection System" does not include auxiliary relays; therefore, maintenance and testing of such devices is not explicitly required. Maintenance and testing of such devices is addressed to the degree that an entity's maintenance and testing program for DC control circuits involves maintenance and testing of imbedded auxiliary relays. Maintenance and testing of devices that respond to quantities other than electrical quantities (for example, sudden pressure relays) are not included within Requirement R1.

Question #3 - Does R1 require maintenance and testing of transmission line re-closing relays?

NERC Interpretation – No. "Protective Relays" refer to devices that detect and take action for abnormal conditions. Automatic restoration of transmission lines is not a "protective" function.

Question #4 - Does R1 require a maintenance and testing program for the DC circuitry that is just the circuitry with relays and devices that control actions on breakers, etc., or does R1 require a program for the entire circuit from the battery charger to the relays to circuit breakers and all associated wiring?

NERC Interpretation – PRC-005-1 requires that entities 1) address DC control circuitry within their program, 2) have a basis for the way they address this item, and 3) execute the program. PRC-005-1 does not establish specific additional requirements relative to the scope and/or methods included within the program.

Question #5 - For R1, what are examples of "associated communications systems" that are part of "Protection Systems" that require a maintenance and testing program?

NERC Interpretation – "Associated communication systems" refer to communication systems used to convey essential Protection System tripping logic, sometimes referred to as pilot relaying or teleprotection. Examples include the following:

•communications equipment involved in power-line-carrier relaying

• communications equipment involved in various types of permissive protection system applications
• direct transfer-trip systems
• digital communication systems (which would include the protection system communications functions of standard IEC 61850 as well as various proprietary systems).

Applicability:
Transmission Operators, Generator Operators, Distribution Providers that own a transmission Protection System.

Current Status:
The interpretation was posted for recirculation ballot until August 6, 2009. The AESO maintained its "Negative" vote from the original ballot as we felt the NERC drafting team did not respond to our comments. The interpretation was approved by the NERC ballot body.

NERC Link:
Transmission and Generation Protection System Maintenance and Testing