Information Document
PRC-005 Supplemental Information
ID #2018-009

Information Documents are not authoritative. Information Documents are for information purposes only and are intended to provide guidance. In the event of any discrepancy between an Information Document and any Authoritative Document(s) in effect, the Authoritative Document(s) governs.

1 Purpose

This Information Document relates to the following Authoritative Document[1]:

- PRC-005-AB1-6 *Protection* System, *Automatic Reclosing, and Sudden Pressure Relaying Maintenance and Testing* ("PRC-005").

The purpose of this Information Document is to provide information on PRC-005 and the AESO's endorsement of the North American Electric Reliability Corporation's (NERC) *Supplementary Reference and FAQ PRC-005-6 Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance and Testing* ("*Supplementary Reference and FAQ document*").

2 Applicability

The entities identified in subsection 2.1 of the Applicability section are required to apply the requirements of PRC-005 to the devices listed in subsection 2.2 of the Applicability section. The entity is responsible for determining, for its facilities, what actions are necessary to meet the requirements of PRC-005.

Note that PRC-005 will become effective in accordance with the timelines set out in the implementation plan in Appendix 5 of PRC-005.

3 NERC Supplementary Reference and FAQ document for PRC-005-6

The AESO generally agrees with the information contained within the *Supplementary Reference and FAQ document* and recognizes that it may be a useful reference for market participants as they implement PRC-005. In addition, the AESO may use the *Supplementary Reference and FAQ document* as reference material in assessing compliance with PRC-005.

4 Component Type

NERC's definition of "Component Type" from the *Supplementary Reference and FAQ document* refers to the "specific elements" of a protection system, automatic reclosing, and sudden pressure relaying. For convenience and to assist market participants in applying the information in the maintenance activities and intervals tables in Appendix 1, the component types for each device are listed below:

Device	Component Type
Protection System	• protective relay • communication system • voltage and current sensing devices providing inputs to protective relays • protection system station dc supply • control circuitry associated with protective functions

[1] "Authoritative Documents" is the general name given by the AESO to categories of documents made by the AESO under the authority of the *Electric Utilities Act* and regulations, and that contain binding legal requirements for either market participants or the AESO, or both. AESO Authoritative Documents include: the ISO rules, the Alberta reliability standards, and the ISO tariff.

Automatic Reclosing	• reclosing relay • supervisory relay(s) or function(s) – relay(s) or function(s) that perform voltage and/or sync check functions that enable or disable operation of the reclosing relay • voltage sensing devices associated with the supervisory relay(s) or function(s) • control circuitry associated with the reclosing relay or supervisory relay(s) or function(s)
Sudden Pressure Relay	• fault pressure relay • control circuitry associated with a fault pressure relay

The AESO notes that PRC-005 splits Table 5 of Appendix 1 of the NERC standard into two tables, one for each component type.

5 Clarification of Other Terms Used in PRC-005

The AESO encourages market participants to consult NERC's definitions of the following terms in the *Supplementary Reference and FAQ document* when implementing PRC-005:

- Protection system maintainence program
  - Verify
  - Monitor
  - Test
  - Inspect
  - Calibrate
- Component
- Countable Event
- Automatic Reclosing
- Sudden Pressure Relaying

6 Cross Reference Table

The following table cross-references the content of the applicability section in the Alberta reliability standard with the corresponding section of the NERC standard to assist with finding related information in the *NERC Supplementary Reference and FAQ document* for PRC-005-6.

PRC-005-AB1-6	NERC PRC-005-6
2.1(a) the legal owner of a transmission facility;	3.1.1 Transmission Owner 3.1.3 Distribution Provider
2.1(b) the legal owner of a generating unit; 2.1(c) the legal owner of an aggregated generating facility.	3.1.2 Generator Owner
2.2(a) protection systems and sudden pressure relays that are installed for the purpose of detecting faults on system elements as identified in section 2.1;	4.2.1 Protection Systems and Sudden Pressure Relaying that are installed for the purpose of detecting Faults on BES Elements (lines, buses, transformers, etc.)

PRC-005-AB1-6	NERC PRC-005-6
2.2(b) protection systems used for the ISO's underfrequency load shedding program;	4.2.2 Protection Systems used for underfrequency load-shedding systems installed per ERO underfrequency load-shedding requirements.
2.2(c) protection systems used for undervoltage load shed systems installed to prevent system voltage collapse or voltage instability for the reliability of the interconnected electric system;	4.2.3 Protection Systems used for undervoltage load-shedding systems installed to prevent system voltage collapse or voltage instability for BES reliability.
2.2(d) protection systems installed as a remedial action scheme for the reliability of the interconnected electric system	4.2.4 Protection Systems installed as a Remedial Action Scheme (RAS) for BES reliability.
2.2(e) protection systems and sudden pressure relaying for generating units, including: (i) protection systems that act to trip the generating unit either directly or via lockout or auxiliary tripping relays; (ii) protection systems and sudden pressure relaying for generating unit step-up transformers; and (iii) protection systems and sudden pressure relaying for station service or excitation transformers connected to the generating unit bus, that act to trip the generating unit either directly or via lockout or tripping auxiliary relays;	4.2.5 Protection Systems and Sudden Pressure Relaying for generator Facilities that are part of the BES, except for generators identified through Inclusion I4 of the BES definition, including: 4.2.5.1 Protection Systems that act to trip the generator either directly or via lockout or auxiliary tripping relays. 4.2.5.2 Protection Systems and Sudden Pressure Relaying for generator step-up transformers for generators that are part of the BES. 4.2.5.3 Protection Systems and Sudden Pressure Relaying for station service or excitation transformers connected to the generator bus of generators which are part of the BES, that act to trip the generator either directly or via lockout or tripping auxiliary relays.
2.2(f) protection systems and sudden pressure relaying for aggregated generating facilities from and including the collector bus to a common point of connection at 100kV or above;	4.2.6 Protection Systems and Sudden Pressure Relaying for the following BES generator Facilities for dispersed power producing resources identified through Inclusion I4 of the BES definition: 4.2.6.1 Protection Systems and Sudden Pressure Relaying for Facilities used in aggregating dispersed BES generation from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100kV or above.

PRC-005-AB1-6	NERC PRC-005-6
2.2(g) automatic reclosing, including: (i) automatic reclosing applied on all transmission lines connected to a bus operated at a voltage level of 100 kV or higher located at generating plant substations where the combined maximum authorized real power is greater than 500 MW; (ii) automatic reclosing applied on all transmission line terminals operated at a voltage level of 100 kV or higher at substations one bus away from generating plants specified in Section 2.2 (g)(i) when the substation is less than 10 circuit-miles from the generating plant substation; and (iii) automatic reclosing applied as an integral part of a remedial action scheme specified in subsection (d).	4.2.7 Automatic Reclosing , including: 4.2.7.1 Automatic Reclosing applied on the terminals of Elements connected to the BES bus located at generating plant substations where the total installed gross generating plant capacity is greater than the gross capacity of the largest BES generating unit within the Balancing Authority Area or, if a member of a Reserve Sharing Group, the largest generating unit within the Reserve Sharing Group. 4.2.7.2 Automatic Reclosing applied on the terminals of all BES Elements at substations one bus away from generating plants specified in Section 4.2.7.1 when the substation is less than 10 circuit-miles from the generating plant substation. 4.2.7.3. Automatic Reclosing applied as an integral part of an RAS specified in Section 4.2.4.

Revision History

Posting Date	Description of Changes
2019-07-05	Updated version number to match amended PRC-005
2019-04-10	Initial publication