

Standard PRC-027-1 – Coordination of Protection System Performance During Faults

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. **Title:** Coordination of Protection System Performance During Faults
2. **Number:** PRC-027-1
3. **Purpose:** To maintain the coordination of Protection Systems installed for the purpose of detecting Faults on BES Elements and isolating those faulted Elements, such that the Protection System components operate in the intended sequence during Faults.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 Transmission Owner
 - 4.1.2 Generator Owner
 - 4.1.3 Distribution Provider (that owns Protection Systems identified in the Facilities section 4.2 below)
 - 4.2. **Facilities:**
 - 4.2.1 Protection Systems installed for the purpose of detecting Faults on BES Elements, and isolating those faulted Elements
5. **Effective Date:** See Implementation Plan
6. **Definitions:**

Interconnecting Element

A Bulk Electric System (BES) Element that electrically joins Facilities:

 - a) owned by separate Registered Entities, or
 - b) assigned to different functional entities (Transmission Owner, Generator Owner, or Distribution Provider) of the same Registered Entity

B. Requirements and Measures

Rationale for Requirement R1:

- R1.** Each Transmission Owner, Generator Owner, and Distribution Provider shall implement a process to coordinate its BES Protection Systems to operate in the

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intended sequence during Faults. The process shall include, at a minimum: *[Violation Risk Factor: TBD] [Time Horizon: TBD]*

- 1.1.** A method to review and update data required to develop Protection System settings.
 - 1.2.** A quality assurance or review process of the Protection System settings.
 - 1.3.** A set of minimum triggers to prompt a review of existing Protection System settings. Specified triggers may be time-based, condition-based, or a combination of the two.
 - 1.4.** A procedure to communicate the Protection System settings with Transmission Owners, Generator Owners, and Distribution Providers associated with Interconnecting Elements and seek concurrence that there are no identified coordination issues.
 - 1.5.** A procedure to verify any identified coordination issue(s) associated with proposed Protection System settings are addressed prior to implementation.
- M1.** Acceptable evidence includes, but is not limited to, electronic or physical dated records to demonstrate that the Responsible Entity has implemented its process to coordinate its Protection Systems, in accordance with Requirement R1 and its Parts.

Rationale for Requirement R2:

- R2.** Each Transmission Owner, Generator Owner, and Distribution Provider shall, within 60 calendar months after the effective date of this standard, have documentation that the Protection Systems for the following Elements are coordinated to operate in the intended sequence for clearing faults. *[Violation Risk Factor: TBD] [Time Horizon: TBD]*
- 2.1.** Interconnecting Elements associated with Transmission operated at 200 kV or above.
 - 2.2.** Interconnecting Elements associated with BES Generating resource(s) with gross plant/facility aggregate nameplate rating greater than 75 MVA.
 - 2.3.** Any monitored Facility of an Interconnection Reliability Operating Limit (IROL).
- M2.** Acceptable evidence includes, but is not limited to, electronic or physical dated records to demonstrate that the Responsible Entity coordinated the Protection Systems for the Elements identified in Requirement R2 within 60 calendar months of the effective date of this standard.