NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan
Project 2010-13.2 - Relay Loadability: Generator

Requested Approvals

- PRC-025-1 – Generator Relay Loadability

Requested Retirements

- None.

Prerequisite Approvals

- None.

Parallel Approvals

- PRC-023-3 – Transmission Relay Loadability*

*A supplemental SAR was approved by the Standards Committee at the January 16-17, 2013 meeting to authorize the drafting team to make corresponding changes to PRC-023-2 in order to establish a bright line between the applicability of load-responsive protective relays in the transmission and generator relay loadability standards.

Revisions to Defined Terms in the NERC Glossary

- None

Background

The implementation plan addresses concerns about the effort required to become compliant with the standard. The drafting team considered a number of issues that a Generator Owner might encounter in its efforts to ensure its load-responsive protective relay settings are applied in accordance the standard. The period to become compliant is based on two conditions. One time frame is provided if the Generator Owner determines that its existing load-responsive protective relays are capable of achieving the standard while maintaining reliable fault protection. A second and extended time frame is provided if the Generator Owner determines that its existing load-responsive protective relays require replacement. The drafting team recognizes that it may be necessary to replace a legacy load-responsive protective relay with a modern advanced-technology relay that can be set using functions such as load encroachment.

General Considerations

The Implementation Plan period reflects consideration of the following:

~~1. The Generator Owner will likely find it necessary to adjust the existing load responsive protective relay settings on its generation unit(s) to comply with this standard, and it will be necessary for the plant to be off-line in order to make these adjustments.~~

~~2. The Generator Owner may find it necessary to replace portions of their existing protective relaying in order to comply with this standard. In such cases, the Generator Owner may need to budget the necessary work, engineer the necessary adjustments, coordinate with other entities, and procure certain materials. Further, the Generator Owner may require an outage of significant duration in order to apply settings, perform necessary testing, and replace any necessary components.~~

1. It is not beneficial to reliability for a Generator Owner to remove a generation unit or plant from service solely to achieve compliance with this standard.

~~3.~~1. The ~~Additionally, the~~ implementation plan recognizes that the time between scheduled outages depends on the nature of the generation unit or plant and may be as long as 24 months~~. Due to the time~~ between scheduled outages~~, the implementation plan also considers the time required to budget and procure the necessary material; therefore, provides a 48-month period for becoming 100% compliant with the standard~~.

~~4.~~ The ~~For a Generator Owner with a sizable generation fleet, the~~ implementation plan assumes that Generator Owners will stagger~~provides time for staggered~~ outages between generation units or plants~~.~~

~~General Considerations~~

~~To be developed in draft 2~~ based upon fleet size, operating history, and forecasted outages~~on industry comment~~.

2. The Generator Owner will need to evaluate load-responsive protective relays applied on its Facilities, perform the applicable calculations required by the standard, and determine whether existing relays are capable of meeting the performance of standard while achieving reliable fault protection.
3. It is necessary for the generation unit or plant to be off-line in order to make adjustments.
4. The outage duration in order to replace any necessary components, to apply settings, and perform necessary testing may be significant.
5. For those load-responsive protective relays that do not require replacement, the Generator Owner will need time to complete the evaluation (#4) required by the standard and schedule the work while the generation unit or plant is off-line.

6. For those load-responsive protective relays that require replacement, the Generator Owner will need time to complete the evaluation (#4) required by the standard, as well as, time to coordinate protection system changes with other entities, procure materials, and schedule the work while the generation unit or plant is off-line.

Applicable Entities

- Generator Owner*

*See the proposed standard for detailed applicability for functional entities and Facilities.

Effective Date

New Standard

PRC-025-1	First day of the first calendar quarter beyond the date that this standard is approved by applicable regulatory authorities, or in those jurisdictions where regulatory approval is not required, the standard becomes effective on the first day of the first calendar quarter beyond the date this standard is approved by the NERC Board of Trustees, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

Standards for Retirement

None.~~N/A~~

Implementation Plan for Definitions

No definitions are proposed as a part of this standard.

Implementation Plan for PRC-025-1, Requirement R1

Load -responsive protective relays subject to the standard

Each~~The~~ Generator Owner that owns load-responsive protective relays applicable to this standard shall be 100% compliant for the following:~~48 months beyond the effective date of this standard.~~

- For each load-responsive protective relay, where determined by the Generator Owner that replacement is not necessary, 48 months beyond the effective date of this standard.
- For each load-responsive protective relay, where determined by the Generator Owner that replacement is necessary, 72 months beyond the effective date of this standard.

Load -responsive protective relays which become applicable to the standard

The Generator Owner owningthat owns load -responsive protective relays that become applicable to this standard, (not because of the actions of the Generator Owner including, but not limited to changes in NERC Registration Criteria, Bulk Electric System (BES) definition, or any other non-Generator Owner action,),, shall be 100% compliant on the first day of the first calendar quarter that is 48 months beyond the date such change is effected by an applicable regulatory authority, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

Revisions or Retirements to Already Approved Standards

The following table identifies the sections of the approved standard that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

Already Approved Standard	Proposed Replacement Requirement(s)
New Standard – Not Applicable	**PRC-025-1** **R1.** Each Generator Owner shall apply~~install~~ settings that are in accordance with *PRC-025-1 – Attachment 1: Relay Settings*, on each load-responsive protective relay while maintaining reliable fault protection. *[Violation Risk Factor: High] [Time Horizon: Long-Term Planning]*
Notes: This requirement meets the directive in FERC Order No. 733, paragraph 106 and supporting paragraphs 104, 105, and 108. A full discussion of how Requirement R1 is responsive to the FERC directives may be found in the Consideration of Issues and Directives document associated with Project 2012-13.2 – Relay Loadability: Generator~~102~~.	