Unofficial Comment Form

Project 2010-13.2 Generator Relay Loadability  
(PRC-025-1)

Please **DO NOT** use this form for submitting comments. Please use the [electronic form](https://www.nerc.net/nercsurvey/Survey.aspx?s=8b70ff05c769429c9df36fc753f3fcf8) to submit comments on the Standard. Comments must be submitted by 8 p.m. ET **Monday, March 11, 2013**. If you have questions please contact Scott Barfield-McGinnis at [Scott.Barfield@nerc.net](mailto:Scott.Barfield@nerc.net) or by telephone at (404) 446-9689.

<http://www.nerc.com/filez/standards/Project_2010-13.2_Summary_Table.html>

# Background Information

This posting is soliciting formal comments in a 45-day formal comment period.

The Standard Authorization Request (SAR) for this project was initiated on August 5, 2010 and approved by the Standards Committee (SC) on August 12, 2010. It established the scope of work for Project 2010-13.2 for what is the second phase of Order 733, Transmission Relay Loadability Reliability Standard.[[1]](#footnote-1) Phase I resulted in the NERC Reliability Standard PRC-023-1 and Phase II concerning this project specifically addresses protecting the generator, generator step-up (GSU) transformer, and unit auxiliary transformers (UAT) in the proposed new standard, PRC-025-1. The SC moved this project into active development on March 8, 2012.

During analysis of many of the major disturbances in the last 25 years on the North American interconnected power system, generators have been found to have tripped for conditions that did not apparently pose a direct risk to those generators and associated equipment within the time period where the tripping occurred. This unnecessary tripping has often been evaluated to have extended the scope and/or duration of that disturbance. This was noted, in detail, to be a serious issue in the August 2003 “blackout” in the northeastern North American continent.

During the recoverable phase of a disturbance, the disturbance may exhibit a “voltage disturbance” behavior pattern, where system voltage is widely depressed. In order to support the system during this phase of a disturbance, this standard establishes criteria for setting load-responsive relays such that individual generators may provide Reactive Power within their dynamic capability during transient time periods to help the system recover from that voltage disturbance. The premature or unnecessary tripping of generators resulting in the removal of dynamic Reactive Power exacerbates the severity of the voltage disturbance, and as a result changes the character of the system disturbance. In addition, the loss of Real Power could initiate or exacerbate a frequency disturbance.

The Standard Drafting Team (SDT) has developed draft two of the standard to provide requirements that address these concerns, and is presenting this draft to industry for a formal comment period to get industry comments to aid in further development.

# Summary of changes

The generator relay loadability SDT has revised the draft PRC-025-1 – Generator Relay Loadability based on stakeholder comments received during the first formal 30-day posting of the standard. The following narrative is a summary of the significant improvements made to the standard.

* Standard
  + The Purpose statement was revised to better reflect the intent of the standard based on industry comment
  + The Applicability section was revised to clarify the Facilities
    - Clarifying change in section 3.1.1 to eliminate potential overlap with the standard, PRC-023-2.[[2]](#footnote-2)
    - Section 3.2.4 Generator interconnection Facility(ies) was added to the Applicability to comport with proposed changes to PRC-023-2
  + Requirement R1 was revised to replace the word “install” with “apply” to be more consistent with industry terminology and usage
  + Measure M1 was revised to comport with the revision to Requirement R1
  + Typographical correction in the compliance monitoring section
  + Added Violation Severity Levels
  + Attachment 1: Relay Setting (significant changes)
    - Revised introductory text to clarify “field-forcing” and calculations
    - Added load-responsive protective relay exclusions
    - Restructured Table 1: Relay Loadability Evaluation Criteria
      * Organized by Application and relay type
      * Formatted using colors for clarity
      * Improved notation between option, where applicable
      * Added phase directional time overcurrent relay (67) – directional toward the Transmission system relay type
* Guidelines and Technical Basis
  + Separated into its own document for manageability
  + Reorganized to comport with Table 1 restructuring and additions
  + Individual sections for each main option provided for easier location of information
  + Added example calculations covering all options
* Implementation Plan
  + The implementation plan was revised to provide additional information about the factors considered
  + Revised the implementation plan to provide industry a two-phase approach to implementing the standard

**You do not have to answer all questions. Enter All Comments in Simple Text Format.**

Please note that the official comment form ***does not*** retain formatting (even if it appears to transfer formatting when you copy from the unofficial Word version of the form into the official electronic comment form). If you enter extra carriage returns, bullets, automated numbering, symbols, bolding, italics, or any other formatting, that formatting will not be retained when you submit your comments.

* Separate discrete comments by idea, e.g., preface with (1), (2), etc.
* Use brackets [] to call attention to suggested inserted or deleted text.
* Insert a “check” mark in the appropriate boxes by double-clicking the gray areas.
* Do not use formatting such as extra carriage returns, bullets, automated numbering, bolding, or italics.
* Please do not repeat other entity’s comments. Select the appropriate item to support another entity’s comments. An opportunity to enter additional or exception comments will be available.

**Questions**

1. In the Applicability, section 3.2.4, “Generator interconnection Facility(ies)” was added to address potential overlap with the approved PRC-023-2. Also, the SDT has posted a draft SAR and redline proposed PRC-023-3 for consideration. Do the changes to PRC-023-2 and the proposed PRC-025-1 provide a bright line between the two standards? If not, provide specific suggestions to improve or clarify the performance between the standards.

Yes

No

Comments:

1. Does the restructured and reformatted PRC-025-1, Attachment 1: Relay Settings, **Table 1: Relay Loadability Evaluation Criteria** clearly identify the criteria for setting load-responsive protective relays for each Option 1 through 19? If not, provide specific detail that would improve the clarity of Table 1.

Yes

No

Comments:

1. Does PRC-025-1, **Guidelines and Technical Basis** provide a clear understanding of the various criteria, including the options (e.g., 1a, 1b, 1c, 2a, etc.) for setting load-responsive protective relays? If not, provide specific detail that would improve the Guidelines and Technical Basis.

Yes

No

Comments:

1. The drafting team considered industry feedback and provided a listing of “general considerations” that affect the period which industry should need to become compliant. Do you agree with the proposed **Implementation Plan** of:
   1. 48-months to apply load-responsive protective relay settings , whererelay **replacement is not required,** and
   2. 72-months to apply load-responsive protective relay settings, where relay **replacement is required?**

If not, provide an alternative implementation plan with specific rationale for such an alternative period.

Yes

No

Comments:

1. Do you agree that the provided Violation Risk Factor and Violation Severity Level Justifications are in accordance with FERC and NERC guidelines for constructing VRFs and VSLs? If not, provide specific rationale why the VRF or VSL does not meet the guidelines.

Yes

No

Comments:

1. Do you have any other comments? If so, please provide suggested changes and rationale.

Yes

No

Comments:

1. Transmission Relay Loadability Reliability Standard, Order No. 733, 130 FERC ¶ 61,221 (2010), Paragraphs 104, 105, 106, and 108. [↑](#footnote-ref-1)
2. The drafting team has posted a supplemental Standard Authorization Request to make conforming revisions to PRC-023-2 – Transmission Relay Loadability to eliminate potential overlap between the proposed PRC-025-1 standard. [↑](#footnote-ref-2)