

DRAFT Reliability Standard Audit Worksheet¹

PRC-025-~~4~~2 – Generator Relay Loadability

This section to be completed by the Compliance Enforcement Authority.

Audit ID: Audit ID if available; or REG-NCRnnnnn-YYYYMMDD
Registered Entity: Registered name of entity being audited
NCR Number: NCRnnnnn
Compliance Enforcement Authority: Region or NERC performing audit
Compliance Assessment Date(s)²: Month DD, YYYY, to Month DD, YYYY
Compliance Monitoring Method: [On-site Audit | Off-site Audit | Spot Check]
Names of Auditors: Supplied by CEA

Applicability of Requirements

	BA	DP	GO	GOP	PA	RC	RP	RSG	TO	TOP	TP	TSP
R1		X ³	X ³						X ³			

¹ NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC’s and the Regional Entities’ assessment of a registered entity’s compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC’s Reliability Standards can be found on NERC’s website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

The NERC RSAW language contained within this document provides a non-exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity’s adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail.

² Compliance Assessment Date(s): The date(s) the actual compliance assessment (on-site audit, off-site spot check, etc.) occurs.

³ Entity that applies load-responsive protective relays at the terminals of the Elements listed in, Facilities.

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Facilities:

The following Elements associated with Bulk Electric System (BES) generating units and generating plants, including those generating units and generating plants identified as Blackstart Resources in the Transmission Operator's system restoration plan:

- Generating unit(s).
- Generator step-up (i.e., GSU) transformer(s).
- Unit auxiliary transformer(s) (UAT) that supply overall auxiliary power necessary to keep generating unit(s) online.⁴
- Elements that connect the GSU transformer(s) to the Transmission system that are used exclusively to export energy directly from a BES generating unit or generating plant. Elements may also supply generating plant loads.
- Elements utilized in the aggregation of dispersed power producing resources.

Legend:

Text with blue background:	Fixed text – do not edit
Text entry area with Green background:	Entity-supplied information
Text entry area with white background:	Auditor-supplied information

⁴ These transformers are variably referred to as station power, unit auxiliary transformer(s) (UAT), or station service transformer(s) used to provide overall auxiliary power to the generator station when the generator is running. Loss of these transformers will result in removing the generator from service. Refer to the PRC-025-~~4~~2 Guidelines and Technical Basis for more detailed information concerning unit auxiliary transformers.

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Findings

(This section to be completed by the Compliance Enforcement Authority)

Req.	Finding	Summary and Documentation	Functions Monitored
R1			

Req.	Areas of Concern

Req.	Recommendations

Req.	Positive Observations

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Subject Matter Experts

Identify the Subject Matter Expert(s) responsible for this Reliability Standard.

Registered Entity Response (Required; Insert additional rows if needed):

SME Name	Title	Organization	Requirement(s)

DRAFT

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R1 Supporting Evidence and Documentation

R1. Each Generator Owner, Transmission Owner, and Distribution Provider shall apply settings that are in accordance with PRC-025-~~12~~ – Attachment 1: Relay Settings, on each load-responsive protective relay while maintaining reliable fault protection.

M1. For each load-responsive protective relay, each Generator Owner, Transmission Owner, and Distribution Provider shall have evidence (e.g., summaries of calculations, spreadsheets, simulation reports, or setting sheets) that settings were applied in accordance with PRC-025-~~12~~ – Attachment 1: Relay Settings.

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested¹:

Provide the following evidence, or other evidence to demonstrate compliance.
A list of all load-responsive protective relays applied to the applicable Elements of PRC-025-1 .
Summaries of calculations, spreadsheets, simulation reports, settings sheets, or other evidence that settings for each load responsive relay were applied in accordance with PRC-025- 12 – Attachment 1: Relay Settings.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to PRC-025-~~12~~, R1

This section to be completed by the Compliance Enforcement Authority

(R1) For all, or a sample of, load-responsive protective relays, examine evidence and verify the following:

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	<ul style="list-style-type: none">• <u>If applicable, entity excluded any load-responsive protective relays appropriately based on PRC-025-2 – Attachment 1: Relay Settings, “Exclusion.”</u>
	<ul style="list-style-type: none">• Entity used appropriate elements from PRC-025-12 – Attachment 1: Relay Settings, and that the evidence identifies the criteria in Table 1 (e.g., application, relay type, option, bus voltage, Real Power, Reactive Power, and Pick up setting).
	<ul style="list-style-type: none">• Entity applied the settings consistent with the criteria according to PRC-025-12 – Attachment 1: Relay Settings

~~**Note to Auditor:** As addressed in the Implementation Plan, auditors will assess an entity’s compliance with PRC-025-1 starting on the 61st month after the effective date, or 10/1/2019. On 10/1/2019, an entity must be able to demonstrate compliance for applicable relays where it determined that replacement or removal was not necessary, including plants that came on line after 10/1/2014. Where the entity determined that replacement/removal of applicable relays was necessary, the entity must demonstrate compliance starting at the 85th month or 10/1/2021. On 10/1/2021, all applicable Facilities existing and new shall be compliant with the standard.~~

Note to Auditor: Ownership of load-responsive protective relays is determined at the terminals of the Elements listed in Facilities section. Determine applicability of relay protection elements as detailed in PRC-025-~~12~~ – Attachment 1, Relay Settings. The term, “while maintaining reliable fault protection” in Requirement R1 describes that the responsible entity is to comply with this standard while achieving their desired protection goals.

For load-responsive phase protection systems associated with transmission lines connected to generation stations remote to load, auditors should verify compliance with the Criteria listed in PRC-023-2 Requirement R1 until such time the entity has transitioned its compliance of these load-responsive phase protection systems to PRC-025-~~12~~. Note that relays meeting the 230% criteria (R1, Criterion 6) will meet the most rigorous setting “option” available under Attachment 1 of PRC-025-~~12~~; however, the entity must eventually demonstrate how it meets the Requirement of PRC-025-~~12~~ within the periods set forth within the ~~PRC-025-1 applicable~~ Implementation Plan. ~~(See first paragraph of Note to Auditor).~~

Auditor Notes:

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Additional Information:

Reliability Standard

The RSAW developer should provide the following information without hyperlinks. Update the information below as appropriate.

The full text of PRC-025-~~12~~ may be found on the NERC Web Site (www.nerc.com) under “Program Areas & Departments”, “Reliability Standards.”

In addition to the Reliability Standard, there is background information available on the NERC Web Site.

Capitalized terms in the Reliability Standard refer to terms in the NERC Glossary, which may be found on the NERC Web Site.

Sampling Methodology

Sampling is essential for auditing compliance with NERC Reliability Standards since it is not always possible or practical to test 100% of either the equipment, documentation, or both, associated with the full suite of enforceable standards. The Sampling Methodology Guidelines and Criteria (see NERC website), or sample guidelines, provided by the Electric Reliability Organization help to establish a minimum sample set for monitoring and enforcement uses in audits of NERC Reliability Standards.

Regulatory Language [\[Developer to ensure RSAW has been provided to NERC Legal for links to appropriate Regulatory Language – See example below\]](#)

~~E.g. FERC Order No. 742 paragraph 34~~ [Order No. 799, Generator Relay Loadability and Revised Transmission-Relay Loadability Standards, 148 FERC ¶ 61,042 \(2014\).](#)

~~P-2 In approving the Standard, FERC found “that the new standard on generation loadability, Reliability Standard PRC 025-1, will enhance reliability by imposing mandatory requirements governing generator relay loadability, thereby reducing the likelihood of premature or unnecessary tripping of generators during system disturbances.”~~

~~P-9 During the discussion of PRC 025-1, FERC stated “For most applications of each type of relay [e.g., synchronous or asynchronous generator, generator step up transformer, or unit auxiliary transformer], the proposed standard would give applicable entities the option of adopting relay settings that meet the stated criteria as determined through: (1) a relatively simple calculation; (2) a more complex calculation; or (3) a described simulation.”~~

~~: “Based on NERC’s.....~~

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E.g. [FERC Order No. 742 Paragraph 55, Commission Determination: "We affirm NERC's....."](#)

Revision History for RSAW

Version	Date	Reviewers	Revision Description
1	08/29/2014 07/25/2017	NERC Compliance, RSAWTF, CMFG, ECEMG Assurance, RSAW Task Force	New Document
2	5/13/2015	NERC Compliance, NERC Standards, RSAWTF, CMFG, ECEMG	Updated Note to Auditor to provide guidance regarding enforceability dates.

ⁱ Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. These items are not mandatory and other forms and types of evidence may be submitted at the entity's discretion.