

# Reliability Standard Audit Worksheet<sup>1</sup>

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

*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)<sup>2</sup>:** 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	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
R1		X <sup>3</sup>	X									X			
R2		X <sup>3</sup>	X									X			

<sup>1</sup> 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.

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

<sup>3</sup> Distribution Provider that owns Protection Systems installed for the purpose of detecting faults on BES elements and isolating those faulted elements.

**DRAFT** NERC Reliability Standard Audit Worksheet

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**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

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**DRAFT** NERC Reliability Standard Audit Worksheet

**Findings**

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

Req.	Finding	Summary and Documentation	Functions Monitored
R1			
R2			

Req.	Areas of Concern

Req.	Recommendations

Req.	Positive Observations

**DRAFT** NERC Reliability Standard Audit Worksheet

**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

**R1 Supporting Evidence and Documentation**

- R1.** Each Transmission Owner, Generator Owner, and Distribution Provider shall establish a process to develop settings for its BES Protection Systems to operate in the intended sequence during Faults. The process shall include:
- 1.1.** A method to review and update the information required to develop new or revised Protection System settings.
  - 1.2.** A review of Protection System settings affected by System changes.
  - 1.3.** A review of existing entity-designated<sup>4</sup> Protection System settings based on one of the following:
    - **Periodic Fault current studies:** A 15 percent or greater deviation in Fault current (either three-phase or phase-to-ground) from an established Fault current baseline for Protection Systems at the bus under study, and evaluated in a time interval not to exceed six calendar years, or
    - **Periodic review of Protection System settings:** A time interval, not to exceed six calendar years, or
    - A combination of the above.
  - 1.4.** A quality review of the Protection System settings prior to implementation.
  - 1.5.** For new or revised Protection System settings applied on BES Elements that electrically join Facilities owned by separate functional entities, (Transmission Owners, Generator Owners, and Distribution Providers), procedures to:
    - 1.5.1.** Communicate the proposed Protection System settings with the other functional entities.
    - 1.5.2.** Review proposed Protection System settings provided by other functional entities, and respond regarding the proposed settings. The response should identify any coordination issue(s) or affirm that no coordination issue(s) were identified.
    - 1.5.3.** Verify that any identified coordination issue(s) associated with proposed Protection System settings for the associated Elements 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 established a process to develop settings for its BES Protection Systems, in accordance with Requirement R1.

**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.

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<sup>4</sup> Based on the Protection System design and/or susceptibility to changes in Fault current, applicable entities (Transmission Owners, Generator Owners, and Distribution Providers) will designate what Protection Systems must be included in the review(s) to ensure these Protection Systems continue to operate in the intended sequence during Faults.

**DRAFT NERC Reliability Standard Audit Worksheet**

**Evidence Requested<sup>1</sup>:**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
The entity's documented process (that includes Part 1.1 through Part 1.5) to develop settings for its BES Protection Systems to operate in the intended sequence during Faults.

**Registered Entity Evidence (Required):**

<b>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.</b>					
<b>File Name</b>	<b>Document Title</b>	<b>Revision or Version</b>	<b>Document Date</b>	<b>Relevant Page(s) or Section(s)</b>	<b>Description of Applicability of Document</b>

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


**Compliance Assessment Approach Specific to PRC-027-1, R1**

***This section to be completed by the Compliance Enforcement Authority***

Review entity's documented process to develop settings for its BES Protection Systems to operate in the intended sequence during Faults, and verify that it includes:
(Part 1.1) A method to review and update the information required to develop new or revised Protection System settings.
(Part 1.2) A review of Protection System settings affected by System changes.
(Part 1.3) A review of existing entity-designated Protection System settings based on one of the following: <ul style="list-style-type: none"> <li>• <b>Periodic Fault current studies:</b> A 15 percent or greater deviation in Fault current (either three-phase or phase-to-ground) from an established Fault current baseline for Protection Systems at the bus under study, and evaluated in a time interval not to exceed six calendar years, or</li> <li>• <b>Periodic review of Protection System settings:</b> A time interval, not to exceed six calendar years, or</li> <li>• A combination of the above.</li> </ul>
(Part 1.4) A quality review of the Protection System settings prior to implementation.



**DRAFT NERC Reliability Standard Audit Worksheet**

**R2 Supporting Evidence and Documentation**

- R2.** Each Transmission Owner, Generator Owner, and Distribution Provider shall implement the process established in accordance with Requirement R1.
- M2.** Acceptable evidence includes, but is not limited to, electronic or physical dated records to demonstrate that the responsible entity implemented the process established in accordance with Requirement R1.

**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 Requested:**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
(Part 1.1) Evidence of entity reviewing and updating the information required to develop new or revised Protection System settings in accordance with its process. Such information required to coordinate Protection Systems may, but is not required to, include short-circuit databases, line and transformer impedances, station configurations, current and voltage transformer ratios, adjacent Protection System settings, and relay and control functional drawings.
(Part 1.2) Evidence of entity’s review of Protection System settings affected by System changes.
(Part 1.3) Evidence of a review of existing entity-designated Protection System settings based on either a Fault current based or a time-based methodology, or a combination of the two.
(Part 1.4) Evidence that quality reviews were performed prior to implementation of settings.
(Part 1.5) Evidence, such as, but not limited to, emails or other correspondence, of coordination of proposed Protection System settings applied on BES Elements that electrically join Facilities owned by separate functional entities prior to implementation of any proposed Protection System changes.

**Registered Entity Evidence (Required):**

<b>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.</b>					
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):**




**Additional Information:**

**Reliability Standard**

Insert embedded Standard file here and Implementation Plan (if required)

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

In addition to the Reliability Standard, there is an applicable Implementation Plan available on the NERC Web Site. (Remove this statement if embedded file included)

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 [If developer deems reference applicable]**

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: “Based on NERC’s.....”

E.g. FERC Order No. 742 Paragraph 55, Commission Determination: “We affirm NERC’s.....”

**Selected Glossary Terms [If developer deems applicable]**

The following Glossary terms are provided for convenience only. Please refer to the NERC web site for the current enforceable terms.

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**DRAFT** NERC Reliability Standard Audit Worksheet

**Revision History for RSAW**

Version	Date	Reviewers	Revision Description
1	04/15/2015	RSAW Working Group, Standards Drafting Team	New Document

<sup>i</sup> 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.

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