

**Compliance Questionnaire and**

**Reliability Standard Audit Worksheet**

**PRC-018-1 — Disturbance Monitoring Equipment Installation and Data Reporting**

**Registered Entity:** *(Must be completed by the Compliance Enforcement Authority)*

**NCR Number:** *(Must be completed by the Compliance Enforcement Authority)*

**Applicable Function(s):** TO, GO

**Auditors:**

**Disclaimer**

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 at <http://www.nerc.com/page.php?cid=2|20>. 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.

# Subject Matter Experts

Identify your company’s subject matter expert(s) responsible for this Reliability Standard. Include the person's title, organization and the requirement(s) for which they are responsible. Insert additional lines if necessary.

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
| **SME Name** | **Title** | **Organization** | **Requirement** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Reliability Standard Language

**PRC‑018‑1 ‑ Disturbance Monitoring Equipment Installation and Data Reporting**

**Purpose:**

Ensure that Disturbance Monitoring Equipment (DME) is installed and that Disturbance data is reported in accordance with regional requirements to facilitate analyses of events.

**Applicability:**

Generator Owner

Transmission Owner

**NERC BOT Approval Date: 8/2/2006**

**FERC Approval Date: 3/16/2007**

**Reliability Standard Enforcement Date in the United States: 6/18/2007**

**Requirements:**

**R1.** Each Transmission Owner and Generator Owner required to install DMEs by its Regional Reliability Organization (reliability standard PRC‑002 Requirements 1‑3) shall have DMEs installed that meet the following requirements:

**R1.1** Internal Clocks in DME devices shall be synchronized to within 2 milliseconds or less of Universal Coordinated Time scale (UTC)

**R1.2** Recorded data from each Disturbance shall be retrievable for ten calendar days.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R1 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to PRC‑018‑1 R1**

Is the entity required to install DME by its RRO (PRC‑002). If so;

Verify the entity installed DMEs that meet the following:

**\_\_\_** Internal Clocks in DME devices are synchronized to within 2 milliseconds or less of Universal Coordinated Time scale (UTC)

**\_\_\_** Recorded data from each Disturbance is retrievable for ten calendar days.

**Detailed Notes:**

**R2.** The Transmission Owner and Generator Owner shall each install DMEs in accordance with its Regional Reliability Organization’s installation requirements (standard PRC‑002 Requirements 1 through 3).

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R2 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to PRC‑018‑1 R2**

**\_\_\_** Verify the entity installed DMEs (if required) in accordance with its RRO installation requirements (PRC‑002 R1, R2, R3)

**Detailed Notes:**

**R3.** The Transmission Owner and Generator Owner shall each maintain, and report to its Regional Reliability Organization on request, the following data on the DMEs installed to meet that region’s installation requirements (reliability standard PRC‑002 Requirements1.1, 2.1 and 3.1):

**R3.1** Type of DME (sequence of event recorder, fault recorder, or dynamic disturbance recorder)

**R3.2** Make and model of equipment

**R3.3** Installation location

**R3.4** Operational status

**R3.5** Date last tested

**R3.6** Monitored elements, such as transmission circuit, bus section, etc

**R3.7** Monitored devices, such as circuit breaker, disconnect status, alarms, etc

**R3.8** Monitored electrical quantities, such as voltage, current, etc

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R3 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to PRC‑018‑1 R3**

**\_\_\_** Verify the entity maintains and reports the following data to the RRO:

**\_\_\_**Type of DME (sequence of event recorder, fault recorder, or dynamic disturbance recorder)

**\_\_\_** Make and model of equipment

**\_\_\_** Installation location

**\_\_\_** Operational status

**\_\_\_** Date last tested

**\_\_\_** Monitored elements, such as transmission circuit, bus section, etc.

**\_\_\_** Monitored devices, such as circuit breaker, disconnect status, alarms, etc

**\_\_\_** Monitored electrical quantities, such as voltage, current, etc

**Detailed Notes:**

**R4**. The Transmission Owner and Generator Owner shall each provide Disturbance data (recorded by DMEs) in accordance with its Regional Reliability Organization’s requirements (reliability standard PRC‑002 Requirement 4).

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R4 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to PRC‑018‑1 R4**

**\_\_\_** Verify the entity provided Disturbance Data (recorded by DMEs) in accordance with the RRO requirements

**Detailed Notes:**

**R5.** The Transmission Owner and Generator Owner shall each archive all data recorded by DMEs for Regional Reliability Organization identified events for at least three years.

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R5 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to PRC‑018‑1 R5**

**\_\_\_** Verify the entity archived all data recorded by DMES for RRO identified events for at least three

years.

**Detailed Notes:**

**R6.** Each Transmission Owner and Generator Owner that is required by its Regional Reliability Organization to have DMEs shall have a maintenance and testing program for those DMEs that includes:

**R6.1** Maintenance and testing intervals and their basis

**R6.2** Summary of maintenance and testing procedures

**Describe, in narrative form, how you meet compliance with this requirement:**

***(Registered Entity Response Required)***

# R6 Supporting Evidence and Documentation

**Response: *(Registered Entity Response Required)***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Provide the following:**  **Document Title and/or File Name, Page & Section, Date & Version** | | |
| **Title** | | **Date** | **Version** | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |
| *Audit Team: Additional Evidence Reviewed:* | |  |  | |
|  | |  |  | |
|  | |  |  | |
|  | |  |  | |

***This section must be completed by the Compliance Enforcement Authority.***

**Compliance Assessment Approach Specific to PRC‑018‑1 R6**

Is the entity required to have DMEs? If so;

Verify the entity has a maintenance and testing program for DMEs that includes:

**\_\_\_**Maintenance and testing intervals and their basis

**\_\_\_** Summary of maintenance and testing procedures

**Detailed Notes:**

# Supplemental Information

**Other –** The list of questions above is not all inclusive of evidence required to show compliance with the Reliability Standard. Provide additional information here**, as necessary that** demonstrates compliance with this Reliability Standard.

**Entity** **Response: *(Registered Entity Response)***

# Compliance Findings Summary (to be filled out by auditor)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Req.** | **C** | **PV** | **OEA** | **NA** | **Statement** |
| **1** |  |  |  |  |  |
| **2** |  |  |  |  |  |
| **3** |  |  |  |  |  |
| **4** |  |  |  |  |  |
| **5** |  |  |  |  |  |
| **6** |  |  |  |  |  |

**Excerpts from FERC Orders -- For Reference Purposes Only**

**Updated Through March 31, 2009**

**PRC-018-1**

P1418 "Protection and Control systems (PRC) on Bulk‑Power System elements are an

integral part of reliable grid operation. Protection systems are designed to detect

and isolate faulty elements on a system, thereby limiting the severity and spread

of system disturbances, and preventing possible damage to protected elements.

The function, settings and limitations of a protection system are critical in

establishing SOLs and IROLs. The PRC Reliability Standards apply to

transmission operators, transmission owners, generator operators, generator

owners, distribution providers and regional reliability organizations and cover a

wide range of topics related to the protection and control of power systems."

P1547 ” PRC‑018‑1 ensures that disturbance monitoring equipment is installed and

disturbance data is reported in accordance with comprehensive requirements…”

P1550 “…transmission owners and generator owners that own a disturbance

monitoring system must assure that disturbance data is reported in accordance

with PRC‑002‑1 to facilitate analyses of events. Applicable entities are expected

to comply with PRC‑018‑1, and the procedures specified in PRC‑002‑1 will be

provided pursuant to the data gathering provisions of the ERO’s Rules of

Procedure and the Commission’s ability to obtain information pursuant to

section 215 of the FPA and Part 39 of the Commission’s regulations.

Accordingly, we disagree with APPA, ISO/RTO Council and ISO‑NE and

conclude that the effective portions of PRC‑018‑1 are enforceable as of the

effective date of this rulemaking. As stated in the Common Issues section, a

reference to an unapproved Reliability Standard may be considered in an

enforcement action, but is not a reason to delay approving and enforcing this

Reliability Standard."

P1551 "Accordingly, for reasons stated in the NOPR and above, the Commission

approves Reliability Standard PRC‑018‑1 as mandatory and enforceable."

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Date** | **Reviewers** | **Revision Description** |
| 1 | December 2009 | RSAW Working Group | New Document. |
| 1 | December 2010 | QRSAW WG | Revised Findings Table, modified Supporting Evidence tables, and added Revision History. |
| 1 | January 2011 | Craig Struck | Reviewed for format consistency and content. |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |