

## Project 2007-17 Protection System Maintenance and Testing Mapping Document

Mapping Document Showing Translation of PRC-005-1b – Transmission and Generation Protection System Maintenance and Testing, PRC-008-0- Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program, PRC-011-0 – Undervoltage Load Shedding System Maintenance and Testing, and PRC-017-0 - Special Protection System Maintenance and Testing into PRC-005-2 – Protection System Maintenance.

Standard: PRC-005-1b - Transmission and Generation Protection System Maintenance and Testing		
Requirement in Approved Standard	Translation to New Standard or Other Action	Proposed Language in PRC-005-2 – Protection System Maintenance Or Comment
<p>R1. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall have Protection System maintenance and testing program for Protection Systems that affect the reliability of the BES. The program shall include:</p> <p>R1.1. Maintenance and testing intervals and their basis.</p> <p>R1.2. Summary of maintenance and testing procedures.</p>	<p>PRC-005-2, R1 and PRC-005-2, R2</p> <p>PRC-005-2, Tables 1-1 through 1-5, Table 2, and Table 3.</p>	<p>R1. Each Transmission Owner, Generator Owner, and Distribution Provider shall establish a Protection System Maintenance Program (PSMP) for its Protection Systems identified in Section 4.2.</p> <p>The PSMP shall:</p> <p>1.1. Identify which maintenance method (time-based, performance-based per PRC-005 Attachment A, or a combination) is used to address each Protection System Component Type. All batteries associated with the station dc supply Component Type of a Protection System shall be included in a time-based program as described in Table 1-4 and Table 3.</p> <p>1.2. Include the applicable monitored Component attributes applied to each Protection System Component Type consistent with the maintenance intervals specified in Tables 1-1 through 1-5, Table 2, and Table 3 where monitoring is used to extend the maintenance intervals beyond</p>

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<b>Requirement in Approved Standard</b>	<b>Translation to New Standard or Other Action</b>	<b>Proposed Language in PRC-005-2 – Protection System Maintenance Or Comment</b>
		<p>those specified for unmonitored Protection System Components.</p> <p>R2. Each Transmission Owner, Generator Owner, and Distribution Provider that uses performance-based maintenance intervals in its PSMP shall follow the procedure established in PRC-005 Attachment A to establish and maintain its performance-based intervals.</p> <p>See PRC-005-2 Tables 1-1 through 1-5, Table 2, and Table 3. The Tables establish prescribed maximum intervals and minimum maintenance activities, and, as such, the entity no longer needs to establish the basis for their intervals.</p>
<p>R2. Each Transmission Owner and any Distribution Provider that owns a transmission Protection System and each Generator Owner that owns a generation Protection System shall provide documentation of its Protection System maintenance and testing program and the implementation of that program to its Regional Reliability Organization on request (within 30 calendar days). The documentation of the program implementation shall include:</p> <p>R2.1. Evidence Protection System devices were maintained and tested within</p>	<p>PRC-005-2, R3 PRC-005-2, R4, PRC-005-2, M3, PRC-005-2, M4</p> <p>NERC Compliance Monitoring Enforcement Program</p> <p>Data Retention 1.3</p>	<p>R3. Each Transmission Owner, Generator Owner, and Distribution Provider that utilizes time-based maintenance programs shall maintain its Protection System Components that are included within the time-based maintenance program in accordance with the minimum maintenance activities and maximum maintenance intervals prescribed within Tables 1-1 through 1-5, Table 2, and Table 3.</p> <p>R4. Each Transmission Owner, Generator Owner, and Distribution Provider that utilizes performance-based maintenance programs in accordance with Requirement R2 shall implement and follow its PSMP for its Protection System Components that are included within the performance-based program.</p> <p>The legacy requirement that the entity provide the program results to the RRO and NERC on</p>

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<p>the defined intervals.</p> <p>R2.2. Date each Protection System device was last tested/maintained.</p>		<p>request is addressed in the NERC Compliance Monitoring Enforcement Program.</p> <p>M3. Each Transmission Owner, Generator Owner, and Distribution Provider that utilizes time-based maintenance programs shall have evidence that it has maintained its Protection System Components included within its time-based program in accordance with Requirement R3. The evidence may include but is not limited to dated maintenance records, dated maintenance summaries, dated check-off lists, dated inspection records, or dated work orders.</p> <p>M4. Each Transmission Owner, Generator Owner, and Distribution Provider that utilizes a performance-based maintenance program in accordance with Requirement R2 shall have evidence that it has implemented the Protection System Maintenance Program for the Protection System Components included in its performance-based program in accordance with Requirement R4. The evidence may include but is not limited to dated maintenance records, dated maintenance summaries, dated check-off lists, dated inspection records, or dated work orders.</p> <p>1.3 Data Retention</p> <p>For Requirement R2, Requirement R3, Requirement R4, and Requirement R5, the Transmission Owner, Generator Owner, and Distribution Provider shall each keep documentation of the two most recent</p>

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		performances of each distinct maintenance activity for the Protection System Components, or all performances of each distinct maintenance activity for the Protection System Component since the previous scheduled audit date, whichever is longer.

Standard: PRC-008-0 - Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program		
Requirement in Approved Standard	Translation to New Standard or Other Action	Proposed Language in PRC-005-2 – Protection System Maintenance or Comments
<p><b>R1.</b> The Transmission Owner and Distribution Provider with a UFLS program (as required by its Regional Reliability Organization) shall have a UFLS equipment maintenance and testing program in place. This UFLS equipment maintenance and testing program shall include UFLS equipment identification, the schedule for UFLS equipment testing, and the schedule for UFLS equipment maintenance.</p>	<p>PRC-005-2, R1, R2, R3, R4, and Applicability 4.2.2</p> <p>Tables 1-1 – 1-5, Table 2, and Table 3</p>	<p>See mapping of Requirements R1 and R2 for PRC-005-1 above.</p> <p>4.2 Facilities 4.2.2 Protection Systems used for Underfrequency load-shedding systems installed per ERO Underfrequency load-shedding requirements.</p> <p>See PRC-005-2 Tables 1-1 through 1-5, Table 2, and Table 3. The Tables establish prescribed maximum intervals and minimum maintenance activities, and, as such, the entity no longer needs to establish the basis for their intervals.</p>
<p><b>R2.</b> The Transmission Owner and Distribution Provider with a UFLS program (as required by its Regional Reliability Organization) shall implement its UFLS equipment maintenance and testing program and shall provide UFLS maintenance and testing program results to its Regional Reliability Organization and NERC on request (within 30 calendar days).</p>	<p>PRC-005-2, R3, PRC-002, R4</p> <p>PRC-005-2, M3, and PRC-005-2 M4</p> <p>NERC Compliance Monitoring Enforcement Program</p>	<p>See mapping of Requirements R1 and R2 for PRC-005-1 above.</p> <p>The legacy requirement that the entity provide the program results to the RRO and NERC on request is addressed in the NERC Compliance Monitoring Enforcement Program.</p>

Standard: PRC-011-0 - Undervoltage Load Shedding System Maintenance and Testing

Requirement in Approved Standard	Translation to New Standard or Other Action	Proposed Language in PRC-005-2 – Protection System Maintenance or Comments
<p><b>R1.</b> The Transmission Owner and Distribution Provider that owns a UVLS system shall have a UVLS equipment maintenance and testing program in place. This program shall include:</p> <p><b>R1.1.</b> The UVLS system identification which shall include but is not limited to:</p> <p><b>R1.1.1.</b> Relays.</p> <p><b>R1.1.2.</b> Instrument transformers.</p> <p><b>R1.1.3.</b> Communications systems, where appropriate.</p> <p><b>R1.1.4.</b> Batteries.</p> <p><b>R1.2.</b> Documentation of maintenance and testing intervals and their basis.</p> <p><b>R1.3.</b> Summary of testing procedure.</p> <p><b>R1.4.</b> Schedule for system testing.</p> <p><b>R1.5.</b> Schedule for system maintenance.</p> <p><b>R1.6.</b> Date last tested/maintained.</p>	<p>PRC-005-2, R1, PRC-005-2, R2, PRC-005-2, R3, PRC-005-2, R4, PRC-005-2 M3, PRC-005-2, M4, and PRC-005-2 Applicability 4.2.3</p> <p>Tables 1-1 – 1-5, Table 2, and Table 3</p> <p>Data Retention 1.3</p>	<p>See mapping of Requirements R1, and R2 for PRC-005-1 above.</p> <p>4.2 Facilities 4.2.3 Protection Systems used for undervoltage load-shedding systems installed to prevent system voltage collapse or voltage instability for BES reliability.</p> <p>See PRC-005-2 Tables 1-1 through 1-5, Table 2, and Table 3. The Tables establish prescribed maximum intervals and minimum maintenance activities, and, as such, the entity no longer needs to establish the basis for their intervals.</p> <p>1.3 Data Retention For Requirement R2, Requirement R3, Requirement R4, and Requirement R5, the Transmission Owner, Generator Owner, and Distribution Provider shall each keep documentation of the two most recent performances of each distinct maintenance activity for the Protection System Components, or all performances of each distinct maintenance activity for the Protection System Component since the previous scheduled audit date, whichever is longer.</p>
<p><b>R2.</b> The Transmission Owner and Distribution Provider that owns a UVLS system shall provide documentation of its</p>	<p>NERC Compliance Monitoring Enforcement</p>	<p>The legacy requirement that the entity provide the program results to the RRO and NERC on request is addressed in the NERC Compliance</p>

**Standard: PRC-011-0 - Undervoltage Load Shedding System Maintenance and Testing**

<b>Requirement in Approved Standard</b>	<b>Translation to New Standard or Other Action</b>	<b>Proposed Language in PRC-005-2 – Protection System Maintenance or Comments</b>
<p>UVLS equipment maintenance and testing program and the implementation of that UVLS equipment maintenance and testing program to its Regional Reliability Organization and NERC on request (within 30 calendar days).</p>	<p>Program</p>	<p>Monitoring Enforcement Program</p>

Standard: PRC-017-0 - Special Protection System Maintenance and Testing		
Requirement in Approved Standard	Translation to New Standard or Other Action	Proposed Language in PRC-005-2 – Protection System Maintenance or Comments
<p><b>R1.</b> The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall have a system maintenance and testing program(s) in place. The program(s) shall include:</p> <p><b>R1.1.</b> SPS identification shall include but is not limited to:</p> <p><b>R1.1.1.</b> Relays.</p> <p><b>R1.1.2.</b> Instrument transformers.</p> <p><b>R1.1.3.</b> Communications systems, where appropriate.</p> <p><b>R1.1.4.</b> Batteries.</p> <p><b>R1.2.</b> Documentation of maintenance and testing intervals and their basis.</p> <p><b>R1.3.</b> Summary of testing procedure.</p> <p><b>R1.4.</b> Schedule for system testing.</p> <p><b>R1.5.</b> Schedule for system maintenance.</p> <p><b>R1.6.</b> Date last tested/maintained.</p>	<p>PRC-005-2, R1, PRC-005-2, R2, PRC-005-2, R3, PRC-005-2, R4, PRC-005-2 M3, PRC-005-2, M4, and PRC-005-2 Applicability 4.2.4</p> <p>Tables 1-1 – 1-5, and Table 2</p> <p>Data Retention 1.3</p>	<p>See mapping of Requirements R1, and R2 for PRC-005-1 above.</p> <p>4.2 Facilities 4.2.4 Protection Systems installed as a Special Protection System (SPS) for BES reliability.</p> <p>See PRC-005-2 Tables 1-1 through 1-5 and Table 2. The Tables establish prescribed maximum intervals and minimum maintenance activities, and, as such, the entity no longer needs to establish the basis for their intervals.</p> <p>1.3 Data Retention For Requirement R2, Requirement R3, Requirement R4, and Requirement R5, the Transmission Owner, Generator Owner, and Distribution Provider shall each keep documentation of the two most recent performances of each distinct maintenance activity for the Protection System Components, or all performances of each distinct maintenance activity for the Protection System Component since the previous scheduled audit date, whichever is longer.</p>



Standard: PRC-017-0 - Special Protection System Maintenance and Testing		
Requirement in Approved Standard	Translation to New Standard or Other Action	Proposed Language in PRC-005-2 – Protection System Maintenance Or Comment
<p><b>R2.</b> The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of the program and its implementation to the appropriate Regional Reliability Organizations and NERC on request (within 30 calendar days).</p>	<p>NERC Compliance Monitoring Enforcement Program</p>	<p>R1. The legacy requirement that the entity provide the program results to the RRO and NERC on request is addressed in the NERC Compliance Monitoring Enforcement Program</p>