

**PRC-006, PRC-007, and PRC-009 Mapping to  
 Proposed Continent-Wide Standard**

**PRC-006: Development and Documentation of Regional UFLS Programs**

Requirement in the Existing PRC Standards	Location in UFLS Regional Reliability Standard Characteristics (1 <sup>st</sup> Posting)	Location in Proposed Continent-Wide UFLS Standard (2 <sup>nd</sup> Posting)	Needed for Reliability
<b>R1:</b> Each Regional Reliability Organization shall develop, coordinate, and document an UFLS program, which shall include the following:	UFLS Regional Reliability Standard Characteristics 1, 2, and 3.	Continent-wide Standard Requirements R1, R2, R3, R4, and R5.	Yes
<b>R1.1:</b> Requirements for coordination of UFLS programs within the subregions, Regional Reliability Organization and, where appropriate, among Regional Reliability Organizations.	UFLS Regional Reliability Standard Characteristic 3.	Continent-wide Standard Requirement R4.	Yes
<p><b>R1.2:</b> Design details shall include, but are not limited to:</p> <p><b>R.1.2.1:</b> Frequency set points.</p> <p><b>R.1.2.2:</b> Size of corresponding load shedding blocks (% of connected loads.)</p> <p><b>R.1.2.3:</b> Intentional and total tripping time delays.</p> <p><b>R.1.2.4:</b> Generation protection.</p> <p><b>R.1.2.5:</b> Tie tripping schemes.</p> <p><b>R.1.2.6:</b> Islanding schemes.</p> <p><b>R.1.2.7:</b> Automatic load restoration schemes.</p> <p><b>R.1.2.8:</b> Any other schemes that are part of or impact the UFLS programs.</p>	These design details will be included in the Regional Standards, and will be established within each region to meet the common system performance standard defined by UFLS Regional Reliability Standard Characteristics 4 and 5.	Continent-wide Standard Requirements R6 and R7.1.	Yes

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<p><b>R1.3:</b> A Regional Reliability Organization UFLS program database. This database shall be updated as specified in the Regional Reliability Organization program (but at least every five years) and shall include sufficient information to model the UFLS program in dynamic simulations of the interconnected transmission systems.</p>	<p>UFLS Regional Reliability Standard Characteristics 7 and 8.</p>	<p>Continent-wide Standard Requirements R8 and R9.</p>	<p>Yes</p>
<p><b>R1.4:</b> Assessment and documentation of the effectiveness of the design and implementation of the Regional UFLS program. This assessment shall be conducted periodically and shall (at least every five years or as required by changes in system conditions) include, but not be limited to:</p> <p><b>R1.4.1:</b> A review of the frequency set points and timing, and</p> <p><b>R1.4.2:</b> Dynamic simulation of possible Disturbance that cause the Region or portions of the Region to experience the largest imbalance between Demand (Load) and generation.</p>	<p>UFLS Regional Reliability Standard Characteristic 10.</p>	<p>Continent-wide Standard Requirement R7.</p>	<p>Yes</p>
<p><b>R2:</b> The Regional Reliability Organization shall provide documentation of its UFLS program and its database information to NERC on request (within 30 calendar days).</p>	<p>UFLS Regional Reliability Standard Characteristics 7 and 8.</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Section 401:</p> <p>3. Data Access — All bulk power system owners, operators, and users shall provide to NERC and the applicable regional entity such information as is necessary to monitor compliance with the reliability standards. NERC and the</p>	<p>No</p>

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		applicable regional entity will define the data retention and reporting requirements in the reliability standards and compliance reporting procedures.	
<p><b>R3:</b> The Regional Reliability Organization shall provide documentation of the assessment of its UFLS program to NERC on request (within 30 calendar days).</p>	<p>UFLS Regional Reliability Standard Characteristic 10.</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Section 401:</p> <p>3. Data Access — All bulk power system owners, operators, and users shall provide to NERC and the applicable regional entity such information as is necessary to monitor compliance with the reliability standards. NERC and the applicable regional entity will define the data retention and reporting requirements in the reliability standards and compliance reporting procedures.</p>	<p>No</p>

**PRC-007: Assuring Consistency with Regional UFLS Program Requirements**

Requirement in the Existing PRC Standards	Location in UFLS Regional Reliability Standard Characteristics (1 <sup>st</sup> Posting)	Location in Proposed Continent-Wide UFLS Standard (2 <sup>nd</sup> Posting)	Needed for Reliability
<p><b>R1:</b> The Transmission Owner and Distribution Provider, with a UFLS program (as required by its Regional Reliability Organization) shall ensure that its UFLS program is consistent with its Regional Reliability Organization’s UFLS program requirements.</p>	<p>UFLS Regional Reliability Standard Characteristic 11.</p>	<p>Continent-wide Standard Requirements R9 and R10.</p>	<p>Yes</p>
<p><b>R2:</b> The Transmission Owner, Transmission Operator, Distribution Provider, and Load-Serving Entity that owns or operates a UFLS program (as required by its Regional Reliability Organization) shall provide, and annually update, its underfrequency data as necessary for its Regional Reliability Organization to maintain and update a UFLS program database.</p>	<p>UFLS Regional Reliability Standard Characteristics 7 and 8.</p>	<p>Continent-wide Standard Requirement R9.</p>	<p>Yes</p>
<p><b>R3:</b> The Transmission Owner and Distribution Provider that owns a UFLS program (as required by its Regional Reliability Organization) shall provide its documentation of that UFLS program to its Regional Reliability Organization on request (30 calendar days).</p>	<p>UFLS Regional Reliability Standard Characteristic 10.</p>	<p>Continent-wide Standard Requirement R9.</p>	<p>Yes</p>

**PRC-009: UFLS Performance Following an Underfrequency Event**

Requirement in the Existing PRC Standards	Location in UFLS Regional Reliability Standard Characteristics (1 <sup>st</sup> Posting)	Location in Proposed Continent-Wide UFLS Standard (2 <sup>nd</sup> Posting)	Needed for Reliability
<p><b>R1:</b> The Transmission Owner, Transmission Operator, Load-Serving Entity and Distribution Provider that owns or operates a UFLS program (as required by its Regional Reliability Organization) shall analyze and document its UFLS program performance in accordance with its Regional Reliability Organization’s UFLS program. The analysis shall address the performance of UFLS equipment and program effectiveness following system events resulting in system frequency excursions below the initializing set points of the UFLS program. The analysis shall include, but not be limited to:</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.</p>	<p>Yes</p>
<p><b>R1.1:</b> A description of the event including initiating conditions.</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting</p>	<p>Yes</p>

Requirement in the Existing PRC Standards	Location in UFLS Regional Reliability Standard Characteristics (1 <sup>st</sup> Posting)	Location in Proposed Continent-Wide UFLS Standard (2 <sup>nd</sup> Posting)	Needed for Reliability
	to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.	detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.	
<b>R1.2:</b> A review of the UFLS set points and tripping times.	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.</p>	Yes
<b>R1.3:</b> A simulation of the event.	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting</p>	Yes

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	to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.	detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.	
<b>R1.4:</b> A summary of the findings.	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.</p>	Yes
<b>R2:</b> The Transmission Owner, Transmission Operator, Load-Serving Entity, and Distribution Provider that owns or operates a UFLS program (as required by its Regional Reliability Organization) shall provide documentation of the analysis of the UFLS program to its Regional Reliability Organization and NERC on request 90 calendar days after the system event.	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system models and data</p>	<p>These existing requirements are covered in the ERO Rules of Procedures, Appendix 8, page 296:</p> <p>A NERC-level analysis will comprise (a) collecting pertinent event data; (b) constructing a detailed sequence of events leading to and triggering the disturbance; (c) assembling system</p>	Yes

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	and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.	models and data and conducting detailed system analysis to simulate pre- and post-event conditions; and (d) issuing findings, conclusions, and recommendations.	