

The following table lists the Violation Risk Factors (VRFs) for the Version 0 Protection & Control standards requirements. These VRFs are the weighted average of the stakeholder VRF selections from the second posting of the VRF survey.

VIOLATION RISK FACTORS – VERSION 0 STANDARDS PRE-BALLOT MATRIX

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-001-0	R1.	Each Transmission Operator, Balancing Authority, and Generator Operator shall be familiar with the purpose and limitations of protection system schemes applied in its area.	MEDIUM
PRC-001-0	R2.	Each Generator Operator and Transmission Operator shall notify reliability entities of relay or equipment failures as follows:	MEDIUM
PRC-001-0	R2.1.	If a protective relay or equipment failure reduces system reliability, the Generator Operator shall notify its Transmission Operator and Host Balancing Authority. The Generator Operator shall take corrective action as soon as possible.	HIGH
PRC-001-0	R2.2.	If a protective relay or equipment failure reduces system reliability, the Transmission Operator shall notify its Reliability Coordinator and affected Transmission Operators and Balancing Authorities. The Transmission Operator shall take corrective action as soon as possible.	HIGH
PRC-001-0	R3.	A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows.	HIGH
PRC-001-0	R3.1.	Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority.	HIGH
PRC-001-0	R3.2.	Each Transmission Operator shall coordinate all new protective systems and all protective system changes with neighboring Transmission Operators and Balancing Authorities.	HIGH
PRC-001-0	R4.	Each Transmission Operator shall coordinate protection systems on major transmission lines and interconnections with neighboring Generator Operators, Transmission Operators, and Balancing Authorities.	HIGH
PRC-001-0	R5.	A Generator Operator or Transmission Operator shall coordinate changes in generation, transmission, load or operating conditions that could require changes in the protection systems of others:	HIGH
PRC-001-0	R5.1.	Each Generator Operator shall notify its Transmission Operator in advance of changes in generation or operating conditions that could require changes in the Transmission Operator's protection systems.	HIGH
PRC-001-0	R5.2.	Each Transmission Operator shall notify neighboring Transmission Operators in advance of changes in generation, transmission, load, or operating conditions that could require changes in the other Transmission Operators' protection systems.	HIGH
PRC-001-0	R6.	Each Transmission Operator and Balancing Authority shall monitor the status of each Special Protection System in their area, and shall notify affected Transmission Operators and Balancing Authorities of each change in status.	MEDIUM

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-002-0	R1.	The Regional Reliability Organization shall develop comprehensive requirements for the installation of Disturbance monitoring equipment to ensure data is available to determine system performance and the causes of System Disturbances. The comprehensive requirements shall include all of the following:	LOWER
PRC-002-0	R1.1.	Type of data recording capability (e.g., sequence-of-event, Fault recording, dynamic Disturbance recording).	LOWER
PRC-002-0	R1.2.	Equipment characteristics including but not limited to:	LOWER
PRC-002-0	R1.2.1.	Recording duration requirements.	LOWER
PRC-002-0	R1.2.2.	Time synchronization requirements.	LOWER
PRC-002-0	R1.2.3.	Data format requirements.	LOWER
PRC-002-0	R1.2.4.	Event triggering requirements	LOWER
PRC-002-0	R1.3.	Monitoring, recording, and reporting capabilities of the equipment.	LOWER
PRC-002-0	R1.3.1.	Voltage.	LOWER
PRC-002-0	R1.3.2.	Current.	LOWER
PRC-002-0	R1.3.3.	Frequency.	LOWER
PRC-002-0	R1.3.4.	MW and/or MVAR, as appropriate.	LOWER
PRC-002-0	R1.4.	Data retention capabilities (e.g., length of time data is to be available for retrieval).	LOWER
PRC-002-0	R1.5.	Regional coverage requirements (e.g., by voltage, geographic area, electric area or subarea).	LOWER
PRC-002-0	R1.6.	Installation requirements:	LOWER
PRC-002-0	R1.6.1.	Substations.	LOWER
PRC-002-0	R1.6.2.	Transmission lines.	LOWER
PRC-002-0	R1.6.3.	Generators.	LOWER
PRC-002-0	R1.7.	Responsibility for maintenance and testing.	LOWER
PRC-002-0	R1.8.	Requirements for periodic (at least every five years) updating, review, and approval of the Regional requirements.	MEDIUM
PRC-002-0	R2.	The Regional Reliability Organization shall provide its requirements for the installation of Disturbance monitoring equipment to other Regional Reliability Organizations and NERC on request (30 calendar days).	LOWER
PRC-003-0	R1.	Each Regional Reliability Organization shall have a procedure for the monitoring, review, analysis, and correction of all transmission protection system misoperations. Each Regional Reliability Organization's procedure shall include the following elements:	LOWER
PRC-003-0	R1.1.	Requirements for monitoring and analysis of all transmission protective device misoperations.	LOWER
PRC-003-0	R1.2.	Description of the data reporting requirements (periodicity and format) for those misoperations that adversely affects the reliability of the Bulk Electric Systems as specified by the Regional Reliability Organization.	LOWER
PRC-003-0	R1.3.	Process for review, follow up, and documentation of corrective action plans for misoperations.	LOWER

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-003-0	R1.4.	Identification of the Regional Reliability Organization group responsible for the procedure and the process for Regional Reliability Organization approval of the procedure.	LOWER
PRC-003-0	R1.5.	Regional Reliability Organization definition of misoperations.	LOWER
PRC-003-0	R2.	Each Regional Reliability Organization shall maintain documentation of its procedure and provide it to NERC on request (within 30 calendar days).	LOWER
PRC-004-0	R1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall analyze all protection system misoperations and shall take corrective actions to avoid future misoperations.	HIGH
PRC-004-0	R2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall provide to its affected Regional Reliability Organization and NERC on request (within 30 calendar days) documentation of the misoperations analyses and corrective actions according to the Regional Reliability Organization's procedures of Reliability Standard PRC-003-0_R 1.	LOWER
PRC-005-0	R1.	The Transmission Owner, Generator Owner and Distribution Provider that owns a transmission protection system shall have a transmission protection system maintenance and testing program in place. The program(s) shall include:	MEDIUM
PRC-005-0	R1.1.	Transmission protection system identification shall include but are not limited to:	HIGH
PRC-005-0	R1.1.1.	Relays.	HIGH
PRC-005-0	R1.1.2.	Instrument transformers.	HIGH
PRC-005-0	R1.1.3.	Communications systems, where appropriate.	HIGH
PRC-005-0	R1.1.4.	Batteries.	HIGH
PRC-005-0	R1.2.	Documentation of maintenance and testing intervals and their basis.	HIGH
PRC-005-0	R1.3.	Summary of testing procedure.	HIGH
PRC-005-0	R1.4.	Schedule for system testing.	HIGH
PRC-005-0	R1.5.	Schedule for system maintenance.	HIGH
PRC-005-0	R1.6.	Date last tested/maintained.	HIGH
PRC-005-0	R2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall provide documentation of its transmission protection system program and its implementation to the appropriate Regional Reliability Organization and NERC on request (within 30 calendar days).	LOWER
PRC-006-0	R1.	Each Regional Reliability Organization shall develop, coordinate, and document an UFLS program, which shall include the following:	HIGH
PRC-006-0	R1.1.	Requirements for coordination of UFLS programs within the subregions, Regional Reliability Organization and, where appropriate, among Regional Reliability Organizations.	HIGH
PRC-006-0	R1.2.	Design details shall include, but are not limited to:	MEDIUM
PRC-006-0	R1.2.1.	Frequency set points.	HIGH

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-006-0	R1.2.2.	Size of corresponding load shedding blocks (% of connected loads.)	HIGH
PRC-006-0	R1.2.3.	Intentional and total tripping time delays.	HIGH
PRC-006-0	R1.2.4.	Generation protection.	HIGH
PRC-006-0	R1.2.5.	Tie tripping schemes.	HIGH
PRC-006-0	R1.2.6.	Islanding schemes.	HIGH
PRC-006-0	R1.2.7.	Automatic load restoration schemes.	MEDIUM
PRC-006-0	R1.2.8.	Any other schemes that are part of or impact the UFLS programs.	MEDIUM
PRC-006-0	R1.3.	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.	MEDIUM
PRC-006-0	R1.4.	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:	HIGH
PRC-006-0	R1.4.1.	A review of the frequency set points and timing, and	HIGH
PRC-006-0	R1.4.2.	Dynamic simulation of possible Disturbance that cause the Region or portions of the Region to experience the largest imbalance between Demand (Load) and generation.	HIGH
PRC-006-0	R2.	The Regional Reliability Organization shall provide documentation of its UFLS program and its database information to NERC on request (within 30 calendar days).	LOWER
PRC-006-0	R3.	The Regional Reliability Organization shall provide documentation of the assessment of its UFLS program to NERC on request (within 30 calendar days).	LOWER
PRC-007-0	R1.	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.	MEDIUM
PRC-007-0	R2.	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.	LOWER
PRC-007-0	R3.	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).	LOWER
PRC-008-0	R1.	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.	MEDIUM

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-008-0	R2.	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).	MEDIUM
PRC-009-0	R1.	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:	MEDIUM
PRC-009-0	R1.1.	A description of the event including initiating conditions.	MEDIUM
PRC-009-0	R1.2.	A review of the UFLS set points and tripping times.	MEDIUM
PRC-009-0	R1.3.	A simulation of the event.	MEDIUM
PRC-009-0	R1.4.	A summary of the findings.	MEDIUM
PRC-009-0	R2.	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.	LOWER
PRC-010-0	R1.	The Load-Serving Entity, Transmission Owner, Transmission Operator, and Distribution Provider that owns or operates a UVLS program shall periodically (at least every five years or as required by changes in system conditions) conduct and document an assessment of the effectiveness of the UVLS program. This assessment shall be conducted with the associated Transmission Planner(s) and Planning Authority(ies).	MEDIUM
PRC-010-0	R1.1.	This assessment shall include, but is not limited to:	MEDIUM
PRC-010-0	R1.1.1.	Coordination of the UVLS programs with other protection and control systems in the Region and with other Regional Reliability Organizations, as appropriate.	MEDIUM
PRC-010-0	R1.1.2.	Simulations that demonstrate that the UVLS programs performance is consistent with Reliability Standards TPL-001-0, TPL-002-0, TPL-003-0 and TPL-004-0.	MEDIUM
PRC-010-0	R1.1.3.	A review of the voltage set points and timing.	MEDIUM
PRC-010-0	R2.	The Load-Serving Entity, Transmission Owner, Transmission Operator, and Distribution Provider that owns or operates a UVLS program shall provide documentation of its current UVLS program assessment to its Regional Reliability Organization and NERC on request (30 calendar days).	LOWER
PRC-011-0	R1.1.1.	Relays.	MEDIUM
PRC-011-0	R1.1.2.	Instrument transformers.	MEDIUM
PRC-011-0	R1.1.4.	Batteries.	MEDIUM

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-011-0	R1.6.	Date last tested/maintained.	MEDIUM
PRC-011-0	R1.	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:	MEDIUM
PRC-011-0	R1.1.	The UVLS system identification which shall include but is not limited to:	MEDIUM
PRC-011-0	R1.1.3.	Communications systems, where appropriate.	MEDIUM
PRC-011-0	R1.2.	Documentation of maintenance and testing intervals and their basis.	MEDIUM
PRC-011-0	R1.3.	Summary of testing procedure.	MEDIUM
PRC-011-0	R1.4.	Schedule for system testing.	MEDIUM
PRC-011-0	R1.5.	Schedule for system maintenance.	MEDIUM
PRC-011-0	R2.	The Transmission Owner and Distribution Provider that owns a UVLS system shall provide documentation of its 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).	LOWER
PRC-012-0	R1.	Each Regional Reliability Organization with a Transmission Owner, Generator Owner, or Distribution Providers that uses or is planning to use an SPS shall have a documented Regional Reliability Organization SPS review procedure to ensure that SPSs comply with Regional criteria and NERC Reliability Standards. The Regional SPS review procedure shall include:	MEDIUM
PRC-012-0	R1.3.	Requirements to demonstrate that the SPS shall be designed so that a single SPS component failure, when the SPS was intended to operate, does not prevent the interconnected transmission system from meeting the performance requirements defined in Reliability Standards TPL-001-0, TPL-002-0, and TPL-003-0.	MEDIUM
PRC-012-0	R1.5.	Requirements to demonstrate the proposed SPS will coordinate with other protection and control systems and applicable Regional Reliability Organization Emergency procedures.	MEDIUM
PRC-012-0	R1.1.	Description of the process for submitting a proposed SPS for Regional Reliability Organization review.	MEDIUM
PRC-012-0	R1.2.	Requirements to provide data that describes design, operation, and modeling of an SPS.	MEDIUM
PRC-012-0	R1.4.	Requirements to demonstrate that the inadvertent operation of an SPS shall meet the same performance requirement (TPL-001-0, TPL-002-0, and TPL-003-0) as that required of the contingency for which it was designed, and not exceed TPL-003-0.	MEDIUM
PRC-012-0	R1.6.	Regional Reliability Organization definition of misoperation.	MEDIUM
PRC-012-0	R1.7.	Requirements for analysis and documentation of corrective action plans for all SPS misoperations.	MEDIUM
PRC-012-0	R1.8.	Identification of the Regional Reliability Organization group responsible for the Regional Reliability Organization's review procedure and the process for Regional Reliability Organization approval of the procedure.	MEDIUM
PRC-012-0	R1.9.	Determination, as appropriate, of maintenance and testing requirements.	MEDIUM

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-012-0	R2.	The Regional Reliability Organization shall provide affected Regional Reliability Organizations and NERC with documentation of its SPS review procedure on request (within 30 calendar days).	LOWER
PRC-013-0	R1.	The Regional Reliability Organization that has a Transmission Owner, Generator Owner, or Distribution Provider with an SPS installed shall maintain an SPS database. The database shall include the following types of information:	LOWER
PRC-013-0	R1.1.	Design Objectives — Contingencies and system conditions for which the SPS was designed,	LOWER
PRC-013-0	R1.2.	Operation — The actions taken by the SPS in response to Disturbance conditions, and	LOWER
PRC-013-0	R1.3.	Modeling — Information on detection logic or relay settings that control operation of the SPS.	LOWER
PRC-013-0	R2.	The Regional Reliability Organization shall provide to affected Regional Reliability Organization(s) and NERC documentation of its database or the information therein on request (within 30 calendar days).	LOWER
PRC-014-0	R3.	The documentation of the Regional Reliability Organization's SPS assessment shall include the following elements:	LOWER
PRC-014-0	R3.3.	Identification of SPSs that were found not to comply with NERC standards and Regional Reliability Organization criteria.	LOWER
PRC-014-0	R3.4.	Discussion of any coordination problems found between a SPS and other protection and control systems.	LOWER
PRC-014-0	R3.5.	Provide corrective action plans for non-compliant SPSs.	
PRC-014-0	R1.	The Regional Reliability Organization shall assess the operation, coordination, and effectiveness of all SPSs installed in its Region at least once every five years for compliance with NERC Reliability Standards and Regional criteria.	MEDIUM
PRC-014-0	R2.	The Regional Reliability Organization shall provide either a summary report or a detailed report of its assessment of the operation, coordination, and effectiveness of all SPSs installed in its Region to affected Regional Reliability Organizations or NERC on request (within 30 calendar days).	LOWER
PRC-014-0	R3.1.	Identification of group conducting the assessment and the date the assessment was performed.	LOWER
PRC-014-0	R3.2.	Study years, system conditions, and contingencies analyzed in the technical studies on which the assessment is based and when those technical studies were performed.	LOWER
PRC-015-0	R1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall maintain a list of and provide data for existing and proposed SPSs as specified in Reliability Standard PRC-013-0_R 1.	MEDIUM
PRC-015-0	R2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall have evidence it reviewed new or functionally modified SPSs in accordance with the Regional Reliability Organization's procedures as defined in Reliability Standard PRC-012-0_R1 prior to being placed in service.	MEDIUM

Standard Number	Requirement Number	Requirement	Violation Risk Factor
PRC-015-0	R3.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of SPS data and the results of Studies that show compliance of new or functionally modified SPSs with NERC Reliability Standards and Regional Reliability Organization criteria to affected Regional Reliability Organizations and NERC on request (within 30 calendar days).	LOWER
PRC-016-0	R1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall analyze its SPS operations and maintain a record of all misoperations in accordance with the Regional SPS review procedure specified in Reliability Standard PRC-012-0_R 1.	MEDIUM
PRC-016-0	R2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall take corrective actions to avoid future misoperations.	MEDIUM
PRC-016-0	R3.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of the misoperation analyses and the corrective action plans to its Regional Reliability Organization and NERC on request (within 90 calendar days).	LOWER
PRC-017-0	R1.	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:	HIGH
PRC-017-0	R1.1.	SPS identification shall include but is not limited to:	HIGH
PRC-017-0	R1.1.1.	Relays.	HIGH
PRC-017-0	R1.1.2.	Instrument transformers.	HIGH
PRC-017-0	R1.1.3.	Communications systems, where appropriate.	HIGH
PRC-017-0	R1.1.4.	Batteries.	HIGH
PRC-017-0	R1.2.	Documentation of maintenance and testing intervals and their basis.	HIGH
PRC-017-0	R1.3.	Summary of testing procedure.	HIGH
PRC-017-0	R1.4.	Schedule for system testing.	HIGH
PRC-017-0	R1.5.	Schedule for system maintenance.	HIGH
PRC-017-0	R1.6.	Date last tested/maintained.	MEDIUM
PRC-017-0	R2.	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).	LOWER