NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Violation Risk Factors and Violation Severity Level Justifications

Project 2007-06.2 Phase 2 of Protection System Coordination
PER-006-1 – Specific Training for Personnel

This document provides the Protection System Coordination Phase 2 Standard Drafting Team (SDT) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for the proposed PER-006-1 – Specific Training for Personnel.

Each primary requirement is assigned a VRF and a set of one or more VSLs. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the ERO Sanction Guidelines.

The SDT applied the following NERC criteria and FERC Guidelines when proposing VRFs and VSLs for the requirements under this project.

NERC Criteria – Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. However, violation of a medium risk requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement

A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability

to effectively monitor and control the bulk electric system; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. A planning requirement that is administrative in nature.

FERC Violation Risk Factor Guidelines

The standard drafting team (SDT) also considered consistency with the FERC Violation Risk Factor Guidelines for setting VRFs:[1]

Guideline (1) — Consistency with the Conclusions of the Final Blackout Report

The Commission seeks to ensure that Violation Risk Factors assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System.

In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System: [2]

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief

Guideline (2) — Consistency within a Reliability Standard

The Commission expects a rational connection between the sub-Requirement Violation Risk Factor assignments and the main Requirement Violation Risk Factor assignment.

[1] *North American Electric Reliability Corp.*, 119 FERC ¶ 61,145, order on reh'g and compliance filing, 120 FERC ¶ 61,145 (2007) ("VRF Rehearing Order").
[2] *Id*. at footnote 15.

Guideline (3) — Consistency among Reliability Standards
The Commission expects the assignment of Violation Risk Factors corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) — Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular Violation Risk Factor level conforms to NERC's definition of that risk level.

Guideline (5) — Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria – Violation Severity Levels

Violation Severity Levels (VSLs) define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

Violation severity levels should be based on the guidelines shown in the table below:

Lower	Moderate	High	Severe
Missing a minor element (or a small percentage) of the required performance The performance or product measured has significant value as it almost meets the full intent of the requirement.	Missing at least one significant element (or a moderate percentage) of the required performance. The performance or product measured still has significant value in meeting the intent of the requirement.	Missing more than one significant element (or is missing a high percentage) of the required performance or is missing a single vital component. The performance or product has limited value in meeting the intent of the requirement.	Missing most or all of the significant elements (or a significant percentage) of the required performance. The performance measured does not meet the intent of the requirement or the product delivered cannot be used in meeting the intent of the requirement.

FERC Order on Violation Severity Levels

In its June 19, 2008 Order on Violation Severity Levels,[3] FERC indicated it would use the following four guidelines for determining whether to approve VSLs:

Guideline 1: Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance[4]

Compare the VSLs to any prior Levels of Non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when Levels of Non-compliance were used.

Guideline 2: Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties[5]

Guideline 2a: A violation of a "binary" type requirement must be a "Severe" VSL.

Guideline 2b: Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline 3: Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement[6]

VSLs should not expand on what is required in the requirement.

Guideline 4: Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations[7]

. . . unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

[3] *Order on Violation Severity Levels Proposed by the Electric Reliability Organization*, 123 FERC ¶61,284 (2008).
[4] *Id*. at P20
[5] *Id*. at P22
[6] *Id*. at P32
[7] *Id*. at P35

VRF Justifications – PER-006-1, Requirement R1	
Proposed VRF	**Medium**
NERC VRF Discussion	In this requirement, each Generator Operator (GOP) is required to train its plant personnel on the operational functionality of Protection Systems and Remedial Action Schemes that affect output of a generating Facility. It is unlikely that this requirement in the planning time frame, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, a violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition. The PRC-001-1.1(ii), Requirement R1 that will be replaced by PER-006-1, Requirement R1 has a VRF of High. The VRF of High is associated with the performance of the Balancing Authority (BA) and Transmission Operator (TOP) as they have a greater responsibility for ensuring reliable operation of the bulk electric system. The requirement for these entities to be familiar with the purpose and limitations of Protection System schemes in its area is addressed by the Transmission Operations and Interconnection Reliability Operations and Coordination (TOP/IRO) sets of Reliability Standards and various requirements identified in the project mapping document. These requirements are appropriately assigned VRFs of Medium and High, therefore, does not require the GOP to also have a VRF of High. The Medium VRF is consistent with the training Requirements in the PER-005-2 (*System Personnel Training*) Reliability Standard, which includes the GOP, BA, TOP, and Reliability Coordinator.
FERC VRF G1 Discussion	Guideline 1- Consistency w/ Blackout Report: This Requirement is consistent with the intent of Recommendation 8: Improve System Protection to Slow or Limit the Spread of Future Cascading Outages.

VRF Justifications – PER-006-1, Requirement R1	
Proposed VRF	**Medium**
FERC VRF G2 Discussion	Guideline 2- Consistency within a Reliability Standard: The Requirement has a single reliability activity associated with the reliability objective and no sub-Requirement(s) which allows a single VRF to be assigned; therefore no conflict(s) exist.
FERC VRF G3 Discussion	Guideline 3- Consistency among Reliability Standards: The Requirement with a Medium VRF is consistent with the training Requirements in PER-005-1 and PER-005-2 that will become effective July 1, 2016.
FERC VRF G4 Discussion	Guideline 4- Consistency with NERC Definitions of VRFs: A VRF of Medium is consistent with the NERC VRF definition because GOP plant personnel could gain knowledge of the operational functionality of Protection Systems and Remedial Action Schemes that affect output of a generating Facility without specific training. It is unlikely that this requirement in the planning time frame, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the bulk electric system, or the ability to effectively monitor, control, or restore the bulk electric system. However, a violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to bulk electric system instability, separation, or cascading failures, nor to hinder restoration to a normal condition.
FERC VRF G5 Discussion	Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation: This Requirement does not co-mingle reliability objectives of differing risk; therefore, the assigned VRF of Medium is consistent.

Proposed VSL – PER-006-1, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Generator Operator failed to provide training as described in Requirement R1 to the greater of: • one applicable personnel at a single Facility, or • 5% or less of the total applicable personnel of the Generator Operator.	The Generator Operator failed to provide training as described in Requirement R1 to the greater of: • two applicable personnel at a single Facility, or • more than 5% and less than or equal to 10% of the total applicable personnel of the Generator Operator.	The Generator Operator failed to provide training as described in Requirement R1 to the greater of: • three applicable personnel at a single Facility, or • more than 10% and less than or equal to 15% of the total applicable personnel of the Generator Operator.	The Generator Operator failed to provide training as described in Requirement R1 to the greater of: • five or more applicable personnel at a single Facility, or • more than 15% of the total applicable personnel of the Generator Operator. **OR** The Generator Operator failed to provide training as described in Requirement R1 to its applicable personnel.

VSL Justifications – PER-006-1, Requirement R1	
NERC VSL Guidelines	Meets NERC's VSL Guidelines—There is a gradated VSL for partial performance from a Lower to High VSL and a VSL of Severe for severe or complete failure of the Requirement.

VSL Justifications – PER-006-1, Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The currently effective PRC-001-1.1(ii) did not have VSLs assignments. The proposed VSLs do not lower the current level of compliance because they are consistent with the approved PER-005-2, Requirement R6 for which PER-006-1, Requirement R1 is based upon.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: This Requirement has a binary component and utilizes a VSL of Severe for complete failure in addition to incremental VSLs for partial performance. The VSLs provide a non-preferential way to apply violation levels to both small and large entities. Violations may be assessed at the greater of the number of personnel at the plant level or a percentage of personnel at the entity level. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses similar terminology to that used in the corresponding Requirement, and is therefore consistent with the Requirement.

VSL Justifications – PER-006-1, Requirement R1	
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations.