

Violation Risk Factor and Violation Severity Level Assignments

Project 2007-09 Generator Verification

This document provides the drafting team's justification for assignment of Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) for each requirement in MOD-025-2 — Verification and Data Reporting of Generator Real and Reactive Power Capability.

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.

Justification for Assignment of Violation Risk Factors

The Generator Verification Standard drafting team applied the following NERC criteria when proposing VRFs for the requirements under this project:

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.

The 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.

Guideline (3) — Consistency among Reliability Standards

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.

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.

The following discussion addresses how the SDT considered FERC’s VRF Guidelines 2 through 5. The team did not address Guideline 1 directly because of an apparent conflict between Guidelines 1 and 4; whereas Guideline 1 identifies a list of topics that encompass nearly all topics within NERC’s reliability standards and implies that these requirements should be assigned a “High” VRF, Guideline 4 directs assignment of VRFs based on the impact of a specific requirement to the reliability of the system. The SDT believes that Guideline 4 is reflective of the intent of VRFs in the first instance; and, therefore, concentrated its approach on the reliability impact of the requirements.

VRF for MOD-025-2:

There are three requirements in MOD-025-2. Each requirement was assigned a “Medium” VRF.

VRF for MOD-025-2, Requirement R1:

- FERC Guideline 2 — Consistency within a reliability standard exists. Each Requirement in MOD-025-1 is assigned a “Medium” VRF. Requirement R1 is similar in scope to Requirements R2 and R3. Each requirement is to perform a verification of capability.
- FERC Guideline 3 — Consistency among reliability standards exists. This requirement is similar with MOD-010-0 and MOD-012-0 Requirements R1 and R2 in concept and they have approved Medium VRFs. A primary difference being MOD-010-0 and MOD-012-0 require data submission for all Facilities, and not merely a single unit, as specified in this standard.
- FERC Guideline 4 — Consistency with NERC’s definition of the VRF level selected exists. Failure to verify models in the long-term planning time horizon is a requirement in a planning time frame that, if violated, could, 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. Therefore, the assigned “Medium” VRF is appropriate.

- FERC Guideline 5 — Treatment of requirements that co-mingle more than one obligation is satisfactory. The Requirement R1 risk objective is to verify capability. The risk objectives are administrative in nature, consisting of recording and submission requirements for planning studies. The “Medium” VRF assigned is based on the risk objective specified.

VRF for MOD-025-2, Requirement R2:

- FERC Guideline 2 — Consistency within is similar in scope to Requirements R1 and R3. Each Requirement is to perform a verification of capability.
- FERC Guideline 3 — Consistency among Reliability Standards exists. This requirement is similar with MOD-010-0 and MOD-012-0 Requirements R1 and R2 in concept, and they have approved Medium VRFs. A primary difference being MOD-010-0 and MOD-012-0 require data submission for all Facilities, and not merely a single unit as specified in this standard.
- FERC Guideline 4 — Consistency with NERC’s Definition of the VRF Level selected exists. Failure to verify models is a requirement in a planning time frame that, if violated, could, 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. Therefore, the assigned “Medium” VRF is appropriate.
- FERC Guideline 5 — Treatment of requirements that co-mingle more than one obligation is satisfactory. The Requirement R1 risk objective is to verify capability. The risk objectives are administrative in nature, consisting of recording and submission requirements for planning studies. The “Medium” VRF assigned is based on the risk objective specified.

VRF for MOD-025-2, Requirement R3:

- FERC Guideline 2 — Consistency within a reliability standard exists. Each requirement in MOD-025-1 is assigned a “Medium” VRF. Requirement R3 is similar in scope to Requirements R1 and R2.
- FERC Guideline 3 — Consistency among reliability standards exists. This requirement is similar with MOD-010-0 and MOD-012-0, Requirements R1 and R2, in concept and they have approved Medium VRFs. A primary difference being MOD-010-0 and MOD-012-0 require data submission for all Facilities, and not merely a single unit, as specified in this standard.
- FERC Guideline 4 — Consistency with NERC’s definition of the VRF level selected exists. Failure to verify models in the long-term planning time horizon is a requirement in a planning time frame that, if violated, could, 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. Therefore, the assigned “Medium” VRF is appropriate.

- FERC Guideline 5 — Treatment of requirements that co-mingle more than one obligation is satisfactory. The Requirement R3 risk objective is to verify capability. The risk objectives are administrative in nature, consisting of recording and submission requirements for planning studies. The “Medium” VRF assigned is based on the risk objective specified.

Justification for Assignment of Violation Severity Levels:

In developing the VSLs for the standards under this project, the SDT anticipated the evidence that would be reviewed during an audit, and developed its VSLs based on the noncompliance an auditor may find during a typical audit. The SDT based its assignment of VSLs on the following NERC criteria:

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’s VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in MOD-025-2 meet the FERC Guidelines for assessing VSLs:

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

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

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

A violation of a “binary” type requirement must be a “Severe” VSL.

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

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

Unless otherwise stated in the requirement, each instance of noncompliance 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.

VSLs for MOD-025-2 Requirement R1:

R#	Compliance with NERC VSL Guidelines	Guideline 1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Guideline 2 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 3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	Guideline 4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations
R1	The NERC VSL guidelines are satisfied by identifying noncompliance based on the obligation to verify capability and provide data within certain timeframes. The VSLs account for increments of tardiness and incomplete data submissions.	Standard requirements have been significantly revised since MOD-025-1 was approved. Proposed VSL's are binary with additional consideration for the obligation to submit information in a timely fashion; whereas, MOD-025-1 levels of noncompliance only considered completeness of submitted information. As drafted, proposed VSL's raise the current level of compliance.	Proposed VSL's identify noncompliance based on the obligation to verify capability and provide data within certain timeframes. The VSLs account for increments of tardiness and incomplete data submissions. Proposed VSL language does not include ambiguous terms, and ensure uniformity and consistency in the determination of penalties based on binary performance and obligation information submission timeliness.	Proposed VSL's do not expand on what is required in the requirement. The VSL's assigned only consider performing required action, and if information is provided in a timely manner. Proposed VSL's are consistent with the requirement.	Proposed VSL's are based on a single violation, and not a cumulative violation methodology.

VSLs for MOD-025-2 Requirement R2:

R#	Compliance with NERC VSL Guidelines	Guideline 1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Guideline 2 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 3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	Guideline 4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations
R2	The NERC VSL guidelines are satisfied by identifying noncompliance based on the obligation to verify capability and provide data within certain timeframes. The VSLs account for increments of tardiness and incomplete data submissions.	Standard requirements have been significantly revised since MOD-025-1 was approved. Proposed VSL's are binary with additional consideration for the obligation to submit information in a timely fashion; whereas, MOD-025-1 levels of noncompliance only considered completeness of submitted information. As drafted, proposed VSL's raise the current level of compliance.	Proposed VSL's identify noncompliance based on the obligation to verify capability and provide data within certain timeframes. The VSLs account for increments of tardiness and incomplete data submissions. Proposed VSL language does not include ambiguous terms and ensure uniformity and consistency in the determination of penalties based on binary performance and obligation information submission timeliness.	Proposed VSL's do not expand on what is required in the requirement. The VSL's assigned only consider performing required action and if information is provided in a timely manner. Proposed VSL's are consistent with the requirement.	Proposed VSL's are based on a single violation and not a cumulative violation methodology.

VSLs for MOD-025-2 Requirement R3:

R#	Compliance with NERC VSL Guidelines	Guideline 1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Guideline 2 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 3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	Guideline 4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations
R3.	The NERC VSL guidelines are satisfied by identifying noncompliance based on the obligation to verify capability and provide data within certain timeframes. The VSLs account for increments of tardiness and incomplete data submissions.	Standard requirements have been significantly revised since MOD-025-1 was approved. Proposed VSL's are binary with additional consideration for the obligation to submit information in a timely fashion; whereas, MOD-025-1 levels of noncompliance only considered completeness of submitted information. As drafted, proposed VSL's raise the current level of compliance.	Proposed VSL's identify noncompliance based on the obligation to verify capability and provide data within certain timeframes. The VSLs account for increments of tardiness and incomplete data submissions. Proposed VSL language does not include ambiguous terms and ensure uniformity and consistency in the determination of penalties based on binary performance and obligation information submission timeliness.	Proposed VSL's do not expand on what is required in the requirement. The VSL's assigned only consider performing required action and if information is provided in a timely manner. Proposed VSL's are consistent with the requirement.	Proposed VSL's are based on a single violation and not a cumulative violation methodology.