Violation Risk Factor and Violation Severity Level Justifications

Project 2016-01 - Modifications to TOP and IRO Standards

This document provides the standard drafting team's (SDT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for Reliability Standard requirements developed in Project 2016-01. Each requirement is assigned a VRF and a VSL. 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 Electric Reliability Organizations (ERO) Sanction Guidelines. The SDT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for 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.

FERC Guidelines for Violation Risk Factors

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

FERC seeks to ensure that VRFs 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:

- 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
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs 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 VRF 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 for 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.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels
The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard 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 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

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 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.

Project 2016-01 Reliability Standards Requirements

The SDT developed new or revised requirements in IRO-002-5 and TOP-001-4 to address reliability objectives outlined in the project Standard Authorization Request (SAR). The VRF and VSL justification for these new and revised requirements is described below. VRF and VSL justification for requirements that were not modified in Project 2016-01 can be found on the Project 2014-03 Project Page.

VRF Justification

VRF Justification for TOP-001-4 Requirement R10	
Proposed VRF	High
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	The requirement is not directly connected to an area identified in the Blackout Report.

VRF Justification for TOP-001-4 Requirement R10	
Proposed VRF	**High**
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	The requirement has no sub-requirements and is assigned a single VRF.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	The proposed VRF is unchanged from approved TOP-001-3 Requirement R10. Additionally, the requirement is similar to approved IRO-002-4 Requirement R3 which applies to Reliability Coordinators and is assigned a High VRF.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	Failure to monitor Facilities, the status of Remedial Action Schemes, and non-BES facilities identified as necessary by the Transmission Operator, could lead to bulk power system instability, separation, or Cascading failures. Thus, this requirement meets the criteria for a High VRF.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	The requirement addresses a single reliability objective and has a single VRF.

VRF Justification for IRO-002-5 Requirement R1 and TOP-001-4 Requirements R19 and R22	
Proposed VRF	**Medium**
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	The requirements address data exchange capabilities for the Operations Planning time horizon, which are not the subject of the Blackout Report recommendations regarding data exchange. Data exchange capabilities for Same-day Operations and Real-time Operations are addressed in other requirements.

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VRF Justification for IRO-002-5 Requirement R1 and TOP-001-4 Requirements R19 and R22	
Proposed VRF	**Medium**
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	The requirements have no sub-requirements and are assigned a single VRF.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	The requirements address data exchange capabilities for the Operations Planning time horizon only, which is a significant change from approved IRO-002-4 Requirement R1 and TOP-001-3 Requirements R19 and R20 which apply to all operations time horizons. As proposed, the VRF will establish consistency among similar requirements in proposed IRO-002-5 and proposed TOP-001-4. Data exchange capabilities for Same-day Operations and Real-time Operations are addressed in other requirements.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	The requirements meet the criteria for a Medium VRF. Failure to have data exchange capabilities necessary for performing Operational Planning Analysis or for developing an Operating Plan for next day operations could directly and adversely affect the electrical state or capability of the BES, or the ability to effectively control or restore the BES. However, this failure is unlikely to lead to BES instability, separation, or cascading failures.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	The requirements address a single reliability objective and each has a single VRF.

VRF Justification for IRO-002-5 Requirement R2 and TOP-001-4 Requirements R20 and R23	
Proposed VRF	High
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	The requirements address data exchange capabilities for the Same-day Operations and Real-time Operations time horizons. A High VSL is assigned to reflect the potential impact on the reliability of the BES consistent with the Blackout Report.
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	The requirements have no sub-requirements and are assigned a single VRF.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	The requirements improve upon requirements for data exchange capabilities in approved IRO-002-4 and TOP-001-3, which are assigned a High VRF. As proposed, the VRF will maintain consistency among similar requirements in proposed IRO-002-5 and proposed TOP-001-4.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	The requirements meet the criteria for a High VRF. Failure to have data exchange capabilities, with redundant and diversely routed data exchange infrastructure within the Control Center, for performing Real-time monitoring and analysis 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.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	The requirements address a single reliability objective and each has a single VRF.

VRF Justification for IRO-002-5 Requirement R3 and TOP-001-4 Requirements R21 and R24	
Proposed VRF	**Medium**
FERC VRF G1 Discussion Guideline 1- Consistency with Blackout Report	The requirements are not directly connected to an area identified in the Blackout Report.
FERC VRF G2 Discussion Guideline 2- Consistency within a Reliability Standard	The requirements have no sub-requirements and are assigned a single VRF.
FERC VRF G3 Discussion Guideline 3- Consistency among Reliability Standards	These are new requirements. Approved COM-001-2.1 Requirement R9 requires periodic testing of Alternate Interpersonal Communications capability and is assigned a Medium VRF. As proposed, the VRF will maintain consistency among similar requirements in proposed IRO-002-5, proposed TOP-001-4, and approved COM-001-2.1.
FERC VRF G4 Discussion Guideline 4- Consistency with NERC Definitions of VRFs	The requirements meet the criteria for Medium VRF. Failure to periodically test data exchange capabilities for redundant functionality could, under anticipated data exchange infrastructure failure, affect the ability to monitor and control the BES. However, failure to test data exchange capabilities for redundant functionality is not likely to lead to BES instability, separation, or cascading failures.
FERC VRF G5 Discussion Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation	The requirements address a single reliability objective and each has a single VRF.

VSL Justification

VSLs for TOP-001-4 Requirement R10			
Lower	**Moderate**	**High**	**Severe**
The Transmission Operator did not monitor, obtain, or utilize one of the items listed in Requirement R10, Part 10.1 through 10.6.	The Transmission Operator did not monitor, obtain, or utilize two of the items listed in Requirement R10, Part 10.1 through 10.6.	The Transmission Operator did not monitor, obtain, or utilize three of the items listed in Requirement R10, Part 10.1 through 10.6.	The Transmission Operator did not monitor, obtain, or utilize four or more of the items listed in Requirement R10 Part 10.1 through 10.6.

VSL Justifications for TOP-001-4 Requirement R10	
NERC VSL Guidelines	Consistent with NERC's VSL Guidelines. The requirement may be described by elements or quantities to evaluate degrees of compliance. Four VSLs are specified for a graduated scale.
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	VSLs are comparable to approved TOP-001-3 Requirement R10.
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	The proposed VSL is written to ensure uniformity and consistency in the determination of penalties. Guideline 2a: The proposed VSL is not binary. Guideline 2b: The proposed VSL does not use ambiguous terms, supporting uniformity and consistency in the determination of similar penalties for similar violations.

VSL Justifications for TOP-001-4 Requirement R10	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL is worded consistently with the corresponding requirement.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The proposed VSL is not based on a cumulative number of violations.

VSLs for IRO-002-5 Requirement R1 and TOP-001-4 Requirements R19 and R22			
Lower	**Moderate**	**High**	**Severe**
The applicable entity did not have data exchange capabilities for performing its Operational Planning Analyses (or developing its Operating Plan) with one identified entity, or 5% or less of the identified entities, whichever is greater.	The applicable entity did not have data exchange capabilities for performing its Operational Planning Analyses (or developing its Operating Plan) with two identified entities, or more than 5% or less than or equal to 10% of the identified entities, whichever is greater.	The applicable entity did not have data exchange capabilities for performing its Operational Planning Analyses (or developing its Operating Plan) with three identified entities, or more than 10% or less than or equal to 15% of the identified entities, whichever is greater.	The applicable entity did not have data exchange capabilities for performing its Operational Planning Analyses (or developing its Operating Plan) with four or more identified entities or greater than 15% of the identified entities, whichever is greater.

VSL Justifications for IRO-002-5 Requirement R1 and TOP-001-4 Requirements R19 and R22	
NERC VSL Guidelines	Consistent with NERC's VSL Guidelines. The requirements may be described by elements or quantities to evaluate degrees of compliance. Four VSLs are specified for a graduated scale.
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	VSLs are comparable to approved IRO-002-4 Requirement R1 and approved TOP-001-3 Requirements R19 and R20.
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	The proposed VSLs are written to ensure uniformity and consistency in the determination of penalties. Guideline 2a: The proposed VSLs are not binary. Guideline 2b: The proposed VSLs do not use ambiguous terms, supporting uniformity and consistency in the determination of similar penalties for similar violations.

VSL Justifications for IRO-002-5 Requirement R1 and TOP-001-4 Requirements R19 and R22	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs are worded consistently with the corresponding requirements.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The proposed VSLs are not based on a cumulative number of violations.

VSLs for IRO-002-5 Requirement R2 and TOP-001-4 Requirements R20 and R23			
Lower	**Moderate**	**High**	**Severe**
N/A	N/A	The applicable entity had data exchange capabilities with its (Reliability Coordinator, Balancing Authority, and/or Transmission Operator, as specified in the requirement) and identified entities for performing Real-time monitoring (and Real-time Assessments or analysis functions), but did not have redundant and diversely routed data exchange infrastructure	The applicable entity did not have data exchange capabilities with its (Reliability Coordinator, Balancing Authority, and/or Transmission Operator, as specified in the requirement) and identified entities for performing Real-time monitoring (and Real-time Assessments or analysis functions), as specified in the Requirement.

			within its Control Center, as specified in the Requirement.	

VSL Justifications for IRO-002-5 Requirement R2 and TOP-001-4 Requirements R20 and R23	
NERC VSL Guidelines	Consistent with NERC's VSL Guidelines. The requirements may be described by elements or quantities to evaluate degrees of compliance. Two VSLs are specified for a graduated scale.
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is no current compliance obligation for the proposed requirements.
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	The proposed VSLs are written to ensure uniformity and consistency in the determination of penalties. Guideline 2a: The proposed VSLs are not binary. Guideline 2b: The proposed VSLs do not use ambiguous terms, 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 VSLs are worded consistently with the corresponding requirements.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The proposed VSLs are not based on a cumulative number of violations.

VSLs for IRO-002-5 Requirement R3 and TOP-001-4 Requirements R21 and R24			
Lower	**Moderate**	**High**	**Severe**
The applicable entity tested its data exchange capabilities for redundant functionality at least once each calendar month but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 2 hours and less than or equal to 4 hours.	The applicable entity tested its data exchange capabilities for redundant functionality at least once each calendar month but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 4 hours and less than or equal to 6 hours.	The applicable entity tested its data exchange capabilities for redundant functionality at least once each calendar month but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 6 hours and less than or equal to 8 hours.	The applicable entity did not test its data exchange capabilities for redundant functionality at least once each calendar month; OR The applicable entity tested its data exchange capabilities for redundant functionality at least once each calendar month but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 8 hours.

VSL Justifications for IRO-002-5 Requirement R3 and TOP-001-4 Requirements R21 and R24	
NERC VSL Guidelines	Consistent with NERC's VSL Guidelines. The requirements may be described by elements or quantities to evaluate degrees of compliance. Four VSLs are specified for a graduated scale.
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is no current compliance obligation for the proposed requirements.
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	The proposed VSLs are written to ensure uniformity and consistency in the determination of penalties. Guideline 2a: The proposed VSLs are not binary. Guideline 2b: The proposed VSLs do not use ambiguous terms, supporting uniformity and consistency in the determination of similar penalties for similar violations.

VSL Justifications for IRO-002-5 Requirement R3 and TOP-001-4 Requirements R21 and R24	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSLs are worded consistently with the corresponding requirements.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The proposed VSLs are not based on a cumulative number of violations.