

Project 2007-2 – Operating Personnel Communications Protocol

VRF and VSL Justifications

This document provides the drafting team's justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in COM 003-1 Operating Personnel Communications Protocols.

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 Operations Personnel Communications Protocol Standard Drafting Team 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

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:

- 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

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.

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
<p>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.</p>	<p>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.</p>	<p>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.</p>	<p>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.</p>

FERC Order on Violation Severity Levels

In its June 19, 2008 Order on Violation Severity Levels, 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

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

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

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.

VRF Justifications – COM 003-1, R1	
Proposed VRF	Medium
NERC VRF Discussion	R1 is 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 the requirement is unlikely to lead to Bulk Electric System instability, separation, or Cascading failures. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines
FERC VRF G2 Discussion	Guideline 2- Consistency within a Reliability Standard: Consistency within a Reliability Standard. The requirement has sub-requirements that are of equal importance and similarly address communication protocols; only one VRF was assigned, so there is no conflict.
FERC VRF G3 Discussion	Guideline 3- Consistency among Reliability Standards: Consistency among Reliability Standards. This requirement calls for the use of communication protocols that reduce the possibility of miscommunication which could lead to action or inaction harmful to the reliability of BES. This requirement is analogous to R2 of COM-002-2, which requires the use of communication protocols. The VRF for this requirement (COM-002-2, R2) is “Medium,” which is consistent with COM-003-1 R1 at a “Medium.” The SDT considers “Medium” as the proper assignment because it is consistent with NERC and FERC guidelines.
FERC VRF G4 Discussion	Guideline 4- Consistency with NERC Definitions of VRFs: Failure to utilize communication protocols properly 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 the requirement is unlikely to lead to Bulk Electric System instability, separation, or Cascading failures. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines.
FERC VRF G5 Discussion	Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation: COM-003-1, Requirement R1 contains only one objective, which is to specify clear, formal and universally-applied communication protocols that reduce the possibility of miscommunication which could lead to action or inaction harmful to the reliability of BES. Since the requirement has only one objective, only one VRF was assigned.

Proposed VSLs for R1			
Lower	Moderate	High	Severe
N/A	<p>The responsible entity did not correctly implement one (1) of the four (4) parts of Requirement R1, Part 1.1 when it was appropriate to use all four parts.</p> <p>OR</p> <p>The responsible entity did not correctly implement Part 1.2 of the requirement.</p>	<p>The responsible entity did not correctly implement two (2) of the four (4) parts of Requirement R1, Part 1.1 when it was appropriate to use all four parts.</p> <p>OR</p> <p>The responsible entity did not correctly implement one (1) of the four (4) parts of the requirement when it was appropriate to use three of the four parts.</p>	<p>The responsible entity did not correctly implement any of the parts of Requirement R1, Part 1.1 when it was appropriate to use all four Parts.</p> <p>OR</p> <p>The responsible entity did not correctly implement three (3) or more of the four (4) parts of Requirement R1, Part 1.1 when it was appropriate to use all four parts.</p> <p>OR</p> <p>The responsible entity did not correctly implement two (2) of the four (4) parts of Requirement R1, Part 1.1 when it was appropriate to use three of the four parts.</p> <p>OR</p> <p>The responsible entity did not correctly implement one (1) of the four (4) parts of Requirement R1, Part 1.1 when it was appropriate to use two of the four parts.</p>

VSL Justifications – COM 003-1, R1	
<p>FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>The most comparable requirement is COM-002-2, R2. Based on the VSL Guidance, the SDT developed four VSLs based on misapplication or absence of common communication protocols. If no communication protocols are used at all or if the number of required protocols falls below the listed thresholds, then the VSL is Severe.</p>
<p>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</p>	<p>Guideline 2a:</p> <ul style="list-style-type: none"> • The VSL assignment for R1 is not binary. <p>Guideline 2b:</p> <ul style="list-style-type: none"> • The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
<p>FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</p>	<p>The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement</p>
<p>FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</p>	<p>The VSL is based on a single violation and not cumulative violations</p>
<p>FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs</p>	<p>Non CIP</p>

<p>FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence</p>	<p>Non CIP</p>
---	----------------

<p>VRF Justifications – COM 003-1, R2</p>	
<p>Proposed VRF</p>	<p>Medium</p>
<p>NERC VRF Discussion</p>	<p>R2 is 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 the requirement is unlikely to lead to Bulk Electric System instability, separation, or Cascading failures. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines</p>
<p>FERC VRF G2 Discussion</p>	<p>Guideline 2- Consistency within a Reliability Standard : The requirement has sub-requirements; only one VRF was assigned, so there is no conflict. No one subrequirement is a “Low” or a “High,” so a VRF of “Medium” was assigned.</p>
<p>FERC VRF G3 Discussion</p>	<p>Guideline 3- Consistency among Reliability Standards: Consistency among Reliability Standards. This requirement calls for use of formal three-part communication by the issuer of an Operating Communication. This requirement is analogous to R2 of COM-002-2, which describes a communication protocol required for operating personnel to use when giving a directive. The VRF for this requirement is “Medium,” which is consistent with COM-003-1 R2 at a “Medium.” The SDT considers “Medium” as the proper assignment because it is consistent with NERC and FERC guidelines.</p>
<p>FERC VRF G4 Discussion</p>	<p>Guideline 4- Consistency with NERC Definitions of VRFs: Failure to utilize formal communication protocols 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 the requirement is unlikely to lead to Bulk Electric System instability, separation, or Cascading failures. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines.</p>

Project YYYY-##.# - Project Name

VRF Justifications – COM 003-1, R2

FERC VRF G5 Discussion	Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation: COM-003-1, Requirement R2 contains only one objective; which is to use formal, listed communications protocols. Since the requirement has only one objective, only one VRF was assigned.
------------------------	--

Proposed VSLs for R2			
Lower	Moderate	High	Severe
	The responsible entity issued a verbal person-to-person Operating Communication and did not confirm the receiver's response was correct. (Part 2.2, first bullet)	The responsible entity issued a verbal person-to-person Operating Communication and did not reissue the Operating Communication when requested by the receiver. (Part 2.2, third bullet)	The responsible entity issued a verbal person-to-person Operating Communication and did not wait for a response from the receiver. (Part 2.1) Or The responsible entity issued a verbal person-to-person Operating Communication and did not reissue the Operating Communication when the response was incorrect or when there was no response (Part 2.2, second bullet).

VSL Justifications – COM 003-1, R2	
<p>FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>The most comparable requirement is COM 002-2, R2. Based on the VSL Guidance, the SDT developed three VSLs based on misapplication of three-part communication. If the communication did not include the critical steps required for confirmation or for additional repetition, then the VSL is Severe.</p>
<p>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</p>	<p>Guideline 2a:</p> <ul style="list-style-type: none"> • The VSL assignment for R2 is not binary. <p>Guideline 2b:</p> <ul style="list-style-type: none"> • The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
<p>FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</p>	<p>The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement</p>
<p>FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</p>	<p>The VSL is based on a single violation and not cumulative violations</p>
<p>FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs</p>	<p>Non CIP</p>
<p>FERC VSL G6</p>	<p>Non CIP</p>

VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	
---	--

VRF Justifications – COM 003-1, R3	
Proposed VRF	Medium
NERC VRF Discussion	R3 is 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 the requirement is unlikely to lead to Bulk Electric System instability, separation, or Cascading failures. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines.
FERC VRF G2 Discussion	Guideline 2- Consistency within a Reliability Standard : The requirement has no sub-requirements; only one VRF was assigned, so there is no conflict. A VRF of “Medium” was assigned.
FERC VRF G3 Discussion	Guideline 3- Consistency among Reliability Standards: Consistency among Reliability Standards. This requirement calls for use of formal three-part communication by the receiver of an Operating Communication. This requirement is analogous to R2 of COM-002-2, which describes a communication protocol required for operating personnel to use when given a directive. The VRF for this requirement (COM-002-2,2R) is “Medium,” which is consistent with COM-003-1 R3 at a “Medium.” The SDT considers “Medium” as the proper assignment because it is consistent with NERC and FERC guidelines.
FERC VRF G4 Discussion	Guideline 4- Consistency with NERC Definitions of VRFs: Failure to utilize formal communication protocols 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 the requirement is unlikely to lead to Bulk Electric System instability, separation, or Cascading failures. The VRF for this requirement is “Medium,” which is consistent with NERC guidelines.
FERC VRF G5 Discussion	Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation: COM-003-1, Requirement R3 contains only one objective; which is to use formal listed communications protocols

Project YYYY-##.# - Project Name

VRF Justifications – COM 003-1, R3

	utilize. Since the requirement has only one objective, only one VRF was assigned.
--	---

Proposed VSLs for R3			
Lower	Moderate	High	Severe
		The responsible entity received a verbal person-to-person Operating Communication and did not wait for confirmation that the repetition was correct. (R3, first bullet)	The responsible entity received a verbal person-to-person Operating Communication and did not repeat the Operating Communication and did not request that the issuer reissue the Operating Communication. (R3)

VSL Justifications – COM 003-1, R2	
<p>FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>The most comparable requirement is COM 002-2, R2. Based on the VSL Guidance, the SDT developed two VSLs based on misapplication of three part communication. If the communication did not include the critical steps required for confirmation or for additional repetition, then the VSL is Severe.</p>
<p>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</p>	<p>Guideline 2a:</p> <ul style="list-style-type: none"> • The VSL assignment for R3 is not binary. <p>Guideline 2b:</p> <ul style="list-style-type: none"> • The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.
<p>FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</p>	<p>The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement.</p>
<p>FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations</p>	<p>The VSL is based on a single violation and not cumulative violations</p>
<p>FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs</p>	<p>Non CIP</p>
<p>FERC VSL G6</p>	<p>Non CIP</p>

Project YYYY-##.# - Project Name

VSL Justifications – COM 003-1, R2

VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	
---	--