Project 2007-02 – Operating Personnel Communications Protocols

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-002-4 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.

VRFs for COM-002-4:

There are seven requirements in COM-002-4, draft 2. Requirements R1,R2, and R3 are assigned a "Low" VRF. R1 now reads:"*Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall develop documented communications protocols for its operating personnel that issue and receive Operating Instructions. The protocols shall, at a minimum:"* R2 now reads:" *Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall conduct initial training for each of its operating personnel responsible for the Real-time operation of the interconnected Bulk Electric System on the documented communications protocols developed in Requirement R1 prior to that individual operator issuing an Operating Instruction."* R3 now reads: "*Each Distribution Provider and Generator Operator shall conduct initial training for each of its operating personnel who can receive an oral two-party, person-to-person Operating Instruction prior to that individual operator receiving an oral two-party, person-to-person Operating Instruction to either:"* Requirement R4 is assigned a "Medium" VRF. R4 now reads: *"Each Balancing Authority, Reliability Coordinator, and Transmission Operator shall at least once every twelve (12) calendar months:* This Requirement warrents a VRF of "Medium" because R4 is a requirement in an operations planning time frame 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, a violation of this requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures. *"* Requirement R5, R6 and R7 are assigned a "High" VRF. R5 now reads: "*Each Balancing Authority, Reliability Coordinator, and Transmission Operator that issues an oral two-party, person-to-person Operating Instruction during an Emergency, excluding written or oral single-party to multiple-party burst Operating Instructions, shall either:"* R6 is a new requirement which reads "Each Balancing Authority, Distribution Provider, Generator Operator, and Transmission Operator that receives an oral two-party, person-to-person Operating Instruction during an Emergency, excluding written or oral single-party to multiple-party burst Operating Instructions, shall either:" R7 is a new requirement which reads *"Each Balancing Authority, Reliability Coordinator, and Transmission Operator that issues a written or oral single-party to multiple-party burst Operating Instruction during an Emergency shall confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction."* These Requirements warrant VRFs of "High" because failure to use the communications protocols during an emergency 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.

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, 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.

The drafting team will complete the following table, providing of analysis and justification for each VRF and VSL, for each requirement.

VRF and VSL Justifications – COM-002-4, R1	
Proposed VRF	Low
NERC VRF Discussion	R1 is a requirement in a Long-term 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 The VRF for this requirement is "Low," which is consistent with NERC guidelines.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** R1 establishes communications protocols, which is consistent with FERC guideline G1.
FERC VRF G2 Discussion	**Guideline 2- 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:** This requirement calls for the development of documented communications protocols by entities that will both issue and receive "Operating Instructions" that reduce the possibility of miscommunication which could eventually lead to action or inaction harmful to the reliability of the bulk electric system.
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 " Low," which is consistent with NERC guidelines for similar requirements.
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation:** COM-002-4 Requirement R1 contains only one objective which is to document 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 the bulk electric system. Since the requirement has

VRF and VSL Justifications – COM-002-4, R1			
	only one objective, only one VRF was assigned.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The responsible entity did not specify the instances that require time identification when issuing an oral or written Operating Instruction and the format for that time identification, as required in Requirement R1, Part 1.5 OR The responsible entity did not specify the nomenclature for Transmission interface Elements and Transmission interface Facilities when issuing an oral or written Operating Instruction, as required in Requirement R1, Part 1.6.	The responsible entity did not require the issuer and receiver of an oral or written Operating Instruction to use the English language, unless agreed to otherwise, as required in Requirement R1, Part 1.1. An alternate language may be used for internal operations.	The responsible entity did not include Requirement R1, Part 1.4 in its documented communication protocols.	The responsible entity did not include Requirement R1, Part 1.2 in its documented communications protocols OR The responsible entity did not include Requirement R1, Part 1.3 in its documented communications protocols OR The responsible entity did not develop any documented communications protocols as required in Requirement R1.

VRF and VSL Justifications – COM-002-4, R1			

VRF and VSL Justifications – COM-002-4, R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed four VSLs based on misapplication or absence of common communication protocols, with varied VSLs based on the severity of the potential risk to the bulk electric system if the protocols were not used. If no communication protocols were addressed at all then the VSL is Severe.
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: The VSL assignment for R1 is not binary. 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	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R1.

VRF and VSL Justifications – COM-002-4, R1	
Corresponding Requirement	
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
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	Non CIP

VRF and VSL Justifications – COM-002-4, R2	
Proposed VRF	Low
NERC VRF Discussion	R2 is a requirement in a Long-term 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 The VRF for this requirement is "Low," which is consistent with NERC guidelines.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** R2 establishes that entities who issue and receive Operating Instructions shall conduct initial training with their operating personnel to ensure that all applicable operators will be trained on their documented communication protocols established in Requirement R1. This training reduces the possibility of a miscommunication, which could eventually lead to action or inaction harmful to the reliability of the Bulk Electric System, which is consistent with FERC guideline G1.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard :** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards:** This requirement establishes that each Balancing Authority, Reliability Coordinator and Transmission Operator conduct initial training with each of its operating personnel responsible for the Real-time operation of the BES on documented communication protocols to reduce the possibility of miscommunication which could eventually lead to action or inaction harmful to the reliability of the bulk electric system. This VRF is consistent with other training requirements within the body of NERC Reliability Standards, including CIP-004-5.1 Requirements R1 and R2.
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs:** Violation of the requirement is unlikely to lead to bulk electric system instability, separation, or cascading failures. The VRF for this requirement is "Low," which is consistent with NERC guidelines for similar requirements.

VRF and VSL Justifications – COM-002-4, R2			
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation:** COM-002-4 Requirement R2 contains only one objective which is to conduct initial training for each of its operating personnel responsible for the Real-time operation of the BES. Since the requirement has only one objective, only one VRF was assigned.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	N/A	An individual operator responsible for the Real-time operation of the interconnected Bulk Electric System at the responsible entity issued an Operating Instruction, prior to being trained on the documented communications protocols developed in Requirement R1.	An individual operator responsible for the Real-time operation of the interconnected Bulk Electric System at the responsible entity issued an Operating Instruction during an Emergency prior to being trained on the documented communications protocols developed in Requirement R1.

VRF and VSL Justifications – COM-002-4, R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs. These VSLs were determined based on the potential consequences of an operator issuing an Operating Instruction without having first received training on the communication protocols. An operator who is not trained on the communication protocols could miscommunicate an Operating Instruction, which could put the BES in an undesirable state. This warrants a High VSL. An operator who is not trained on the communication protocols could miscommunicate an Operating Instruction during an Emergency, which could directly put the BES in an undesirable state. This warrants a Severe VSL. Since training requirements were not in prior versions of COM-002, the introduction of this training requirement will not have the unintended consequence of lowering the current level of compliance.
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	Guideline 2a: The VSL assignment is not R2 binary. 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.

VRF and VSL Justifications – COM-002-4, R2	
Ambiguous Language	

VRF and VSL Justifications – COM-002-4, R2	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R3.
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
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account	Non CIP

VRF and VSL Justifications – COM-002-4, R2	
for their interdependence	

VRF and VSL Justifications – COM 002-4, R3	
Proposed VRF	Low
NERC VRF Discussion	R3 is a requirement in a Long-term 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. The VRF for this requirement is "Low," which is consistent with NERC guidelines.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** R3 establishes that entities who only receive Operating Instructions shall conduct initial training with their operating personnel to ensure that all applicable operators will be trained in three part communication. This training reduces the possibility of a miscommunication, which could eventually lead to action or inaction harmful to the reliability of the Bulk Electric System, which is consistent with FERC guideline G1.
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.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards:** This requirement establishes that Distribution Providers and Generator Operators conduct initial training with each of its operating personnel responsible for the Real-time operation of the BES on three part communication to reduce the possibility of miscommunication which could eventually lead to action or inaction harmful to the reliability of the bulk electric system. This VRF is consistent with other training requirements within the body of NERC Reliability Standards, including CIP-004-5.1 Requirements R1 and R2.

VRF and VSL Justifications – COM 002-4, R3			
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs:** Failure to conduct initial training for individual operators on three part communication 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 "Low," which is consistent with NERC guidelines for similar requirements.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation:** COM-002-4 Requirement R3 contains only one objective which to conduct initial training with individual system operators on three part communication. Since the requirement has only one objective, only one VRF was assigned.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	N/A	An individual operator at the responsible entity received an Operating Instruction prior to being trained.	An individual operator at the responsible entity received an Operating Instruction during an Emergency prior to being trained.

VRF and VSL Justifications – COM 002-4, R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs. These VSLs were determined based on the potential consequences of an operator receiving an Operating Instruction without having first received training on the communication protocols. An operator who is not trained on three part communication could miscommunicate an Operating Instruction, which could put the BES in an undesirable state. This warrants a High VSL. An operator who is not trained on three part communication could miscommunicate an Operating Instruction during an Emergency, which could directly put the BES in an undesirable state. This warrants a Severe VSL. Since training requirements were not in prior versions of COM-002, the introduction of this training requirement will not have the unintended consequence of lowering the current level of compliance.
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: The VSL assignment for R3 is not binary. 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.

VRF and VSL Justifications – COM 002-4, R3	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement
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
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account	Non CIP

VRF and VSL Justifications – COM 002-4, R3	
for their interdependence	

VRF and VSL Justifications – COM 002-4, R4	
Proposed VRF	Medium
NERC VRF Discussion	R4 is a requirement in an Operations planning requirement time frame that, if violated, could directly affect the ability to effectively monitor and control the bulk electric system. However, a violation of this 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 G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** This requirement establishes that responsible entities from R1 to periodically assess their operator's adherence to the entity's documented communication protocols and provide feedback to those operators. It also requires entities to assess the effectiveness of these protocols and modify them where necessary. The requirement addresses Recommendation 26 of the Blackout Report. The VRF for this requirement is "Medium," which is consistent with FERC guideline G1.
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.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards:** This requirement calls for responsible entities from R1 to periodically assess their operator's adherence to the entity's documented communication protocols and provide feedback to those operators. It also requires entities to assess the effectiveness of these protocols and modify them where necessary. This VRF is consistent with similar requirements within the body of NERC Reliability Standards, including PER-005-1 Requirements R1 and R2.

VRF and VSL Justifications – COM 002-4, R4			
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs:** R4 is a requirement in an Operations planning requirement time frame that, if violated, could directly affect the ability to effectively monitor and control the bulk electric system. However, a violation of this 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-002-4 Requirement R4 contains only one objective which is to implement 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 the bulk electric system. Since the requirement has only one objective, only one VRF was assigned.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The responsible entity assessed adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions and provided feedback to those operating personnel and took corrective action, as appropriate AND The responsible entity assessed the effectiveness of its	The responsible entity assessed adherence to the documented communications protocols in Requirement R1 by its operating personnel that issue and receive Operating Instructions, but did not provide feedback to those operating personnel OR The responsible entity assessed adherence to the documented communications protocols in	The responsible entity did not assess adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions OR The responsible entity did not assess the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions.	The responsible entity did not assess adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions AND The responsible entity did not assess the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions.

VRF and VSL Justifications – COM 002-4, R4			
documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions and modified its documented communication protocols, as necessary AND The responsible entity exceeded twelve (12) calendar months between assessments.	Requirements R1 by its operating personnel that issue and receive Operating Instructions and provided feedback to those operating personnel but did not take corrective action, as appropriate OR The responsible entity assessed the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel that issue and receive Operating Instructions, but did not modify its documented communication protocols, as necessary.		

VRF and VSL Justifications – COM 002-4, R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed four VSLs to establish the severity of an entity not assessing their operator's adherence to the entity's communications protocols and/or not assessing the effectiveness of those protocols at least once every 12 calendar months. If an entity evaluated the documented communications protocols developed in Requirement R1, but exceeded twelve (12) calendar months between evaluations then it is a "Low" VSL, since the performance or product measured has significant value as it almost meets the full intent of the requirement. If an entity assessed adherence to the documented communications protocols in Requirements R1 by its operating personnel that issue and receive Operating Instructions but did not provide feedback to those operating personnel it is a "Medium" VSL. If an entity assessed adherence to the communications protocols by its operating personnel and provided feedback to those personnel but did not take corrective action, as appropriate, it is also a "Medium" VSL. If an entity assessed the effectiveness of its protocols for its operating personnel but did not modify its documented communication protocols, as necessary, it is also a "Medium" VSL. The value of "Medium" is justified based one significant element (or a moderate percentage) of the required performance is missing but the performance or product measured still has significant value in meeting the intent of the requirement. If an entity did not assess adherence to the documented communications protocols in Requirements R1 by its operating personnel then it is a "High" VSL. If an entity did not assess the effectiveness of its documented communications protocols in Requirements R1 for its operating personnel it is a "High" VSL. The value of "High" is justified because the entity is missing more than one significant element (or is missing a high percentage) of the required performance. If an entity did not assess adherence to the documented communications protocols by its operating

VRF and VSL Justifications – COM 002-4, R4	
	personnel and it did not assess the effectiveness of its documented communications protocols in Requirement R1 for its operating personnel, then it is a “Severe” VSL. The value of “Severe” is justified because the performance measured does not meet the intent of the requirement.

VRF and VSL Justifications – COM 002-4, R4	
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: The VSL assignment for R4 is not binary. 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 the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement.
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

VRF and VSL Justifications – COM 002-4, R4	
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	Non CIP

VRF and VSL Justifications – COM 002-4, R5	
Proposed VRF	High
NERC VRF Discussion	R5 is a requirement in a Real-time Operations time frame 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,

VRF and VSL Justifications – COM 002-4, R5	
	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.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** R5 requires entities who issue an Operating Instruction during an Emergency to use three part communication or take an alternative action if the receiver does not respond. The requirement addresses Recommendation 26 of the Blackout Report. The VRF for this requirement is "High," which is consistent with FERC guideline G1.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard :** The requirement has no sub-requirements and only one VRF was assigned therefore, there is no conflict.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards:** This requirement mandates the use of three part communication for entities that issue Operating Instructions during an Emergency in order to reduce the possibility of miscommunication. A miscommunication could lead to action or inaction harmful to the reliability of the bulk electric system.
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs:** R5 is a requirement in an Operations Planning time frame 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. The VRF for this requirement is "High," which is consistent with NERC guidelines.
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation:** COM-002-4 Requirement R5 contains only one objective which is for entities that issue Operating Instructions to use three part communication or take an alternative action if the receiver does not respond to reduce the possibility of miscommunication which could lead to action or inaction harmful to the reliability of the bulk electric system. Since the requirement has only one objective, only one VRF was assigned.

VRF and VSL Justifications – COM 002-4, R5			
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The responsible entity that issued an Operating Instruction during an Emergency did not take one of the following actions: • Confirmed the receiver's response if the repeated information was correct (in accordance with Requirement R6). • Reissued the Operating Instruction if the repeated information was incorrect or if requested by the receiver. • Took an alternative action if a response was not received or if the Operating Instruction was not understood by the receiver.	N/A	The responsible entity that issued an Operating Instruction during an Emergency did not take one of the following actions: • Confirmed the receiver's response if the repeated information was correct (in accordance with Requirement R6). • Reissued the Operating Instruction if the repeated information was incorrect or if requested by the receiver. • Took an alternative action if a response was not received or if the Operating Instruction was not understood by the receiver. AND Instability, uncontrolled separation, or cascading failures

VRF and VSL Justifications – COM 002-4, R5			
			occurred as a result.

VRF and VSL Justifications – COM 002-4, R5	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs based on the failure to use three part communication when issuing an Operating Instruction during an Emergency. If an entity, when issuing an Operating Instruction during an Emergency, did not use three part communication or take an alternative action if the receiver does not respond, yet instability, uncontrolled separation, or cascading failures did not occur as a result, the entity violated the Requirement with a "Medium" VSL. The value of "Medium" is justified based one significant element (or a moderate percentage) of the required performance is missing but the performance or product measured still has significant value in meeting the intent of the requirement, which is to avoid action or inaction that is harmful to the reliability of the Bulk Electric System. If an entity, when issuing an Operating Instruction during an Emergency, did not use three part communication or take an alternative action if the receiver does not respond, and instability, uncontrolled separation, or cascading failures occurred as a result, the entity violated the Requirement with a "Severe" VSL. The value of "Severe" is justified because the performance outcome does not meet the intent of the requirement.
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	Guideline 2a: The VSL assignment for R5 is not binary. 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.

VRF and VSL Justifications – COM 002-4, R5	
"Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	

VRF and VSL Justifications – COM 002-4, R5	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement
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
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account	Non CIP

VRF and VSL Justifications – COM 002-4, R5	
for their interdependence	

VRF and VSL Justifications – COM 002-4, R6	
Proposed VRF	High
NERC VRF Discussion	R6 is a requirement in a Real-time Operations time frame 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.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** R6 requires entities who receive an Operating Instruction during an Emergency to repeat, not necessarily verbatim, the Operating Instruction and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction. The requirement addresses Recommendation 26 of the Blackout Report. The VRF for this requirement is "High," which is consistent with FERC guideline G1.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard :** The requirement has no sub-requirements and only one VRF was assigned therefore, there is no conflict.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards:** This requirement mandates the use of three part communication for entities that receive Operating Instructions during an Emergency in order to reduce the possibility of miscommunication. A miscommunication could lead to action or inaction harmful to the reliability of the bulk electric system.

VRF and VSL Justifications – COM 002-4, R6			
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs:** R6 is a requirement in an Operations Planning time frame 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. The VRF for this requirement is "High," which is consistent with NERC guidelines.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation:** COM-002-4 Requirement R6 contains only one objective which is for entities that receive Operating Instructions during an Emergency to repeat, not necessarily verbatim, the Operating Instruction in order to reduce the possibility of miscommunication which could lead to action or inaction harmful to the reliability of the bulk electric system. Since the requirement has only one objective, only one VRF was assigned.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The responsible entity did not repeat, not necessarily verbatim, the Operating Instruction during an Emergency and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction when receiving an Operating Instruction.	N/A	The responsible entity did not repeat, not necessarily verbatim, the Operating Instruction during an Emergency and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction when receiving an Operating Instruction

VRF and VSL Justifications – COM 002-4, R6			
			AND Instability, uncontrolled separation, or cascading failures occurred as a result.

VRF and VSL Justifications – COM 002-4, R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs based on the failure of the recipient of an Operating Instruction to use three part communication after receiving an Operating Instruction during an Emergency. If an entity, when receiving an Operating Instruction during an Emergency, did not repeat, not necessarily verbatim, the Operating Instruction during an Emergency and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction when receiving an Operating Instruction, yet instability, uncontrolled separation, or cascading failures did not occur as a result, the entity violated the Requirement with a "Medium" VSL. The value of "Medium" is justified based one significant element (or a moderate percentage) of the required performance is missing but the performance or product measured still has significant value in meeting the intent of the requirement, which is to avoid action or inaction that is harmful to the reliability of the Bulk Electric System. If an entity, when receiving an Operating Instruction during an Emergency, did not repeat, not necessarily verbatim, the Operating Instruction during an Emergency and receive confirmation from the issuer that the response was correct, or request that the issuer reissue the Operating Instruction when receiving an Operating Instruction, and instability, uncontrolled separation, or cascading failures occurred as a result, the entity violated the Requirement with a "Severe" VSL. The value of "Severe" is justified because the performance outcome does not meet the intent of the requirement.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties	Guideline 2a: The VSL assignment for R6 is not binary.

VRF and VSL Justifications – COM 002-4, R6	
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 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – COM 002-4, R6	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement
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
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account	Non CIP

VRF and VSL Justifications – COM 002-4, R6	
for their interdependence	

VRF and VSL Justifications – COM 002-4, R7	
Proposed VRF	High
NERC VRF Discussion	R7 is a requirement in a Real-time Operations time frame 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.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report:** R7 requires entities that issue a written or oral single-party to multiple-party burst Operating Instruction during an Emergency to confirm or verify that the Operating Instruction was received by at least one receiver. The requirement addresses Recommendation 26 of the Blackout Report. The VRF for this requirement is "High," which is consistent with FERC guideline G1.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard :** The requirement has no sub-requirements and only one VRF was assigned therefore, there is no conflict.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards:** This requirement mandates entities that issue a written or oral single-party to multiple-party burst Operating Instruction during an Emergency to confirm or verify that the Operating Instruction was received by at least one receiver . A miscommunication could lead to action or inaction harmful to the

VRF and VSL Justifications – COM 002-4, R7	
	reliability of the bulk electric system.
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs:** R7 is a requirement in a Real-time Operations time frame 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. The VRF for this requirement is "High," which is consistent with NERC guidelines.
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation:** COM-002-4 Requirement R7 contains only one objective which requires entities that issue a written or oral single-party to multiple-party burst Operating Instruction during an Emergency confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction. Since the requirement has only one objective, only one VRF was assigned.

Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The responsible entity that that issued a written or oral single-party to multiple-party burst Operating Instruction during an Emergency did not confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction.	N/A	The responsible entity that that issued a written or oral single-party to multiple-party burst Operating Instruction during an Emergency did not confirm or verify that the Operating Instruction was received by at least one receiver of the Operating Instruction AND

VRF and VSL Justifications – COM 002-4, R7			
			Instability, uncontrolled separation, or cascading failures occurred as a result.

VRF and VSL Justifications – COM 002-4, R7	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs based on the failure of the issuer of a written or oral single-party to multiple-party burst Operating Instruction during an Emergency to confirm or verify that the Operating Instruction was received by at least one receiver. If an entity, when issuing a written or oral single-party to multiple-party burst Operating Instruction during an Emergency, did not confirm or verify that the Operating Instruction was received by at least one receiver, yet instability, uncontrolled separation, or cascading failures did not occur as a result, the entity violated the Requirement with a "Medium" VSL. The value of "Medium" is justified based one significant element (or a moderate percentage) of the required performance is missing but the performance or product measured still has significant value in meeting the intent of the requirement, which is to avoid action or inaction that is harmful to the reliability of the Bulk Electric System. If an entity, when issuing a written or oral single-party to multiple-party burst Operating Instruction during an Emergency, did not confirm or verify that the Operating Instruction was received by at least one receiver, and instability, uncontrolled separation, or cascading failures occurred as a result, the entity violated the Requirement with a "Severe" VSL. The value of "Severe" is justified because the performance outcome does not meet the intent of the requirement.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single	Guideline 2a: The VSL assignment for R7 is not binary. Guideline 2b:

VRF and VSL Justifications – COM 002-4, R7	
Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – COM 002-4, R7	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement
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
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	Non CIP
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account	Non CIP

VRF and VSL Justifications – COM 002-4, R7	
for their interdependence	