

# Violation Risk Factor and Violation Severity Level Justifications

## EOP-010-1 – Geomagnetic Disturbance Operations

This document provides the Standard Drafting Team's (SDT) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in EOP-010-1 – Geomagnetic Disturbance Operations.

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 ERO Sanction Guidelines.

The Standard Drafting Team applied the following NERC criteria and FERC Guidelines when proposing VRFs and VSL 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.

## **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.

**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 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**

FERC’s 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.

VRF Justifications – EOP-010-1, R1

Proposed VRF	Medium
NERC VRF Discussion	Failure to implement a GMD Operating Plan when warranted by conditions could directly affect the electrical state or the capability of the Bulk Electric System (BES). However, failure to implement a GMD Operating Plan is unlikely to lead to BES instability, separation, or cascading failures. The Reliability Coordinator and applicable entities are responsible for maintaining the reliability of the BES under all circumstances. Failure to develop or maintain a GMD Operating Plan could, under anticipated conditions, directly and adversely affect the electrical state or capability of the Bulk Electric System. However, failure to develop or maintain a GMD Operating Plan is unlikely to lead to BES instability, separation, or cascading failures, or to hinder restoration to normal conditions. This VRF reflects the drafting team's view of the importance of having coordinated GMD Operating Procedures and the RC's role in the planning and operations time horizons.
FERC VRF G1 Discussion	Guideline 1- Consistency w/ Blackout Report: N/A
FERC VRF G2 Discussion	Guideline 2- Consistency within a Reliability Standard: The requirement has no sub-requirements so a single VRF was assigned. The requirement uses Parts to identify the items to be included in a GMD Operating Plan. The VRF for this requirement is consistent with Requirement R3 with regard to relative risk.
FERC VRF G3 Discussion	Guideline 3- Consistency among Reliability Standards. A Violation Risk Factor of Medium is consistent with IRO 014-1 Requirement R1, which requires the Reliability Coordinator to have Operating Procedures, Processes, or Plans in place to support interconnection reliability. The drafting team believes the reliability objective of IRO-014-1 Requirement R1 is most comparable to the proposed Requirement R1.
FERC VRF G4 Discussion	Guideline 4- Consistency with NERC Definitions of VRFs. A Violation Risk Factor of Medium is consistent with NERC VRF definition. Failure to implement a GMD Operating Plan when warranted by conditions could directly affect the electrical state or the capability of the Bulk Electric System (BES). However, failure to implement a GMD Operating Plan is unlikely to lead to BES instability, separation,

**VRF Justifications – EOP-010-1, R1**

	<p>or cascading failures. The Reliability Coordinator and applicable entities are responsible for maintaining the reliability of the BES under all circumstances. Failure to develop or maintain a GMD Operating Plan could, under anticipated conditions, directly and adversely affect the electrical state or capability of the Bulk Electric System. However, failure to develop or maintain a GMD Operating Plan is unlikely to lead to BES instability, separation, or cascading failures, or to hinder restoration to normal conditions. This VRF reflects the drafting team's view of the significance of the RC's role in coordinating GMD Operating Procedures in the planning and operations time horizons.</p>
FERC VRF G5 Discussion	<p>Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation. The assigned risk level reflects the most important objective of the requirement.</p>

**Proposed VSLs – EOP-010-1, R1**

Lower	Moderate	High	Severe
<p>The Reliability Coordinator had a GMD Operating Plan, but failed to maintain it.</p>	<p>N/A</p>	<p>The Reliability Coordinator's GMD Operating Plan failed to include one of the required elements as listed in Requirement R1, parts 1.1 or 1.2</p>	<p>The Reliability Coordinator did not have a GMD Operating Plan OR The Reliability Coordinator failed to implement a GMD Operating Plan within its Reliability Coordinator Area</p>

VSL Justifications – EOP-010-1, R1	
NERC VSL Guidelines	Consistent with NERC's VSL Guidelines. The VSL describes degrees of noncompliant performance in an incremental manner.
FEREC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	There is no prior compliance obligation related to the subject of this standard.
FEREC 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.
FEREC VSL G3 Violation Severity Level Assignment Should Be Consistent	The proposed VSL is worded consistently with the corresponding requirement.



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 cumulative number of violations.

<b>VRF Justifications – EOP-010-1, R2</b>	
<b>Proposed VRF</b>	<b>Medium</b>
NERC VRF Discussion	Failure to disseminate forecasted and current space weather information could directly and adversely affect the electrical state or capability of the Bulk Electric System during a GMD event. However, failure to disseminate forecasted and current space weather information is unlikely to lead to BES instability, separation, or cascading failures. The Reliability Coordinator and applicable entities are responsible for maintaining the reliability of the BES under all circumstances. This requirement and VRF reflects the drafting team's view of the significance of consistent space weather information for coordination of GMD Operating Procedures in each Reliability Coordinator Area and maintains responsibility for providing this information on the Reliability Coordinator as established in IRO-005-3.1a.
FERC VRF G1 Discussion	Guideline 1- Consistency w/ Blackout Report: N/A
FERC VRF G2 Discussion	Guideline 2- Consistency within a Reliability Standard: The requirement has no sub-requirements and a single VRF.
FERC VRF G3 Discussion	Guideline 3- Consistency among Reliability Standards. A Violation Risk Factor of Medium is consistent with IRO-008-1 Requirement R3 which requires the Reliability Coordinator to share information with specific entities that are expected to take operational actions when a potential Interconnection

<b>VRF Justifications – EOP-010-1, R2</b>	
	Reliability Operating Limit violation is anticipated. Dissemination of space weather forecast information can be considered a similar information sharing activity with an impact that would not exceed IRO-008-1 Requirement R3.
FERC VRF G4 Discussion	Guideline 4- Consistency with NERC Definitions of VRFs. Failure to disseminate forecasted and current space weather information could directly and adversely affect the electrical state or capability of the Bulk Electric System during a GMD event. However, failure to disseminate forecasted and current space weather information is unlikely to lead to BES instability, separation, or cascading failures. The Reliability Coordinator and applicable entities are responsible for maintaining the reliability of the BES under all circumstances. This requirement and VRF reflects the drafting team's view of the significance of consistent space weather information for coordination of GMD Operating Procedures in each Reliability Coordinator Area and maintains responsibility for providing this information on the Reliability Coordinator as established in IRO-005-3.1a.
FERC VRF G5 Discussion	Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation. This requirement does not co-mingle a higher-risk reliability objective with a lesser- risk reliability objective.

<b>Proposed VSLs – EOP-010-1, R2</b>			
<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
N/A	N/A	N/A	The Reliability Coordinator failed to disseminate forecasted and current space weather information to all functional entities identified as recipients in the Reliability Coordinator's GMD Operating Plan.

**VSL Justifications – EOP-010-1, R2**

<p>NERC VSL Guidelines</p>	<p>Consistent with NERC's VSL Guidelines. The drafting team believes that a single VSL is most appropriate for describing noncompliant performance of the requirement. Dissemination of space weather information will most likely be accomplished using automated communication systems such as all-call or electronic distribution lists. As a result the RC's compliance will be evaluated on a binary basis for implementing a notification system to disseminate space weather information.</p>
<p>FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance</p>	<p>The current level of compliance is not lowered with the proposed VSL. IRO-005-3.1a requirement R3 provided a similar compliance obligation without a FERC-approved VSL.</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</p>	<p>The proposed VSL is written to ensure uniformity and consistency in the determination of penalties.</p> <p>Guideline 2a: The proposed VSL assignment category for a binary requirement is consistent.</p> <p>Guideline 2b: The proposed VSL does not use ambiguous terms, supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>

VSL Justifications – EOP-010-1, R2	
Ambiguous Language	
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 number of violations.

VRF Justifications – EOP-010-1, R3	
Proposed VRF	Medium
NERC VRF Discussion	Failure to implement a GMD Operating Procedure or Operating Process when warranted by conditions could directly affect the electrical state or the capability of the Bulk Electric System (BES). However, this failure is unlikely to lead to BES instability, separation, or cascading failures. The Transmission Operator and other applicable entities are responsible for maintaining the reliability of the BES under within their respective areas in all circumstances. Failure to develop or maintain a GMD Operating Procedure or Operating Process could, under anticipated conditions, directly and adversely affect the electrical state or capability of the Bulk Electric System. However, this failure is unlikely to lead to BES instability,

VRF Justifications – EOP-010-1, R3	
	separation, or cascading failures, or to hinder restoration to normal conditions. This VRF reflects the drafting team's view of the importance of developing and maintaining coordinated and predetermined operating procedures or processes in the planning horizon, and for implementing the operating procedures or processes when conditions warrant in the operations time horizon.
FERC VRF G1 Discussion	Guideline 1- Consistency w/ Blackout Report: N/A
FERC VRF G2 Discussion	Guideline 2- Consistency within a Reliability Standard: The requirement has no sub-requirements so a single VRF was assigned. The requirement uses Parts to identify the items to be included in a GMD Operating Procedure or Operating Process. The VRF for this requirement is consistent with Requirement R1 with regard to relative risk.
FERC VRF G3 Discussion	Guideline 3- Consistency among Reliability Standards. A Violation Risk Factor of Medium is consistent with EOP 001-2.1b, requirement R2.2 which requires the Transmission Operator to develop, maintain, and implement plans to mitigate operating emergencies on the transmission system. Additionally, it is consistent with IRO 014-1 Requirement R1, which requires the Reliability Coordinator to have Operating Procedures, Processes, or Plans in place to support interconnection reliability. Although the functional entities are different, the reliability objective of IRO-014-1 Requirement R1 is comparable to the proposed Requirement R3.
FERC VRF G4 Discussion	Guideline 4- Consistency with NERC Definitions of VRFs. Failure to implement a GMD Operating Procedure or Operating Process when warranted by conditions could directly affect the electrical state or the capability of the Bulk Electric System (BES). However, this failure is unlikely to lead to BES instability, separation, or cascading failures. The Transmission Operator and other applicable entities are responsible for maintaining the reliability of the BES under within their respective areas in all circumstances. Failure to develop or maintain a GMD Operating Procedure or Operating Process could, under anticipated conditions, directly and adversely affect the electrical state or capability of the Bulk Electric System. However, this failure is unlikely to lead to BES instability, separation, or cascading failures, or to hinder restoration to normal conditions. This VRF reflects the drafting team's view of the

**VRF Justifications – EOP-010-1, R3**

	importance of developing and maintaining coordinated and predetermined operating procedures or processes in the planning horizon, and for implementing the operating procedures or processes when conditions warrant in the operations time horizon.
FERC VRF G5 Discussion	Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation. The assigned risk level reflects the most important objective of the requirement.

**Proposed VSLs – EOP-010-1, R3**

<b>Lower</b>	<b>Moderate</b>	<b>High</b>	<b>Severe</b>
The Transmission Operator had a GMD Operating Procedure or Operating Process, but failed to maintain it.	The Transmission Operator's GMD Operating Procedure or Operating Process failed to include one of the required elements as listed in Requirement R3, parts 3.1 through 3.3.	The Transmission Operator's GMD Operating Procedure or Operating Process failed to include two or more of the required elements as listed in Requirement R3, parts 3.1 through 3.3.	The Transmission Operator did not have a GMD Operating Procedure or Operating Process OR The Transmission Operator failed to implement its GMD Operating Procedure or Operating Process.

**VSL Justifications – EOP-010-1, R3**

FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of	There is no prior compliance obligation related to the subject of this standard.
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Compliance	
<p>FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties</p> <p>Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent</p> <p>Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language</p>	<p>The proposed VSL is written to ensure uniformity and consistency in the determination of penalties.</p> <p>Guideline 2a: The proposed VSL is not binary.</p> <p>Guideline 2b: The proposed VSL does not use ambiguous terms, supporting uniformity and consistency in the determination of similar penalties for similar violations.</p>
<p>FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement</p>	<p>The proposed VSL is worded consistently with the corresponding 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 proposed VSL is not based on number of violations.</p>

