

## Standard Development Timeline

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*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed

#### Description of Current Draft

This draft is the first posting of the proposed standard and is being done in conjunction with the posting of the SAR for this project.

Anticipated Actions	Anticipated Date
30-day Formal Comment Period	June 2013
45-day Formal Comment Period with Parallel Initial Ballot	August 2013
Successive Ballot (if needed)	September 2013
Recirculation ballot	November 2013
BOT adoption	November 2013

### Effective Dates

The first day of the first calendar quarter that is six months beyond the date that this standard is approved by applicable regulatory authorities. In those jurisdictions where regulatory approval is not required, the standard shall become effective on the first day of the first calendar quarter that is six months beyond the date this standard is approved by the NERC Board of Trustees, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities.

### Version History

Version	Date	Action	Change Tracking
1	TBD	Project 2013-03	N/A

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

None

## A. Introduction

1. **Title:** Geomagnetic Disturbance Operations
2. **Number:** EOP-010-1
3. **Purpose:** To mitigate the effects of geomagnetic disturbance (GMD) events by implementing Operating Procedures.
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1 Reliability Coordinator
    - 4.1.2 Balancing Authority with a Balancing Authority Area that includes any transformer with high side terminal voltage greater than 200 kV
    - 4.1.3 Transmission Operator with a Transmission Operator Area that includes any transformer with high side terminal voltage greater than 200 kV
5. **Background:**

Geomagnetic disturbance (GMD) events have the potential to negatively impact the reliable operation of interconnected transmission systems. During a GMD event, geomagnetically-induced currents (GIC) may cause transformer hot-spot heating or damage, loss of Reactive Power sources, increased Reactive Power demand, and protection system Misoperation, the combination of which can lead to voltage collapse and blackout.

## B. Requirements and Measures

- R1.** Each Reliability Coordinator shall develop, maintain, and implement a GMD Operating Plan to coordinate GMD Operating Procedures within its Reliability Coordinator Area. At a minimum, the GMD Operating Plan shall include: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*
  - 1.1** A description of activities designed to mitigate the effects of GMD events on the reliable operation of the interconnected transmission system within the Reliability Coordinator Area.
  - 1.2** A process for the Reliability Coordinator to determine that the GMD Operating Procedures of all Transmission Operators and Balancing Authorities in the Reliability Coordinator Area are coordinated and compatible.
- M1.** Each Reliability Coordinator shall have a GMD Operating Plan meeting all the provisions of Requirement R1; and evidence such as a revision history to indicate that the GMD Operating Plan has been maintained; and evidence to show that the plan was implemented such as correspondence with Transmission Operators and Balancing Authorities.
- R2.** Each Reliability Coordinator shall review its GMD Operating Plan at least once every 36 calendar months from the last effective date. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*

- M2.** Each Reliability Coordinator shall have evidence that it has reviewed its GMD Operating Plan within the timeframe of Requirement R2 such as a dated review signature sheet or revision history.
- R3.** Each Transmission Operator and Balancing Authority shall develop, maintain, and implement Operating Procedures to mitigate the effects of GMD events on the reliable operation of its respective system. At a minimum, the Operating Procedures shall include: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*
  - 3.1.** The steps or tasks for the acquisition and dissemination of space weather information to its System Operators.
  - 3.2.** The steps or tasks to be employed by System Operators that are coordinated with its Reliability Coordinator's GMD Operating Plan to mitigate the effects on the system from GMD events.
  - 3.3.** The predetermined trigger conditions for initiating and terminating steps or tasks in the Operating Procedure.
- M3.** Each Transmission Operator and Balancing Authority shall have GMD Operating Procedures meeting all the provisions of Requirement R3.
- R4.** Each Transmission Operator and Balancing Authority shall review its GMD Operating Procedures at least once every 36 calendar months from the last effective date. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*
- M4.** Each Transmission Operator and Balancing Authority shall have evidence that it has reviewed its GMD Operating Procedures within the timeframe of Requirement R4 such as a dated review signature sheet or revision history.
- R5.** Each Transmission Operator and Balancing Authority shall have a copy of its GMD Operating Procedures in its primary control room and any applicable backup control rooms so that it is available to its operating personnel prior to its implementation date. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning]*
- M5.** Each Transmission Operator and Balancing Authority shall have hard copies or electronic copies of its GMD Operating Procedure available for inspection as stated.

## **C. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Enforcement Authority**

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

#### **1.2. Evidence Retention**

The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.

The Reliability Coordinator, Transmission Operator and Balancing Authority shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for 3 years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

**1.3. Compliance Monitoring and Assessment Processes:**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

**1.4. Additional Compliance Information**

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Long-term Planning, Operations Planning	Medium	The Reliability Coordinator failed to maintain a GMD Operating Plan	N/A	The Reliability Coordinator's GMD Operating Plan failed to include one of the elements listed in Requirement R1, parts 1.1 or 1.2.	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
R2	Long-term Planning, Operations Planning	Medium	The Reliability Coordinator reviewed its GMD Operating Plan more than 36 months, but less than 39 months, since the effective date.	The Reliability Coordinator reviewed its GMD Operating Plan more than 39 months, but less than 42 months, since the effective date.	The Reliability Coordinator reviewed its GMD Operating Plan more than 42 months since the effective date.	The Reliability Coordinator did not review its GMD Operating Plan
R3	Long-term Planning, Operations Planning	Medium	The responsible entity failed to maintain GMD Operating Procedures	The responsible entity's GMD Operating Procedures failed to include one element in Requirement R3, parts	The responsible entity's GMD Operating Procedures failed to include two or more elements in Requirement R3, parts	The responsible entity did not have GMD Operating Procedures OR The responsible entity

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				3.1 through 3.3.	3.1 through 3.3.	failed to implement its GMD Operating Procedures.
R4	Long-term Planning, Operations Planning	Medium	The responsible entity reviewed its GMD Operating Procedures and submitted them for approval more than 36 months, but less than 39 months, since the last effective date.	The responsible entity reviewed its GMD Operating Procedures and submitted them for approval more than 39 months, but less than 42 months, since the last effective date.	The responsible entity reviewed its GMD Operating Procedures and submitted them for approval more than 42 months since the last effective date.	The responsible entity did not review its GMD Operating Procedures and submit them for approval.
R5	Long-term Planning, Operations Planning	Medium	N/A	N/A	N/A	The responsible entity did not have copies of its GMD Operating Procedures in its primary control room and all backup control rooms if applicable.

**D. Regional Variances**

None.

**E. Interpretations**

None.

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