

Standard Development Timeline

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

1. The Standards Committee accepted the Standard Authorization Request (SAR) submitted by the Geomagnetic Disturbance Task Force (GMD TF) and approved Project 2013-03 (Geomagnetic Disturbance Mitigation) on June 5, 2013.
2. The draft standard was posted for a 45-day formal comment period and initial ballot from June 26, 2013 through August 12, 2013. The SAR was posted for informal comment during the same period.

Description of Current Draft

This ~~draft~~ is the ~~first~~second posting of the proposed standard ~~and. It is being done in conjunction with the posting of the SAR posted for this project~~ a 45-day formal comment period and additional ballot.

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

Effective Dates

The first day of the first calendar quarter that is six months ~~beyond~~after the date that this standard is approved by an applicable regulatory authorities. In those jurisdictions governmental authority or as otherwise provided for in a jurisdiction where ~~regulatory~~ approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is six months ~~beyond~~after the date this standard is ~~approved~~adopted by the NERC Board of Trustees, or as otherwise ~~made effective pursuant to the laws applicable to such ERO governmental authorities.~~provided for in that jurisdiction.

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 Plans, Processes, and 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~~
 - 4.1.34.1.2 Transmission Operator with a Transmission Operator Area that includes anya power transformer with a high side wye-grounded winding with terminal voltage greater than 200 kV
5. **Background:**

Geomagnetic disturbance (GMD) events have the potential to ~~negatively~~adversely 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~~may result in voltage collapse and blackout.

B. Requirements and Measures

- R1.** Each Reliability Coordinator shall develop, maintain, and implement a GMD Operating Plan ~~to coordinate~~that coordinates 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]*, Same-day Operations, Real-time Operations]
- 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~~review 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 review or revision history to

Rationale and supporting information for Requirement R1: An Operating Plan is implemented by carrying out its stated actions.

Coordination is intended to ensure that operating procedures are not in conflict with one another.

An Operating Plan is maintained when it is kept relevant by taking into consideration system configuration, conditions, or operating experience, as needed to accomplish its purpose.

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~~ as called for in its GMD Operating Plan, such as dated operator logs, voice recordings, or voice transcripts.

- ~~R2. Each Reliability Coordinator shall~~ Each Reliability Coordinator shall review its GMD Operating Plan at least once every 36 calendar months from disseminate forecasted and current space weather information as specified in the the last effective date. Reliability Coordinator's GMD Operating Plan. [Violation Risk Factor: Medium][Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Same-day Operations]
- ~~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~~ Each Reliability Coordinator shall have evidence such as dated review signature sheet operator logs, voice recordings, transcripts, or or revision history electronic communications to indicate that forecasted and current space weather information was disseminated as stated in its GMD Operating Plan.
- ~~R3. Each Transmission Operator and Balancing Authority shall develop, maintain, and implement an~~ Operating Procedures Procedure or Operating Process to mitigate the effects of GMD events on the reliable operation of its respective system. At a minimum, the Operating Procedures Procedure or Operating Process shall include: [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning, Operations Planning, Same-day Operations, Real-Time Operations]
- ~~3.1. The steps~~ Steps or tasks for the acquisition and dissemination of to receive space weather information to its.
- ~~3.2. System Operators.~~
- ~~3.2. The steps or tasks~~ Operator actions to be employed by System Operators that are coordinated with its Reliability Coordinator's GMD Operating Plan to mitigate the effects initiated based on the system from GMD events.
- ~~3.3 The predetermined trigger~~ conditions.
- ~~3.3 The conditions for initiating and terminating steps or tasks in~~ the Operating Procedure or Operating Process.
- ~~M3. Each Transmission Operator and Balancing Authority shall have a~~ GMD Operating Procedures Procedure or Operating Process 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~~

Rationale and supporting information for Requirement R2:

Requirement R2 replaces IRO-005-3.1a, Requirement R3. IRO-005-4 has been adopted by the NERC Board and filed with FERC, and will retire IRO-005-3.1a Requirement R3. If EOP-010-1 becomes effective prior to the retirement of IRO-005-3.1a, Requirement R2 shall become effective on the first day following retirement of IRO-005-3.1a.

Space weather forecast information can be used for situational awareness and safe posturing of the system. Current space weather information can be used for monitoring progress of a GMD event.

The Reliability Coordinator is responsible for disseminating space weather information to ensure coordination and consistent awareness in its Reliability Coordinator Area.

Rationale and supporting information for Requirement R3:

An Operating Procedure or Operating Process is implemented by carrying out its stated actions.

An Operating Procedure or Operating Process is maintained when it is kept relevant by taking into consideration system configuration, conditions, or operating experience, as needed to accomplish its purpose.

~~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 to indicate that the GMD Operating Procedure or Operating Procedures in its primary control room and any applicable backup control rooms so that it is available. Process has been maintained; and evidence 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 show that the Operating Procedure or Operating Process was implemented as stated, called for in its GMD Operating Procedure or Operating Process, such as dated operator logs, voice recordings, or voice transcripts.~~

~~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.~~

~~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” (CEA) 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, and Transmission Operator ~~and Balancing Authority~~ shall keep data or evidence to show compliance as identified below unless directed by its ~~Compliance Enforcement Authority~~ CEA 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~~three 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~~ The CEA 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 Check~~ing~~

Compliance ~~Violation Investigations~~Investigation

Self-Reporting

~~Complaints Text~~

Complaint

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, <u>Same-day Operations, Real-time Operations</u>	Medium	The Reliability Coordinator failed to maintain <u>had</u> a GMD Operating Plan, but failed to maintain it.	N/A	The Reliability Coordinator's GMD Operating Plan failed to include one of the <u>required</u> elements <u>as</u> 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 <u>2</u>	Long-term Planning, Same-day Operations <u>Operations Planning, Real-time Operations</u>	Medium <u>Medium</u>	The Reliability Coordinator reviewed its GMD Operating Plan more than 36 months, but less than 39 months, since the effective date. <u>-N/A</u>	The Reliability Coordinator reviewed its GMD Operating Plan more than 39 months, but less than 42 months, since the effective date. <u>-N/A</u>	The Reliability Coordinator reviewed its GMD Operating Plan more than 42 months since the effective date. <u>-N/A</u>	The Reliability Coordinator <u>The Reliability Coordinator did not review its</u> <u>forecasted and current space weather information as specified in the Reliability Coordinator's GMD Operating</u>

						<u>Plan</u> GMD <u>Operating Plan.</u>
R3	Long-term Planning, Operations Planning, <u>Same-day Operations, Real-time Operations</u>	Medium	The <u>responsible entity</u> <u>Transmission Operator</u> had a <u>GMD Operating Procedure or Operating Process</u> , but failed to maintain <u>GMD Operating Procedures</u> <u>it.</u>	The <u>responsible entity's</u> <u>Transmission Operator's</u> GMD Operating <u>Procedures</u> <u>Procedure or Operating Process</u> failed to include one element in Requirement R3, parts 3.1 through 3.3.	The <u>responsible entity's</u> <u>Transmission Operator's</u> GMD Operating <u>Procedures</u> <u>Procedure or Operating Process</u> failed to include two or more elements in Requirement R3, parts 3.1 through 3.3.	The <u>responsible entity</u> <u>Transmission Operator</u> did not have a <u>GMD Operating Procedures</u> <u>Procedure or Operating Process</u> OR The <u>responsible entity</u> <u>Transmission Operator</u> failed to implement its GMD Operating <u>Procedures</u> <u>Procedure or Operating Process</u> .
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	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.

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			date.			
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.