

Standard PRC-003-1 — Regional Procedure for Analysis of Misoperations of Transmission and Generation Protection Systems

Standard Development Roadmap

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

This proposed standard is the Version 0 PRC-003 modified to include a translation of planning measure III.C.M10, which was not included in the approval Version 0 reliability standards because it required further work.

Development Steps Completed:

1. A SAR was posted from December 2, 2004 through January 7, 2005.
2. The SAC appointed a standard drafting team on January 13, 2005.
3. The drafting team posted its response to SAR comments and all other historical comments on April 19, 2005.
4. Drafting team posted drafts for comment (April 21–June 13, 2005) (September 1–October 15, 2005).
5. The drafting team posted the standards and implementation plan for a 30-day pre-ballot review from December 1–30, 2005.
6. First ballot conducted from January 9–19, 2005.
7. Recirculation ballot was conducted from January 25–February 3, 2006.

Description of Current Draft:

Final draft for board adoption.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Board adoption date.	February 7, 2006
2. Effective date.	May 1, 2006

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.

Misoperation:

- Any failure of a Protection System element to operate within the specified time when a fault or abnormal condition occurs within a zone of protection.
- Any operation for a fault not within a zone of protection (other than operation as backup protection for a fault in an adjacent zone that is not cleared within a specified time for the protection for that zone).
- Any unintentional Protection System operation when no fault or other abnormal condition has occurred unrelated to on-site maintenance and testing activity.

Corrective Action Plan: A list of actions and an associated timetable for implementation to remedy a specific problem.

Protection System: Protective relays, associated communication systems, voltage and current sensing devices, station batteries and DC control circuitry.

Standard PRC-003-1 — Regional Procedure for Analysis of Misoperations of Transmission and Generation Protection Systems

A. Introduction

1. **Title:** Regional Procedure for Analysis of Misoperations of Transmission and Generation Protection Systems
2. **Number:** PRC-003-1
3. **Purpose:** To ensure all transmission and generation Protection System Misoperations affecting the reliability of the Bulk Electric System (BES) are analyzed and mitigated.
4. **Applicability**
 - 4.1. Regional Reliability Organization
5. **Proposed Effective Date:** May 1, 2006.

B. Requirements

- R1. Each Regional Reliability Organization shall establish, document and maintain its procedures for, review, analysis, reporting and mitigation of transmission and generation Protection System Misoperations. These procedures shall include the following elements:
 - R1.1. The Protection Systems to be reviewed and analyzed for Misoperations (due to their potential impact on BES reliability).
 - R1.2. Data reporting requirements (periodicity and format) for Misoperations.
 - R1.3. Process for review, analysis follow up, and documentation of Corrective Action Plans for Misoperations.
 - R1.4. Identification of the Regional Reliability Organization group responsible for the procedures and the process for approval of the procedures.
- R2. Each Regional Reliability Organization shall maintain and periodically update documentation of its procedures for review, analysis, reporting, and mitigation of transmission and generation Protection System Misoperations.
- R3. Each Regional Reliability Organization shall distribute procedures in Requirement 1 and any changes to those procedures, to the affected Transmission Owners, Distribution Providers that own transmission Protection Systems, and Generator Owners within 30 calendar days of approval of those procedures.

C. Measures

- M1. The Regional Reliability Organization shall have procedures for the review, analysis, reporting and mitigation of transmission and generation Protection System Misoperations as defined in R1.
- M2. The Regional Reliability Organization shall have evidence it maintained and periodically updated its procedures for review, analysis, reporting and mitigation of transmission and generation Protection System Misoperations as defined in Requirement 2.
- M3. The Regional Reliability Organization shall have evidence it provided its procedures for the review, analysis, reporting and mitigation of transmission and generation Protection System Misoperations to the affected Transmission Owners, Distribution Providers that own transmission Protection Systems, and Generator Owners as defined in Requirement 3.

D. Compliance

1. **Compliance Monitoring Process**
 - 1.1. **Compliance Monitoring Responsibility**

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NERC.

1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year.

1.3. Data Retention

The Regional Reliability Organization shall retain documentation of its procedures for analysis of transmission and generation Protection System Misoperations and any changes to those procedures for three years.

The Compliance Monitor shall retain any audit data for three years.

1.4. Additional Compliance Information

The Regional Reliability Organization shall demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

2. Levels of Non-Compliance

2.1. Level 1: Procedures were not reviewed and updated within the review cycle period as required in R2.

2.2. Level 2: Procedures did not include one of the elements defined in R1.1 through R1.4.

2.3. Level 3: Procedures did not include two or more of the elements defined in R1.1 through R1.4.

2.4. Level 4: There shall be a level four non-compliance if either of the following conditions exist:

2.4.1 No evidence of Procedures.

2.4.2 Procedures were not provided to the affected Transmission Owners, Distribution Providers that own transmission Protection Systems, and Generator Owners as defined in R3.

E. Regional Differences

None identified.

Version History

Version	Date	Action	Change Tracking
1	December 1, 2005	<ol style="list-style-type: none">1. Changed incorrect use of certain hyphens (-) to “en dash” (–) and “em dash (—).”2. Added “periods” to items where appropriate.3. Changed “Timeframe” to “Time Frame” in item D, 1.2.	01/20/06

Standard PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations

Standard Development Roadmap

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

This proposed standard is the Version 0 PRC-004 modified to include a translation of planning measure III.C.M11, which was not included in the approval Version 0 reliability standards because it required further work.

Development Steps Completed:

1. A SAR was posted from December 2, 2004 through January 7, 2005.
2. The SAC appointed a standard drafting team on January 13, 2005.
3. The drafting team posted its response to SAR comments and all other historical comments on April 19, 2005.
4. Drafting team posted drafts for comment (April 21–June 13, 2005) (September 1–October 15, 2005).
5. The drafting team posted the standards and implementation plan for a 30-day pre-ballot review from December 1–30, 2005.
6. First ballot conducted from January 9–19, 2005.
7. Recirculation ballot was conducted from January 25–February 3, 2006.

Description of Current Draft:

Final draft for board adoption.

Future Development Plan:

Anticipated Actions	Anticipated Date
1. Board adoption date.	February 7, 2006
2. Effective date.	August 1, 2006

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.

No new definitions are proposed for this standard.

Standard PRC-004-1 — Analysis and Mitigation of Transmission and Generation Protection System Misoperations

A. Introduction

1. **Title:** Analysis and Mitigation of Transmission and Generation Protection System Misoperations
2. **Number:** PRC-004-1
3. **Purpose:** Ensure all transmission and generation Protection System Misoperations affecting the reliability of the Bulk Electric System (BES) are analyzed and mitigated.
4. **Applicability**
 - 4.1. Transmission Owner.
 - 4.2. Distribution Provider that owns a transmission Protection System.
 - 4.3. Generator Owner.
5. **Proposed Effective Date:** August 1, 2006.

B. Requirements

- R1.** The Transmission Owner and any Distribution Provider that owns a transmission Protection System shall each analyze its transmission Protection System Misoperations and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for Reliability Standard PRC-003 Requirement 1.
- R2.** The Generator Owner shall analyze its generator Protection System Misoperations, and shall develop and implement a Corrective Action Plan to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for PRC-003 R1.
- R3.** The Transmission Owner, any Distribution Provider that owns a transmission Protection System, and the Generator Owner shall each provide to its Regional Reliability Organization, documentation of its Misoperations analyses and Corrective Action Plans according to the Regional Reliability Organization's procedures developed for PRC-003 R1.

C. Measures

- M1.** The Transmission Owner, and any Distribution Provider that owns a transmission Protection System shall each have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization procedures developed for PRC-003 R1.
- M2.** The Generator Owner shall have evidence it analyzed its Protection System Misoperations and developed and implemented Corrective Action Plans to avoid future Misoperations of a similar nature according to the Regional Reliability Organization's procedures developed for PRC-003 R1.
- M3.** Each Transmission Owner, and any Distribution Provider that owns a transmission Protection System, and each Generator Owner shall have evidence it provided documentation of its Protection System Misoperations, analyses and Corrective Action Plans according to the Regional Reliability Organization procedures developed for PRC-003 R1.

D. Compliance

1. **Compliance Monitoring Process**