



WECC

Misoperations Webinar Series

Session 6 – November 29, 2018

WebEx Chat

Callers will be muted on entry. To ask questions:

1. Chat - Use the chat feature to type in questions. All chat is visible to all attendees.
2. Voice - In the WebEx participant panel click the mute icon to unmute yourself and ask questions
3. Email - Send emails to relaymisops@wecc.biz. Emails will be addressed after today's session.

Objective

Align understanding of how misoperations and operations are defined.

- Look at real-world scenarios to identify common issues
- Explain concepts and provide reference material
- Test concepts on new scenarios

Today's Topics

- Review of Control System/Protection System Interactions
- Overview from NERC and the MIDAS Work Group (MIDASWG) Chair on the draft data reporting Instructions
- Practice polls of Control System/Protection System Interactions

How this will work

Live Examples

- Scenario
- Live Poll
- Explanation
- Questions

Control System/Protection System Interactions 01 (Nov 29)

Question

A 63 device (sudden pressure relay) sent a trip signal to the 86 Lockout. The 86 failed to trip. How many operations and misoperations should be reported?

- A. This is a nonreportable event
- B. Two operations, one of these is a reportable misoperation
- C. One operation, this operation is a reportable misoperation
- D. One operation, no misoperations to report

Control System/Protection System Interactions 01 (Nov 29)

Answer and Explanation

Answer: A. This is a nonreportable event

Explanation: The MIDASWG made the determination that reporting will be based on the initiating element. In this case, the initiating element is considered a control system, therefore is a nonreportable event.

Reference: MIDAS data reporting instructions (pending posting use these slides or the MIDASWG minutes from November 2018). This type of scenario is discussed and will have an example with the explanation.

MIDAS Data Reporting Instructions

MIDAS DRI Structure

- Introduction
 - Who must report
 - Data release guidelines
 - What will be reported
- Chapter 1 – Data Transmittal and Format
 - Transmittal
 - Format
- Chapter 2 – Identifying Composite Protection Systems
 - What is included in a composite protection system
 - What is NOT included in a composite protection system

MIDAS DRI Structure

- Chapter 3 – Systematically Determining Misoperations & CPSOP Counts
 1. Gather and understand all available information
 2. Identify composite protection system operations
 3. Identify composite protection systems that failed to operate
 4. Determine if a misoperation has occurred
 - A. Composite protection system operation meets one of the definitions
 - B. Failure to operate meets one of the definitions
 5. Counting composite protection system operations

MIDAS DRI Structure

- Chapter 4 – Composite protection system operations
 - Definition of composite protection system operation (CPSOP)
 - Notes
 - Reporting CPSOPs involving multiple entities
 - CPSOP field descriptions
 - CPSOP examples
- Chapter 5 – Misoperations
 - Misoperation categories
 - Cause of misoperations
 - Misoperation field descriptions

MIDAS DRI Structure

- Chapter 6 – MIDAS Opt-Out Waivers
- Appendix A – Terms and Definitions
 - NERC Glossary of terms defined terms
- Appendix B – Equations
- Appendix C – Reporting as a multi-region registered entity (MRRE)
- Appendix D – Analyzing misoperations
 - Updating a misoperation
- Appendix E – Examples
- Appendix F – Reporting on tie-lines

Questions

Control System/Protection System Interactions 02 (Nov 29)

Question

A transformer oil level gauge operates as intended, sending a trip signal to the 86 Lockout. The Lockout fails to trip. How many operations and misoperations should be reported?

- A. One operation, this operation is a reportable misoperation
- B. One operation, no misoperations to report
- C. Two operations, one of these is a reportable misoperation
- D. This is a nonreportable event

Control System/Protection System Interactions 02 (Nov 29)

Answer and Explanation

Answer: D. This is a nonreportable event

Explanation: The MIDASWG made the determination that reporting will be based on the initiating element. In this case, the initiating element is considered a control system, therefore is a nonreportable event.

Reference: MIDAS data reporting instructions (pending posting use these slides or the MIDASWG minutes from November 2018). This type of scenario is discussed and will have an example with the explanation.

Control System/Protection System Interactions 03 (Nov 29)

Question

A transformer fails, the differential relay sends a trip to a 86 lockout. The lockout fails to operate. At the same time an overcurrent relay sends a trip to a different 86 lockout which operates correctly to interrupt the fault. How many operations and misoperations should be reported?

- A. One operation, this operation is a reportable misoperation
- B. This is a nonreportable event
- C. Two operations, one of these is a reportable misoperation
- D. One operation, no misoperations to report

Control System/Protection System Interactions 03 (Nov 29)

Answer and Explanation

Answer: D. One operation, no misoperations to report

Explanation: The differential and overcurrent relays are both part of the composite protection system. The lockout device for the differential relay did not operate correctly; however, the overcurrent relay isolated the fault. While an element of the composite protection system failed the total composite protection system operated as intended.

Reference: Composite Protection System definition – [PRC-004-5.1\(i\) – Application Guide page 16](#)

Questions?

Coming Soon

- Slides and information from today's call
 - posted here:
<https://www.wecc.biz/PerformanceAnalysis/Pages/Misoperations.aspx#webinars>
- To be added to the misops mailing list
 - send a request to support@wecc.biz
- Work with NERC and the MIDASWG to determine webinar schedule for 2019
 - Information will be sent to misops mailing list