



## **Draft Minutes of the Protective Relay Subgroup Meeting**

### **Hybrid: St. Paul, MN and Webex**

*Tuesday, June 27, 2023, 9:00 a.m. to 3:01 p.m. Central*

*Notice for this meeting was electronically posted to the [MRO website](#) on May 30, 2023.  
A final agenda, including advanced reading materials, was also posted on June 20, 2023.*

#### **1. Call to Order and Determination of Quorum**

Protective Relay Subgroup (PRS) Chair Ryan Einer called the meeting to order at 9:00 a.m. Einer welcomed everyone and roundtable introductions were made. Rebecca Schneider, Reliability Analysis Administrator, advised the chair that a quorum of the PRS was present. A complete list of attendees is included as [Exhibit A](#).

#### **2. Standards of Conduct and Antitrust Guidelines**

Pursuant to Policy and Procedure 4, MRO Manager of Reliability Performance, Jake Bernhagen highlighted MRO's Standards of Conduct, Conflict of Interest, and Antitrust Guidelines.

#### **3. Safety Briefing**

Bernhagen gave a safety briefing for in-person attendees which included information regarding emergency exits, evacuation procedures, and the location of the automated external defibrillator (AED).

#### **4. Chair's Remarks**

Chair Einer highlighted two items on today's agenda: the Commissioning Lessons Learned presentation by Les Wolf from Xcel Energy and the Relay Automation Demonstration by Kasey Borboa from Minnkota Power Cooperative.

#### **5. Consent Agenda**

The PRS reviewed the consent agenda, which included minutes from the March 14, 2023 meeting.

*[Upon a motion duly made and seconded, the PRS approved the consent agenda in its entirety.](#)*

#### **6. NERC Activities**

*Update on NERC System Protection and Control Working Group (SPCWG).*

Lynn Schroeder, MRO representative on the NERC SPCWG, shared that the position paper related to FERC Order 881 was endorsed by the Reliability and Security Technical Committee (RSTC) at the June 21-22, 2023 meeting. The SPCWG will discuss plans to roll out the position paper to industry at their next meeting on August 10, 2023. Schroeder noted that the SPCWG is still working on the Technical Reference related to maintenance for ethernet based protection and control (P&C). Project 2019-04 Modifications for PRC-005-6 is now open for formal comment. Discussion ensued.

*NERC Misoperation Information Data Analysis System User Group (MIDASUG) Update.*

Bernhagen was unable to attend the last MIDASUG meeting on May 2, 2023, but notes from the meeting were provided. Jack Norris from NERC discussed the MIDAS section of the NERC 2023 State



of Reliability (SOR). Generally, ERO-wide there is a downward trend in the number of misoperations. The impact score was rolled out and applied to the last five years of misoperations data. There was discussion about Section 1600 revisions for MIDAS submittals, possibly removing some fields. Bernhagen noted that the PRS would begin utilizing the misoperations impact score during the misoperations review next quarter. There was discussion around misoperations training.

#### *Transmission Availability Data System (TADS).*

John Grimm, MRO Principal Systems Protection Engineer, provided an update on TADS. There may be an update to the TADS data reporting instructions (DRI). Grimm noted that changes need to be made to the process when inventory is updated for shared facilities.

### **7. PRS Business**

#### *Updates.*

There were no notable business updates since the last quarterly meeting.

#### *Action Item List Review.*

Chair Einer reviewed the action item list and updates were made accordingly. An action item was added for Bernhagen to reach out to Eric Udren regarding a potential technical presentation at the third quarter PRS meeting. The topic is maintenance for ethernet based P&C.

### **8. 2023 Meeting Dates**

Chair Einer reviewed the proposed 2023 meeting dates for the PRS and the other councils and subgroups. Einer noted the upcoming MRO CMEP Conference in St. Paul, MN on July 25-26, 2023 and the MRO Security Conference on September 26-27, 2023 in Oklahoma City, OK.

### **9. Commissioning Lessons Learned – Xcel Energy**

Les Wolf, Manager, Substation Commissioning Engineering, Xcel Energy, gave a presentation on misoperations – commissioning lessons learned. Several recent misoperations were reviewed, including the event description, cause of the misoperation, and notes on how the misoperation could have been prevented. A summary of Xcel Energy's best practices was also shared. Discussion ensued.

### **10. Relay Automation Demonstration**

Kasey Borboa, Engineering Manager, Minnkota Power Cooperative, performed a live demonstration of relay automation software (Siemens CROSSBOW) currently being utilized by his organization. Some uses of the software include event retrieval, password management and CIP compliance. Discussion ensued.

### **11. Misoperations**

#### *2023 Update, Review and Discussion*

Bernhagen provided a summary of the 2022 misoperations data. "Incorrect settings" was the largest contributing factor for misoperations by cause in 2022. Bernhagen solicited feedback from the entities regarding what type of misoperations data they would find beneficial. Bernhagen will develop misoperation summary sheets by entity for the third quarter meeting. A member suggested revisiting



the Protection System Misoperation White Papers prepared by the Protective Relay Subcommittee in 2016 – 2017. Discussion ensued.

Bernhagen reviewed NERC's 2023 State of Reliability (SOR) and highlighted areas of interest for the group. He also shared misoperations information and tools located on the WECC website.

#### *2023 ERO Misoperation Workshop Update*

Bernhagen shared a draft agenda of the NERC ERO Misoperation Workshop scheduled for October 25-26, 2023 in Atlanta, GA.

### **12. PRS Roundtable Discussion**

Chair Einer invited member participants to share other relevant industry observations. Topics discussed included, out-of-step protection for generators, system protection modeling of directional overcurrent elements during loss of potential (LOP) conditions, and transformer gage malfunctions.

### **13. Q1 2023 Misoperations Review**

#### *Breakout Sessions*

The PRS members reviewed the first quarter 2023 misoperations in breakout sessions both in-person and via Webex. Discussion ensued.

### **14. Other Business and Adjourn**

Having no further business to discuss, the meeting was adjourned at 3:01 p.m.

**Prepared by:** Rebecca Schneider, Reliability Analysis Administrator

**Reviewed and Submitted by:** Jake Bernhagen, Manager of Reliability Performance



## Exhibit A – Meeting Attendees

Subgroup Members Present	
Name	Company
Ryan Einer, Chair	Oklahoma Gas & Electric
Dennis Lu, Vice Chair	Manitoba Hydro
Alex Bosgoed	Saskatchewan Power Corporation
Casey Malskeit	Omaha Public Power District
Cody Remboldt	Montana-Dakota Utilities
David Weir	Western Area Power Administration
Derrick Schlangen	Great River Energy
Glenn Bryson	American Electric Power
Greg Hill	Nebraska Public Power District
Greg Sessler	American Transmission Company
Jeff Beasley	Grand River Dam Authority
Josh Erdman	Xcel Energy
Lynn Schroeder	Sunflower Electric Power Corporation
Sarah Marshall	Alliant Energy
Scott Paramore	Kansas City Board of Public Utilities
MRO Staff Present	
Name	Title
Jake Bernhagen	Manager of Reliability Performance
Rebecca Schneider	Reliability Analysis Administrator
Shawn Keller	Outreach Coordinator
John Grimm	Principal Systems Protection Engineer
Max Desruisseaux	Senior Power Systems Engineer
Mark Tiemeier	Principal Technical Advisor



Other Attendees	
Name	Company
Les Wolf	Xcel Energy
Matthew Wyatt	Liberty Utilities
Catherine Jacobs	MidAmerican Energy Company
David Oswald	Liberty Utilities
Dylan Underwood	Southwestern Power Administration
Kasey Borboa	Minnkota Power Cooperative
Kevin Thompson	ITC
Shannon Bellinghausen	Xcel Energy
Tyler Porter	Great River Energy
Terry Volkmann	Glencoe Light and Power