



Reliability Subcommittee (RSC)

Conference Call

September 30, 2021

10:00 am – 1:50 pm ET / 9:00 am – 12:50 pm CT

Dial-in and WebEx information available at www.misoenergy.org

Minutes

1. Administrative Items (R. McCausland)

a. Call to Order / Roll Call

The meeting was called to order at 10:00am ET/9:00am CT.

The Public Meeting Announcement was referenced.

Chair: Ray McCausland

Vice Chair: Todd Sarkinen

MISO Liaison: JT Smith

Stakeholder Relations: Mandi McGirr

Participants:

Adam Renfandt, NDSG

Adam McKinnie, MO PSC

Alex Monn, MISO

Allie Gavin, ITC

Amanda Hosch, MEC

Amber Joyce, MDU

Amy Thurmond, MISO

Andrew Kienitz, MN Power

Andy Witmeier, MISO

Anita Collier, ACES

Anita Hurst, MISO

Art Iler, IN OUCS

Ben Sloan, OMS

Bob German, DTE

Bob Rafferty, Iowa Clean Energy

Bobbi Welch, MISO

Brandon D. Morris, MISO

Brandon Stefano, NIPSCO

Brian Giggee, MDU

Brian Kiefer, MISO

Brock Ondayko, AEP

Bryan Garnett, Duke

Bryan Harper, Cleco

Carrie Milton, Potomac

Economics

Chelsea Lisowe, WPPI

Chris Bellefy, MN Power

Chris Miller, FERC

Chris Norton, AMP

Chris Plante, WEC

Chris Riley, DPC

Christopher Moody, Entergy

Chuck Hansen, MISO

Clark Kaml, Power Systems

Cynthia Crane, ITC

Dan Custer, MEC

Darren Kearney, SD PUC

Darrin Lahr, MISO

Dave Harlan, Veriquest

Dave Johnston, IN URC

David Cullum, ATC

David Hastings, MICS

David Sapper, CES

Denise Keys, OTP

Derek Mosolf, MISO

DeWayne Todd, Alcoa

Dustin Lewis Eichholt, Entergy

Ed Achaab, AEP

Eileen King, MISO

Elmer Pallok, NIPSCO

Gail Elliott, ITC

Jamie Stallman, GRE

Jason Burki, Alliant Energy

Jason Mazigian, BEPC

Jay Rasmussen, Duke

Jeff Baker, Duke

Jeff Wernert, The Prime Group

Jeff Minks, MISO

Jeremi Wofford, Ameren

Jeremy Gaumer, MEC

John Thomasen, MGE

John Wachtler, MN PUC

Joshua Spalding, AES

Judy Lindholm, APSC

Justin Stewart, Ameren

Kari Hassler, Xcel

Katelynn Cadwallader, Entergy

Ken Kagy, CFU

Ken Schlimgen, DPC

Kevin Kingsley, MDU

Kimberly Dunning, Center Point Energy

Kristin Swenson, MISO

Kurt Vanderlick, Cleco

Kurt Zala, Appian Way

Lane Sisung, SiSung

Leslie Hamby, Center Point Energy

Leslie Krawczyk, Reliability First

Lisa Ehrichs, Duke

Marcus Dethloff, NDSG

Marcus Hawkins, OMS

Marlene Parsley, Big Rivers

Mary Long, CMS

Mary Morrison, Xcel

Mason Lester, IHS Markit

Megan Wisersky, MGE

Michael Dantzler, MISO

Michael Mattox, MISO

Michael Morrow, MISO

Michael Samson, DTE

Michaela Flagg, MISO

Mike Harmon, Ameren

Mike Schowalter, Fresh Energy

Miles Taylor, NIPSCO

Mitch Myhre, Alliant Energy

Natalie McIntire, CGA

Noel Darce, LA PSC

Oliver Burke, Entergy

Pablo Ruiz, New Grid Inc

Paul Luukkonen, CES

Peg Abbadini, HE

Presley Reed, Dentons

Rhonda Peters, Intertranec

Richard Bendish, MDU

Robert Fox, NIPSCO

Robert Francis, Entergy

Robert Hirschak, Cleco

Robert Vosberg, LPSC Staff

Roberto Paliza, Paliza Consulting

Ryan Wernette, WPSCI

Ryan Yeoman, MI PSC

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Savannah Miller, MISO
 Sdunbar, LUS
 Steve Swan, MISO
 Stewart Dover, LUS
 Tag Short, MISO
 Ted Kuhn, CES
 Terry Jarrett, MJMEUC

Terry Volkman, GLP
 Tia Elliott, Cleco
 Tom Butz, Power Systems
 Tom Weeks, MPPA
 Tony Rowan, MISO
 Trevor Hines, MISO
 Trey Mayeux, Cleco

Valy Goepfrich, WPPI
 Ven Bujimalla, IA IUB
 Weili Yi, Appian Way
 Werner Roth, PUCT
 Zhaoxia Xie, MISO

b. Review Agenda

The agenda was reviewed and accepted as posted.

c. Review Meeting Minutes / Action Items

The minutes were reviewed and accepted as posted.

Action Item	Owner	Date	Status
Cancel 8/26 RSC Meeting – update website and send notice to RSC distribution list	MISO	07/29/2021	Closed
Item 08 – update slide 6 and repost; parallel ops for MCS/DSRI open until August 12, 2021	MISO	07/29/2021	Closed

d. Review RSC Management Plan

The management plan was reviewed.

e. AFC Open Reports (post only)

2. Status Reports and Other Updates

a. Liaison Report (J. Smith)

- Operations Monthly Review (July and August) - Mr. Smith provided an overview of load, performance, and highlights of notable days from the Operations Monthly Report for July and August. MISO’s reliability, markets and operational functions performed well in July and August 2021. For more details on Monthly Operations, please reference the Monthly Ops Report links in the Liaison Report posted with meeting materials.
- Summer Review / Fall Readiness - Consistent with the summer assessment, MISO experienced several tight operating days, while reliability, markets and operational functions performed well this summer. Available resources are projected to meet demand under probable fall conditions, with a high likelihood of needing to access emergency resources.
- RS Report – posting of the RS Reports was discontinued at the end of August 2021, same information is available in the Market Reports
- Resource and Availability (RAN) IR025 Update - MISO is delaying the filing to provide stakeholders additional time to better understand the proposal and respond to remaining questions. MISO plans to file by December 1, 2021 to enable stakeholders and systems readiness for Planning Year 2023-24.
- GridEx is scheduled for November 16-17, 2021
- Upcoming Workshops:
 - Distributed Energy Resource (DER): MISO Coordination Framework – October 11
 - Long Range Transmission Planning (LRTP) Workshop - October 19
 - Relevant Electric Retail Regulatory Authorities (RERRA): O222 Coordination – October 22
 - Winter Readiness Workshop (Winter 2021-22) – October 26
 - Short Term Reserve Workshop – November 2, Contact: Bill Peters

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b. Steering Committee Update* (R. McCausland)

RSC Chair McCausland provided an update on the Steering Committee (SC). The SC last met on August 19, 2021. Next meeting is November 8, 2021. *There will be a Stakeholder Guide Workshop on October 21, 2021.

c. Reliable Operations Working Group – Closed (ROWG-CLOSED)* (T. Sarkinen)

ROWG-Closed Chair Sarkinen provided an update on the ROWG-Closed. The ROWG-Closed last met on September 29, 2021.

Topics addressed in the last meeting:

- FAC-011 Task Team – This task team has an initial SOL definition that will be circulated for review in the task team and then to the ROWG-Closed.
- Operational Planning Studies User Group (OPSUG) – This group is working on the process to inventory Transmission Operators (TOP) transient voltage criteria that can be used in transient stability studies, also coordinating with the modeling groups.
- FirstNet – MISO is transitioning mobile phones and FirstNet is a mobile communication solution used by first responders.
- AFC & Pi Rule/Ci Rule – The results were posted and discussed for two annual studies.
- Reconfiguration Request – ROWG-Closed and MISO are engaging on this issue regarding concerns with reliability and logistics.

d. System Restoration and Reliability Training Working Group (SRRTWG)* (D. Farler)

The SRRTWG last met on August 4, 2021. Next meeting is November 3, 2021.

3. System Restoration and Reliability Training Working Group (SRRTWG) (A. Hurst)

Survey Results

MISO reviewed the survey results with the group. The SRRTWG exists to provide a forum to discuss System Operator Training, Resiliency, Emergency Preparedness and Power System Restoration. MISO shared that this group has suffered from very low engagement, resulting in duplicative efforts for MISO and the co-chairs. The results of the survey reinforced low engagement and support for other methods of achieving the working group's outcomes. MISO proposed a new solution to meet the objectives.

The proposal included for the MISO Technical Development Team to:

- Leverage data from Training Needs Analysis to plan training opportunities for members
- Partner with member Drill Coordinators on emergency preparedness drills and exercises (including design of the drills)
- Report regularly to the RSC with updates on training related topics

MISO recently invited drill coordinators to participate in a DTS refresh session to prepare for the upcoming Member Drill. The group discussed the requirements for drill participation. The group inquired about Power System Restoration (PSR). MISO reminded the RSC that the system restoration plan itself lives with the RSC and that the SRRTWG focuses on the training that connects to the plan. The group acknowledged that they do not currently have a solution to the low engagement of the SRRTWG and agreed to continue discussing next steps. The RSC Chair may seek advice from the Steering Committee.

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4. FERC Update* (C. Miller)

Quarterly Update

Mr. Miller provided an update on FERC. The Annual Commissioner led Technical Conference was at FERC on September 30, 2021. On September 23, 2021, the FERC, NERC staff reviewed 2021 winter freeze and recommend improvements (Docket No. AD21-28). Chairman Glick, Commissioners discuss FERC's role in Nation's Energy Transformation before the Senate Energy and Natural Resources Committee on September 28, 2021. FERC sets first Federal-State Transmission Task Force meeting for November 10, 2021 at NARUC in Louisville (Docket No. AD21-15). The next FERC open meeting is October 21, 2021 and it will be held virtually.

5. Standards and Assurance Update (M. Morrow)

Discuss emerging standards development projects & current FERC, NERC & NAESB activities

MISO provided an update on FERC, NERC, NAESB activities, upcoming enforcement dates, and conferences and webinars. FERC issued the preliminary findings on the joint inquiry with FERC and NERC into extreme weather operations and regional power outages (due to the Cold Weather) on September 23, 2021. MISO discussed NERC Projects that are currently out for comment or ballot. for generator owners and operators is Project 2020-03 Supply Chain Low Impact Revisions that will address compensation and suggested enhancements to natural gas industry and infrastructure.

6. NERC Lessons Learned

a. Cold Weather Operation of SF₆ Circuit Breakers (M. Mattox)

MISO reviewed the NERC Lesson Learned for SF₆ Circuit Breakers in Cold Weather. Cold weather operation of breakers is a recurring issue that has caused challenges on the Bulk Electric System (BES). MISO discussed the potential impacts to BES reliability and several mitigation options.

b. Review 2022 Schedule & Available Lessons Learned for Review* (M. Morrow)

MISO will provide the 2022 list in December 2021. Please reach out to Mike Morrow at MISO if there is a topic you would like covered.

7. Cold Weather Standards* (Peg Abbadini (HE))

Discussion of start-up temperatures

The group discussed the cold weather standards and an example of the temperature dropping below the starting temperature of equipment. The RSC Chair recommended that this topic (along with other extreme operations situations) would be a good fit to be discussed at the ROWG-Closed.

8. Hurricane Ida Overview (T. Hines)

Provide a review of the impacts of Hurricane Ida and recovery

MISO provided a summary of operations during Hurricane Ida. Hurricane Ida made landfall at approximately 11:55 a.m. (Central) Sunday, August 29, 2021 near Port Fourchon, Louisiana, as a strong Category 4 storm, causing extensive damage to distribution and transmission systems in Southeastern Louisiana. Conservative Operations were in effect from August 29 - September 10, 2021 to operate through the storm and subsequent restoration.

MISO is prepared to ensure reliability during emergency and abnormal operating situations, including hurricanes. MISO was well positioned for Hurricane Ida through on-going actions and leveraging operating procedures before and during the storm. Hurricane Ida made landfall August 29, 2021 as a strong Category 4 storm, causing extensive damage to transmission and distribution as it moved through the MISO footprint. Hurricane Ida caused extensive damage due to the location of its path, and the response may have taken longer if corrective actions had not been implemented from previous storms. The storm cut through a significant transmission corridor, severing all ties from MISO into much of the Amite South and all the Downstream of Gypsy import constrained load pocket. Damage was felt across an already transmission limited area and required the redefinition of Reserve

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Zone 6 to include Baton Rouge, LA. The timeline of the hurricane can be found in the posted presentation. MISO shared that more transmission lines have returned than are reflected in the posted presentation. MISO thanked the South Region stakeholders for all their hard work throughout Hurricane Ida.

9. MISO Congestion Management Process (MSC/RSC Action Item) (J. Netherton/T. Hines)
Overview of the tools available to MISO to manage transmission issues on the system

MISO reviewed the tools available for Reliability Coordinators to manage congestion. Security Constrained Economic Dispatch (SCED) is the most used tool to manage congestion. Load Shed is a last resort. MISO collaborates with Transmission Operators (TOPs) and Local Balancing Authorities (LBAs) to mitigate congestion. MISO discussed the operator awareness tools used for MISO congestion management. System Operators must take into consideration the effectiveness of a control action when mitigating congestion or disturbances on the system. Disturbances may occur that require the use of one or multiple Control Actions available for MISO congestion management. MISO provided a background of what MISO monitors and how MISO collaborates and reviewed the tools and mitigation actions.

10. Application of Forecasted and Real-time Ambient Adjusted (RSC-2018-54A) (B. Kiefer)
Brief update on AAR implementation

MISO reviewed the process and activity around Ambient Adjusted Ratings (AARs). MISO has seen AAR usage increase over the last year. MISO and its Transmission Owners (TOs) continue to collaborate on identifying AAR candidates. MISO TOs have reviewed 1030 transmission elements. MISO will be sharing detailed results of the MISO-TO AAR identification process at an upcoming RSC meeting. Once a quarter, MISO will compile a list from over the last two years and provide it to the Transmission Operating Committee to determine if the elements are technically feasible for AARs and then they share that *information* with MISO. MISO and the TOs have completed two quarterly cycles since this process started and should have another quarterly review completed when detailed results are shared. The group discussed the definition of AARs. MISO will add the topic to the Management Plan for future discussion.

11. Order 2222 Distributed Energy Resources (DER) (IR070) (K. Swenson and S. Swan)
Provide overview of Order 2222 and introduce MISO's thoughts on DER communication for participation in the wholesale market

MISO reviewed the O2222 progress at MISO and introduce MISO's initial thoughts on operational coordination for O2222. MISO will make a compliance filing with FERC by April 18, 2022.

There are several challenges to address:

- Coordination between and among RTO/ ISOs, RERRAs, distribution companies, and DERAs must be clear to all parties and have transparent and well-established communications to **ensure system reliability** and prevent double counting.
- Measurement and verification will take considerable thought; distribution operations and transmission **operations must be assured visibility**.
- The distribution system is designed to be more dynamic than the transmission system, and routine switching operations will make the "path" between the DERs and the Bulk Electric System difficult to ascertain – especially important if DERA can inject energy.

Discussions will continue at the DER Task Team (DERTF).

12. New Operator Interface Design and Functionality (MCS Rewrite) (J. Minks)
Discuss next phase of MCS update

MISO is moving into the next phase of updating the MCS to create a new Operator-to-Operator Interface. MISO is looking for multiple volunteer entities to make their operators available to provide

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feedback on the new designs and functions of the software. MISO is looking for Volunteer Entities to make Operators available for Design and Functional Feedback, Particularly those LBA entities. MISO will look to engage through multiple Usability Sessions. This will take on a similar approach to that which DSRI initiated.

MISO discussed the benefits of the next phase of MCS Re-Visioning.

MISO currently working on developing the Roadmap for the effort which will include: New Designs, New Functionality, and Planning out Usability Sessions
 MISO will also continue to work with stakeholders to identify enhancements to the application through periodic outreach. The outreach will include Status Updates and Design Changes through the MAUG monthly. Next MISO Applications Users Group (MAUG) on October 21, 2021 @ 2-3pm ET/1-2pm CT

13. New Business (All)

None

14. Action Items (M. McGirr)

Action Item	Owner	Date	Status
Management Plan <ul style="list-style-type: none"> ○ Application of Forecasted and Real-time Ambient Adjusted (RSC-2018-54A)/AAR implementation – add to October 	MISO	09/30/2021	Open
Liaison Report – add link to August Monthly Ops Report and repost	MISO	09/30/2021	Closed
SRRTWG – will need more discussion, RSC Chair may seek advice from the Steering Committee	RSC Chair	09/30/2021	Open

15. Adjournment

The meeting adjourned at 1:37 pm ET / 12:37 pm CT

Next Meeting: October 28, 2021

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