

MDAG MINUTES
September 21, 2023

SOUTHWEST POWER POOL
MODEL DEVELOPMENT ADVISORY GROUP MEETING

September 21, 2023 9:00 am – 12:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** SPP staff to follow to have someone from SPP operations to discuss the FERC 841 process and plans for the future.
- **Action Item:** SPP staff committed to getting the RR452 request form posted to spp.org and the MDAG manual updated.

Motions:

- **Motion:** Steve Hohman motioned to approve the amended agenda as presented. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Scott Schichtl motioned to approve August 17, 2023, meeting minutes as presented. Preston Blinsky seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.
- **Motion:** Jesse Kreutzfeldt motioned to approve the 2024 MDAG meeting schedule as amended. John Vara seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Steve Hohman motioned to approve the 2024 MDAG FG meeting schedule as presented. Preston Blinsky seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Jason Shook motioned to approve the 2023 Series MDAG Dynamics model build contingent upon the final updates being applied. Alex Mucha seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed unanimously.

MDAG MINUTES
September 21, 2023

SOUTHWEST POWER POOL
MODEL DEVELOPMENT ADVISORY GROUP MEETING

September 21, 2023 9:00 am – 12:00 pm (CST)

Conference Call

MINUTES

AGENDA ITEM 1 – ADMINISTRATIVE ITEMS

AGENDA ITEM 1A & 1B – CALL TO ORDER AND ANTITRUST STATEMENT

SPP MDAG Chair, John Turner, called the meeting to order at 9:02 a.m. (CST) with Quorum. SPP Staff Secretary Proxy, Eric Sullivan, read the anti-trust statement to the group.

MDAG MINUTES
September 21, 2023

AGENDA ITEM 1C & 1D – ATTENDANCE AND PROXIES

The following members attended or were represented by proxy:

MDAG Member	Present	Proxy	Present	Company
Tyler Baxter	Yes		X	Corn Belt Power Cooperative
Jerry Bradshaw	Yes		X	City Utilities of Springfield
Dustin Betz	Yes		X	Nebraska Public Power District
Preston Blinsky	Yes		X	Basin Electric Power Cooperative
Joe Fultz	Yes		X	Grand River Dam Authority
Brianna Haug	Yes		X	Western Area Power Administration, MDAG Vice-Chair
Steve Hohman	Yes		X	Omaha Public Power District
Reené Miranda	No	Mae Cruz	X	Southwestern Public Service
Alex Mucha	Yes		X	Oklahoma Municipal Power Authority
Scott Rainbolt	Yes		X	American Electric Power
Scott Schichtl	Yes		X	Arkansas Electric Cooperative Corporation
Jason Shook	Yes		X	GDS Associates
Liam Stringham	Yes		X	Sunflower Electric Power Corporation
John Turner	Yes		X	Western Farmers Electric Power, MDAG Chair
Lottie Jones	Yes	Eric Sullivan	X	Southwest Power Pool, Inc., MDAG Secretary
John Vara	Yes		X	Golden Spread Electric
Ryan Baysinger	No		X	Evergy
Jesse Kreutzfeldt	Yes		X	Missouri River Energy Services

Material: SEP21_Attach2 - 1c. MDAG Conference Call Attendance-09-21-2023

MDAG MINUTES
September 21, 2023

AGENDA ITEM 1E – AGENDA REVIEW (**APPROVAL ITEM**)

John Turner, MDAG chair, asked the group if they had a chance to review the agenda and if the group had any modifications to the agenda.

Motion: Steve Hohman motioned to approve the amended agenda as presented. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: SEP21_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS AUGUST 17, 2023 MEETING MINUTES (**APPROVAL ITEM**)

Eric Sullivan asked the group if they had any proposed changes for the previous August 17, 2023, meeting minutes.

Motion: Scott Schichtl motioned to approve August 17, 2023, meeting minutes as presented. Preston Blinsky seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.

Material: SEP21_Attach3- 1f. August 17, 2023, Meeting Minutes.docx

MDAG MINUTES

September 21, 2023

AGENDA ITEM 2 – REVIEW OF PAST ACTION ITEMS

Eric Sullivan discussed outstanding issues highlighted in red font, including the action items added from the last meeting. Eric walked the group through updates on action items collected at the previous session and updates for existing in-progress action items.

- Action Item 209 – In Progress – CON Naming conventions. Update at a future MDAG meeting.

AGENDA ITEM 3 – 2024 MDAG MEETING SCHEDULE (APPROVAL ITEM)

John Turner presented the proposed 2024 MDAG meeting schedule.

Motion: Jesse Kreutzfeldt motioned to approve the 2024 MDAG meeting schedule as amended. John Vara seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed unanimously.

AGENDA ITEM 4 – 2024 MDAG FG MEETING SCHEDULE (APPROVAL ITEM)

SPP staff, Eric Sullivan, presented the proposed 2024 MDAG FG meeting schedule.

Motion: Steve Hohman motioned to approve the 2024 MDAG FG meeting schedule as presented. Preston Blinsky seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed unanimously.

AGENDA ITEM 5 – 2023 SERIES MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 5A – DYNAMICS (APPROVAL ITEM)

SPP staff, Zach Sabey, updated the group on the 2023 Series MDAG Dynamics model build.

Motion: Jason Shook motioned to approve the 2023 Series MDAG Dynamics model build contingent upon the final updates being applied. Alex Mucha seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.

Additional post comments regarding motion: (SPP staff's comments are reflected in red to each WAPA concern noted from (SPP) Zach Sabey to (WAPA) Brianna Haug)

Official language of WAPA's concerns of the dynamics cases for reference:

WAPA-UGPR does not vote to approve the 2023 MDAG dynamics models for the following reasons:

MDAG MINUTES

September 21, 2023

- Palmer's Creek Wind (654400 & 654401) 50 MW generation is operationally in-service and does not initialize or simulate in dynamics.
 - This has an update that will be applied to ideally fix the issue. This likely will not need a post processing update, but the update will be applied.
 - A dyrechange file correction was provided for this facility during offline wind initialization and posted with the initial models at the end of July. We will add this correction to the seasonal dyrechange file for each case as well as post the offline wind initialization again with the approved models.
- Huron BGG (660076) 70 MW generation is operationally in-service and does not have a dynamics model present.
 - You will be reaching out to the appropriate GO requesting information. This may require a post processing update for application to the dyn models
 - Correct – the GO reached out to me about a month ago saying they were trying to finalize the dynamic models for the facility and should have them by Nov 1. I will reach out to them to see if they have an updated timeline on the dynamics data. I will make sure to keep you aware of this timeline and will post this information to a "Post Processing" folder if we do not have it by the 10/5/2023 posting of the final approved models.
 - As a note, the six units at this facility fall under the MMWG criteria for being acceptable to place in the GNET file if a dynamic model is not available. They are under 20MVA as a single machine and under 75MVA for the plant – the current models have each machine at 11.49MVA for a total of 68.94MVA. I have copied an excerpt from the MMWG manual, section 6, for your reference.
 - E. Dynamics data shall be collected for all machines with a gross nameplate rating greater than 20 MVA as well as all plants with an aggregate nameplate rating greater than 75 MVA on the Eastern Interconnected System, irrespective of whether or not these machines are dispatched in a particular power flow case.
 - ****After sending the above response to WAPA, the GO for Huron submitted dynamics data. This data will be included in each seasonal .dyr folder for the final model posting. ****
- Wildsprings Solar (654283 & 654285) 128 MW generation becomes operational in December 2023 and does not have a dynamics model present.
 - You will be reaching out to the appropriate GO requesting information. This may require a post processing update for application to the dyn models

MDAG MINUTES

September 21, 2023

- Correct – I have not received any dynamics data for this facility to date, so we will reach out to the GO to provide us their MOD-032 data.
- I did reach out to our GI team – they do have data for this facility, so we can use the GI representation (REGCA) in the final model posting. I will plan to add this directly into our .dyr files for the time being until the GO provides their latest representation.
 - If you would prefer to have this in its own separate .dyr file, please let me know and I can post it in a “Post Processing” folder.
- Sweetland Wind (should be interconnected to Rosehill 652508) 200 MW generation becomes operational in November 2023, is missing from steady-state models, and does not have a dynamics model present.
 - This generator will not be present in the dyn cases as it does not exist in the 2024 ITP base PF cases. This update will not be submitted in any form.
 - One correction to your above comment – it does not exist in the 2023 MDAG base PF models that were approved in March of 2023 and are what we use as the starting point for our 2023 MDAG dynamic models.
 - It is not normal for us to add a generating facility only into the dynamic models when it is not present in the equivalent year’s powerflow models. There is no current process or procedure to do this, but we understand WAPA’s concern with not having this facility in the models. We can provide WAPA the .idv and .dyr that has since been submitted to SPP for WAPA to add into the case and utilize for your internal studies when needed. This facility has been added in to the 2024 MDAG/2025 ITP base PF models so it will be included in the 2024 MDAG Dynamics models.
 - If WAPA would like to have a process where adding a generator into the dynamics models only is possible, we would request that WAPA brings a presentation to the MDAG FG and follow that process to have the MDAG manual updated (similar to the request to perform offline wind initialization)

It is unacceptable to continue to finalize MDAG dynamics models with significant BES generation units within the SPP footprint without proper dynamics representations or simply omitted entirely. This practice compromises the integrity of stability analyses conducted with the MDAG dynamics models, as well as SPP member operating studies. If the 2023 MDAG dynamics models are approved by the majority of MDAG members, then specific remedies for the issues above should be developed immediately and made available to stakeholders.

AGENDA ITEM 6 – BESS PROJECTS INTERCONNECTION CHALLENGES

MDAG MINUTES

September 21, 2023

Pablo Fernandez provided the group with an update on the BESS Project and the interconnection challenges.

Issues with ESRs – GI process does not evaluate ESRs as loads (charging mode), just as a generator. The process doesn't consider any upgrades that may be needed for the charging scenario and could have errors in the assumptions used for revenue calculation.

SPP member asked what is the overall tariff perspective for battery charging – is that going in AQ?

SPP has an ongoing effort to put in requirements for batteries. Currently working on addressing regulatory and tariff issues and then will move onto the design and implementation phase. Current plan would be for batteries charging from the grid to go through the AQ process to be granted service and then incorporating that service into the models. Working through issues in PROMOD and setting up how the battery may be charged/discharged during a yearlong hourly production cost simulation.

SPP member asked what would be MDAGs next steps in this effort?

SPP staff said that the main effort will be getting the data added into the models (powerflow and dynamics) as well as keeping track of injection limits for surplus generation at a POI. Likely a new workbook or EDST tracking.

AGENDA ITEM 7 – EMT MODELING

SPP staff, Doug Bowman, updated the group on the EMT modeling process.

Doug walked through the screening process for IBRs using SCRCCT (Short-circuit ratio critical clearing time). If a GI customer fails this screening, then PSCAD models are requested to perform an extra study using the SPP Electromagnetic Transient (EMT) Model Requirements. Doug walked through all of the data requested and what some of the verification checks are.

SPP Member asked if these tests will be required of the TO as well in the future.

Doug said that in the future, modeling will likely be requesting this data for modeling to conduct testing as well. TO's may not have to do testing, but having knowledge of the software would be beneficial. SPP member also mentioned updates to the TPL standard will have EMT data requirements, so it will likely be coming down the road.

SPP Member asked if there was a future goal to run these tests in a larger scope than just a SMIB (single machine infinite bus). Daisy chained facilities can be causing issues when only testing in a SMIB doesn't reveal those same issues.

MDAG MINUTES

September 21, 2023

Doug mentioned that testing in a SMIB is the current way, but the SCR value can be adjusted up and down for a "weaker" or "stronger" grid.

SPP Member asked if the test system goes beyond the POI or if new setups have to be made for every facility.

Doug said that the impedance at the POI could be changed to represent any grid strength, so the setup could be the same and parameters could be adjusted.

SPP Member asked if there is any translation programs that SPP uses to convert PSSE models to PSCAD models.

Doug responded that only select facilities have to go through PSCAD process and the PSCAD data is requested from the specific GO. SPP is using E-tran to convert .raw files to PSCAD files and determine size/scope of system for study.

SPP Member asked if there were any model quality tests for the PSSE vs PSCAD models.

Doug said that no model quality checks are currently done but the hope is to do the benchmarking in the future.

AGENDA ITEM 8 – RR452

SPP staff, Matt Jackson, updated the group on RR452. This covers TO Project evaluation and Matt walked through the process.

SPP Member asked about "Material Modification" change coming at the beginning of the year.

Matt responded this will be changed in the flowchart and other references to "Transmission Material Modification".

AGENDA ITEM 9 – MOD FILE BUILDER 11.3

Jordan Skillern provided the group with an update on MOD File Builder Version 11.3.

SPP Member asked if there was any reason why they could not use version 11.2

Jordan said that this was specifically related to NCSFC sequence data, so he did not see any reason why 11.2 or other versions could not be used if you aren't dealing with NCSFC data.

AGENDA ITEM 10 – FOCUS GROUP UPDATES

AGENDA ITEM 10A – RAD TF

MDAG MINUTES
September 21, 2023

SPP staff, Darian Richards, updated the group on the upcoming items for the RAD Task Force.

AGENDA ITEM 11 – 2024 SERIES MDAG MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 11A – POWERFLOW

SPP staff, Hugh Benfer, updated the group on the 2024 Series MDAG Powerflow model build.

AGENDA ITEM 11B – SHORT CIRCUIT

SPP staff, Eric Sullivan, updated the group on the 2024 Series MDAG Short Circuit model build.

AGENDA ITEM 11C – MOD-033

SPP staff, Eric Sullivan, updated the group on the 2024 Series MDAG MOD-033/WWE model build.

AGENDA ITEM 12 – DISCUSSION OF FUTURE MEETINGS

MDAG Chair, John Turner, updated the group on upcoming meetings.

- a. TWG Face-to-Face: September 26-27, 2023 (9:00 AM begins)
- b. RAD Task Force: September 29, 2023 (1:00 PM – 3:00 PM)
- c. Ambient Adjustment Ratings Implementation Task Force (AARITF): October 2, 2023 (9:00 AM – 11:00 AM)
- d. MDAG: October 19, 2023 (9:00 AM – 12:00 PM)
- e. MDAG FG: October 24, 2023 (1:00 PM – 3:00 PM)
 - i. Facilitate Technical Discussions
 - ii. MDAG changes (Manual, Schedule, etc.) must be discussed in FG before being brought to the MDAG

AGENDA ITEM 13 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** SPP staff to follow to have someone from SPP operations to discuss the FERC 841 process and plans for the future.

MDAG MINUTES
September 21, 2023

AGENDA ITEM 14 – ADJOURN

John Turner adjourned the meeting at 12:00 p.m. (CST)

Steve Hohman motioned to adjourn the meeting. Scott Rainbolt seconded the motion. The group did not voice any concerns. The motion passed unanimously.

Respectfully Submitted,

Lottie Jones
Secretary

Eric Sullivan
Secretary Assistant

Attachments

SEP21_Attach1- 1e. MDAG Meeting Agenda.docx

SEP21_Attach2 - 1c. MDAG Conference Call Attendance-09-21-2023

SEP21_Attach3- 1f. August 17, 2023, Meeting Minutes.docx

SEP21_Attach 4-3. 2024 MDAG Meeting Schedule .pptx

SEP21_Attach 5-3. 2024 MDAG Proposed Meeting Schedule .xlsx

SEP21_Attach 6-4. 2024 MDAG FG Meeting Schedule .pptx

SEP21_Attach 7-4. 2024 MDAG Focus Group Meeting Schedule.xlsx

SEP21_Attach 8-5a. 2023 series MDAG Dynamics model build update.pptx

SOUTHWEST POWER POOL, INC.

MODEL DEVELOPMENT ADVISORY GROUP MEETING

September 21, 2023

Conference Call

9:00 a.m. – 12:00 p.m. (CST)

AGENDA

1. Administrative Items.....John Turner (10 mins)
 - a. Call to Order
 - b. Antitrust Statement
 - c. Attendance
 - d. Proxies
 - e. Agenda Review (**Approval Item**)
 - i. Acknowledgment for the posting of meeting materials
 - ii. *Agenda items may be taken out of order and could conclude earlier or later than estimated time.*
 - f. Previous **August** Meeting Minutes (**Approval Item**)
2. Review of Past Action Items Eric Sullivan (5 mins)
3. 2024 MDAG Meeting Schedule (**Approval Item**).....John Turner (10 mins)
4. 2024 MDAG FG Meeting Schedule (**Approval Item**) Eric Sullivan (5 mins)
5. 2023 series Model Build/Application Updates
 - a. Dynamics(**Approval Item**).....Zach Sabey/Theo Brown (20 mins)
6. BESS Projects Interconnection Challenges..... Pablo Gallego Fernandez (30 mins)
7. EMT Modeling.....Doug Bowman (30 mins)
8. RR452 Matt Jackson (20 mins)
9. MOD File Builder 11.3 Jordan Skillern (10 mins)
10. Focus Group Updates
 - a. RAD TF..... Darian Richards (10 mins)
11. 2024 series Model Build/Application Updates
 - a. PowerflowDarian Richards/Hugh Benfer/David Duhart/Lottie Jones (10 mins)

Antitrust: SPP strictly prohibits use of participation in SPP activities as a forum for engaging in practices or communications that violate the antitrust laws. Please avoid discussion of topics or behavior that would result in anti-competitive behavior, including but not limited to, agreements between or among competitors regarding prices, bid and offer practices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that might unreasonably restrain competition.

- i. Operational benchmark
- b. Short Circuit Eric Sullivan (5 mins)
- c. MOD-033Eric Sullivan/Ben Mitchell (5 mins)

12. Discussion of Future Meetings John Turner (5 mins)

All meeting times are represented in the central time zone. Please register for all meetings via spp.org

- a. TWG Face-to-Face: September 26-27, 2023 (9:00 AM begins)
- b. RAD TF: September 29, 2023 (1:00 PM – 3:00 PM)
- c. Ambient Adjustment Ratings Implementation Task Force: October 2, 2023 (9:00AM 11:00AM)
- d. MDAG: October 19, 2023 (9:00 AM – 12:00 PM)
- e. MDAG Focus Group: October 24, 2023 (1:00 PM – 3:00 PM)
 - i. Facilitate technical discussions
 - ii. MDAG changes (manual, schedule, etc) must be discussed in FG before being brought to MDAG

MDAG encourages you to check out the spp.org calendar for additional information on technical topics discussed in other working groups. SPP also offers stakeholder trainings [found here](#)

13. Summary of Action Items John Turner (5 mins)

- a. Agenda Review – additional comments request

13.5. Change of Vote on Agenda Item 5 (Approval Item)

14. Adjourn All

* The approval items denoted with "*" shall be jointly developed by PC, TP, and MDAG

Assessment 1

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Spreadsheet

Assessment process located on Confluence before completing and submitting your spreadsheet: sppcorp.org/display/WG/MOPC#expand-AnnualAssessmentWGsAGs

Pay attention to spreadsheet's formatting! The assessments must be the same across all groups. Be careful if you copy/paste throughout the spreadsheet. You need to "drag" any formulas to new rows and may need to adjust the cell or Kaye McCarty for assistance.

Enter the group's name in A1 and group acronym in bottom 2 tabs.

Representative information

A. Enter the names of your rostered representatives in column A, beginning with your name (staff secretary) in row 7.

Use LAST NAME, FIRST NAME

B. Enter the company name for each of the rostered representatives in column B, beginning with "SPP" in row 7.

Use company names EXACTLY AS LISTED ON SPP.ORG: <https://www.spp.org/about-us/members-market-participants/>

C. For standing proxies, list the proxy's name and company and the company they're representing.
Example: Starnes, Heather (Healy Law Firm) proxy for Grotzinger, John | Missouri Joint Electric

Meeting details

A. Enter your meeting dates beginning in column C, row 1 and continue across the worksheet until all meeting dates are entered

B. Enter the actual duration for each meeting beginning in column c, row 2. Round to the nearest .5 hours.

C. Enter the actual number of votes taken per meeting beginning in column c, row 3. **Do not count** administrative votes such as votes to approve the agenda or adjourn the meeting. When counting consent votes, count one vote for each item under the consent topic. Do not count a consent vote as 1 if it includes multiple items.

D. Enter the total number of attendees for each meeting beginning in column c, row 4

E. Enter the meeting format for each meeting beginning in column c, row 5

Attendance at each meeting per representative

A. For yourself and each member note how the individual attended the meeting using the drop down for the cell. Options are virtual, in-person, proxy, absent or non-member. Non-member is to be used for those who were members for only part of the assessment period. If you have a member that joined or left the group during the assessment period, utilize the non-member option for all meetings in which they were not considered a rostered member of the group.

Survey worksheet

Demographic data

- A. Indicate Yes if the member is current and No if they are no longer a part of the group
- B. Enter the type of member for each representative in column D
- C. Enter the sector type for each representative in column E
- D. If a representative leaves mid assessment period add a red asterick in front of their name

to indicate the status of your scope review in L8

nt Period in A2

adsheet!

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ne row numbers in the formulas. Please

**Model Development
Advisory Group**

Meeting Date(s)	8/17/2023	9/21/2023
Meeting Length (hrs)	3	3
Number of Votes Taken	2	5
Overall Attendance	71	64
Meeting Format	Virtual	Virtual

Name	Company	8/17/2023	9/21/2023
Lottie Jones (Staff Secretary)	SPP	Virtual	Proxy
John Turner (Chair)	Western Farmers Electric Power	Virtual	Virtual
Brianna Haug (Vice Chair)	Western Area Power Administration	Virtual	Virtual
Alex Mucha	Oklahoma Municipal Power Authority	Absent	Virtual
Dustin Betz	Nebraska Public Power District	Virtual	Virtual
Jason Shook	GDS Associates	Absent	Virtual
Jerry Bradshaw	City Utilities of Springfield	Virtual	Virtual
Jesse Kreuzfeldt	Missouri River Energy Services	Virtual	Virtual
Joe Fultz	Grand River Dam Authority	Virtual	Virtual
John Vara	Golden Spread Electric	Virtual	Virtual
Liam Stirlingham	Sunflower Electric Power Corporation	Virtual	Virtual
Preston Blinsky	Basin Electric Power Cooperative	Virtual	Virtual
Reené Miranda	Southwestern Public Service	Proxy	Proxy
Ryan Baysinger	Energy	Virtual	Absent
Scott Rainbolt	Nebraska Electric Power	Proxy	Virtual
Scott Schichtl	Arkansas Electric Cooperative Corporation	Virtual	Virtual
Steve Hohman	Omaha Public Power District	Virtual	Virtual
Tyler Baxter	Corn Belt Power Cooperative	Virtual	Virtual
Guest Name	Company		
Adam Mummert	Burns & McDonnell	Virtual	
Adam Nmili	Oklahoma Gas and Electric Company	Virtual	
Afshin Salehian	SPP		
Adam Schaeffer	OPPD	Virtual	
Ala Wadi	Liberty Utilities	Virtual	Virtual
Amine Chenaf	DNV		
Andrew Berg	Missouri River Energy Services		
Andrew Howard	Lincoln Electric System	Virtual	
Angeliki Dimopoulos	ITC	Virtual	
Anteneh Workneh GDS	GDS	Virtual	
Antonio Barrera	Southwestern Public Service		
Amin Sahic	Nebraska Municipal Power Pool	Virtual	
Anup Phillip	Acciona		Virtual
Aster Amahatston	Nebraska Municipal Power Pool		
Ben Hammer	WAPA		
Becca McCann	SPP	Virtual	
Ben Mitchell	SPP	Virtual	Virtual
Blake Poole	Energy		
Bobby Gray	Liberty Utilities	Virtual	
Brandon Hentschel	SPP	Virtual	Virtual
Brenda Harris	COX		
Brian Johnson	AEP		
Brooke Keene	SPP		
Bruce Doll	Nebraska Municipal Power Pool		
Calvin Coates	Kansas Power Pool	Virtual	
Casey Cathey	SPP	Virtual	Virtual
Cassandra Stuber	AEP		
Charles Costello	Siemens	Virtual	
Cho Wang	American Electric Power	Virtual	
Chris Colson	Western Area Power Administration	Virtual	
Chris Davis	SPP		
Chris Gidden	Tri State		
Chris Rich	Oklahoma Gas and Electric Company	Virtual	
Clarence Campbell	SPS	Virtual	
Claire Vigesaa	Burns & McDonnell		
Comer Sweet	City Utilities of Springfield	Virtual	Virtual
Curtis Miller	Western Farmers Electric Power		
Dale Reinhold	Hastings Utilities		
Damien Burbage	AECI		
Danielle Borg	Sunflower Electric Power Corporation	Virtual	Virtual
Darian Richards	SPP	Virtual	Virtual
David Bromberg	Pearl Street Technologies		
David Duhart	SPP		Virtual
David Mendoza	Grand River Dam Authority	Virtual	
David Zhong	American Electric Power	Virtual	Virtual
Dee Edmondson	SPP	Virtual	
Derek Brown	Energy		
Devon Pehrson	National Grid Renewables		
Diego Toledo	Grand River Dam Authority		Virtual
Douglas Bowman	SPP	Virtual	
Dona Parks	Grand River Dam Authority		
Donald Hargrove	Oklahoma Gas and Electric Company		
Dustin Moser	Liberty Utilities		
Dylan Fate	Tri State		
Dylan Haas	Energy		
Ebrahim Rezaei	American Electric Power		
Eddie Watson	SPP	Virtual	Virtual
Edin Terzic	Lincoln Electric System		
Eli Nyambegeza	Sunflower Electric Power Corporation		
Elijah Salinas	LES		Virtual
Ellen Cook	SPP		
Eric Jones	Omaha Public Power District		Virtual
Eric Sullivan	SPP	Virtual	Virtual
Erin Cathey	SPP		
Erik Voice	Salem Electric		
Estevan Padilla	SPP	Virtual	
Frank Favela	Southwestern Public Service		
Garrick Nelson	Western Area Power Administration		
Gary Boerger	Oklahoma Gas and Electric Company		
Gavin Novotny	Energy		
Glen Halley	City Utilities of Springfield	Virtual	
Grace Bouziden	Oklahoma Gas and Electric Company		
Greg Rolow	State of South Dakota		Virtual
Hannah Mason	Light Source BP		
Harriet Walsh	Orsted		
Hugh Benfer	SPP	Virtual	Virtual
James Oberlus	Savon Energy		
Jason Menke	Nebraska Public Power District	Virtual	Virtual
Jeff Knottek	City Utilities of Springfield		
Jeff McDermid	SPP		
Jeff Plaw	NextEra		Virtual
Jeffrey Taylor	ITC		
Jens Boemer	EPRI		
Jerad Ethridge	Oklahoma Gas and Electric Company		
Jeremy Severson	Basin Electric Power Cooperative		
Jesse Kreuzfeldt	Missouri River Energy Services	Virtual	
Joe Williams	Western Farmers Electric Power		
Joel Huber	Basin Electric Power Cooperative		
Joey Schrepel	Basin Electric Power Cooperative		
John Boshars	City Utilities of Springfield		
John Mayhan	Omaha Public Power District		
John Vara	Golden Spread Electric	Virtual	
John Varnell	Tenaska		
John Wilson	Southern Current LLC		
Jon Langford	Orsted		
Jonah Montgomery	Energy		
Jonathan Aus	East River		
Jordan Skillern	Western Farmers Electric Power		Virtual
Jose Cordova	EPRI		
Josh Hesselbein	Arkansas Electric Cooperative Corporation	Virtual	Virtual
Joshua Pilgrim	SPP		
Josie Duggett	WAPA		Virtual
Juliano Freitas	SPP		
Justin Helt	1890 and Company		
Kadeem Brown	AEP	Virtual	
Kalun Kelley	WVEC		
Kelsey Allen	SPP		
Kim Grogan	Energy		
Kristie Brown	SPP	Virtual	Virtual
Kristen Darden	SPP		
Larry Brasseur	SPP		
Liz Gephardt	Corn Belt Power Cooperative		
Logan Janssen	SPP		
Logan Peterson	East River	Virtual	Virtual
Luke Zahner	Minnesota	Virtual	Virtual
Mae Cruz	Keppco	Virtual	Virtual
Marc Moor	Southwestern Public Service	Virtual	Virtual
Margaret Kristian	Energy	Virtual	Virtual
Martin Green	National Grid Renewables	Virtual	Virtual
Mason Favazza	American Electric Power	Virtual	
Matthew Alvarado	SPP		
Matthew Jackson	IUB		Virtual
Maurice Hughes	SPP		Virtual
McKady Kellam	Energy		
Miah Archambault	Enel	Virtual	
Michael Bowman	City Utilities of Springfield		
Mike Swan	Omaha Public Power District	Virtual	Virtual
Mohamed Ahmed	Epe Consulting		
Moses Rotich	Gridliance		
Mostafa Sedighizadeh	SPP		
Nathan Davis	Liberty Utilities		Virtual
Nathan McNeil	Midwest Energy		
Nicholas Hoelzeman	Energy		
Nicole Hicks	WAPA		
Nitin Kuthwaha	National Grid Renewables		
Neeya Toleman	NextEra		
Neil Smith	Corn Belt Power Cooperative	Virtual	Virtual
Nolan Fertig	SPP		
Pablo Gallego	Acciona		Virtual
Palab Datta	Energy		Virtual
Paul Vovk	Omaha Public Power District	Virtual	
Peter Jones	Savon		
Phil Westby	BEPC		
Prajakta Pawar	Quanta Technology		
Rakib Rahman	Energy		
Ransome Egunjobi	Enel		
Richard Miner	Liberty Utilities		
Ryan Benton	Oklahoma Gas and Electric Company		Virtual
Ryan Schmitt	NMPP Energy	Virtual	Virtual
Scott Holland	SWPA		
Scott Jordan	SPP		
Scott Miljin	Southwestern Power Administration		Virtual
Seth Cochran	DC Energy		
Shalini Gupta	Apex Clean Energy		
Shannon Mickens	SPP	Virtual	
Shawn Gill	Keppco		
Shawna Satterwhite	Oklahoma Gas and Electric Company		
Sherri Maxey	SPP		
Spencer Simpson	1890 and Co	Virtual	
Steve Hardebeck	Oklahoma Gas and Electric Company		
Steve Purdy	SPP		
Steven Park	Sunflower Electric Power Corporation		Virtual
Stewart Krimickas	Burns & McDonnell		
Sunny Rahem	SPP	Virtual	Virtual
Tanner New	Sunflower Electric Power Corporation	Virtual	Virtual
Thomas Burns	SPP		
Theo Brown	SPP		Virtual
Timothy Sell	ITS	Virtual	
Todd Chwalkowski	EDF		
Tom Belshe	Energy		
Tom Mayhan	Omaha Public Power District		
Tony Green	SPP		
Walt Shumate	Shumate & Associates	Virtual	Virtual
William Holden	SPP	Virtual	
Xiaoyu Wang	Enel	Virtual	

Yasmin Sakalla
Ying Yang
Zach Anders
Zach Sabey

Enel
Duke Energy
Burns & McDonnell
SPP

Virtual Virtual

Model Development Advisory Group

August 2023 - August 2024

Name	Company	Is Current Member?	Member Type	Sector	Present	Proxy	Absent	Percent Present
Alex Mucha	Oklahoma Municipal Power Authority	Yes			1	1	0	100%
Brianna Haug (Vice Chair)	Western Area Power Administration	Yes			2	0	0	100%
Dustin Betz	Nebraska Public Power District	Yes			2	0	0	100%
Jason Shook	GDS Associates	Yes			1	0	1	50%
Jerry Bradshaw	City Utilities of Springfield	Yes			2	0	0	100%
Jesse Kreuzfeldt	Missouri River Energy Services	Yes			1	0	1	50%
Joe Fultz	Grand River Dam Authority	Yes			2	0	0	100%
John Turner (Chair)	Western Farmers Electric Power Association	Yes			2	0	0	100%
John Vara	Golden Spread Electric	Yes			2	0	0	100%
Liam Stringham	Sunflower Electric Power Corporation	Yes			2	0	0	100%
Lottie Jones (Staff Secretary)	SPP	Yes			2	0	0	100%
Preston Blinsky	Basin Electric Power Cooperative	Yes			2	0	0	100%
Reené Miranda	Southwestern Public Service	Yes			0	2	0	100%
Ryan Baysinger	Evergy	Yes			1	0	1	50%
Scott Rainbolt	American Electric Power	Yes			1	1	0	100%
Scott Schichtl	Arkansas Electric Cooperative Corporation	Yes			2	0	0	100%
Steve Hohman	Omaha Public Power District	Yes			2	0	0	100%
Tyler Baxter	Corn Belt Power Cooperative	Yes			2	0	0	100%

Annual Assessment Totals	
Average Length of Meetings (hrs)	3
Number of Votes Taken	7
Average Overall Attendance	68
Total Meetings this Assessment	2
Live	0
Teleconference	2
Scope Reviewed	
Transmission Owner(s)	0
Transmission User(s)	0
Director(s)	0
Investor Owned Utility	0
Cooperative	0
Municipal	0
State	0
Federal	0
Independent Power Producer / Marketer	0
Independent Transmission Company	0
Large Retail	0
Alt Power / Public Interest	0
Small Retail	0

Model Development Advisory Group

Meeting Cost(s)	\$
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MAJOR INITIATIVES ADDRESSED BY THE GROUP

1

2

3

MAJOR PENDING INITIATIVES BEFORE THE GROUP

1

2

MDAG MINUTES

August 17, 2023

SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

August 17, 2023 9:00 am – 12:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** Send out straw poll for 1 or 2 in-person meetings as well as the meeting dates and times.
- **Action Item:** Add FERC Order 881 manual language updates to the MDAG Focus Group meetings.

Motions:

- **Motion:** John Vara motioned to approve the amended agenda as presented. Jesse Kreutzfeldt seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Mae Cruz motioned to approve July 13, 2023, meeting minutes as presented. Jerry Bradshaw seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.

MDAG MINUTES

August 17, 2023

SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

August 17, 2023 9:00 am – 12:00 pm (CST)

Conference Call

MINUTES

AGENDA ITEM 1 – ADMINISTRATIVE ITEMS

AGENDA ITEM 1A & 1B – CALL TO ORDER AND ANTITRUST STATEMENT

SPP MDAG Chair, John Turner, called the meeting to order at 9:02 a.m. (CST) with Quorum. SPP Staff Secretary, Lottie Jones, read the anti-trust statement to the group.

MDAG MINUTES

August 17, 2023

AGENDA ITEM 1C & 1D – ATTENDANCE AND PROXIES

The following members attended or were represented by proxy:

MDAG Member	Present	Proxy	Present	Company
Tyler Baxter	Yes			Corn Belt Power Cooperative
Jerry Bradshaw	Yes			City Utilities of Springfield
Dustin Betz	Yes			Nebraska Public Power District
Preston Blinsky	Yes			Basin Electric Power Cooperative
Joe Fultz	Yes			Grand River Dam Authority
Brianna Haug	Yes			Western Area Power Administration, MDAG Vice-Chair
Steve Hohman	Yes			Omaha Public Power District
Reené Miranda	Yes	Mae Cruz	Yes	Southwestern Public Service
Alex Mucha	No			Oklahoma Municipal Power Authority
Scott Rainbolt	Yes	Martin Green	Yes	American Electric Power
Scott Schichtl	Yes			Arkansas Electric Cooperative Corporation
Jason Shook	No			GDS Associates
Liam Stringham	Yes			Sunflower Electric Power Corporation
John Turner	Yes			Western Farmers Electric Power, MDAG Chair
Lottie Jones	Yes			Southwest Power Pool, Inc., MDAG Secretary
John Vara	Yes			Golden Spread Electric
Ryan Baysinger	Yes			Evergy
Jesse Kreutzfeldt	Yes			Missouri River Energy Services

Material: AUG17_Attach2 - 1c. MDAG Conference Call Attendance-08-17-2023

MDAG MINUTES

August 17, 2023

AGENDA ITEM 1E – AGENDA REVIEW (**APPROVAL ITEM**)

John Turner, MDAG chair, asked the group if they had a chance to review the agenda and if the group had any modifications to the agenda.

Lottie Jones added the 2024 MDAG Meeting Schedule to the end of the agenda for this meeting.

Motion: John Vara motioned to approve the amended agenda as presented. Jesse Kreutzfeldt seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: AUG17_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS JULY 13, 2023 MEETING MINUTES (**APPROVAL ITEM**)

Lottie Jones asked the group if they had any proposed changes for the previous July 13, 2023, meeting minutes.

Motion: Mae Cruz motioned to approve July 13, 2023, meeting minutes as presented. Jerry Bradshaw seconded the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.

Material: AUG17_Attach3- 1f. July 13, 2023, Meeting Minutes.docx

MDAG MINUTES

August 17, 2023

AGENDA ITEM 2 – REVIEW OF PAST ACTION ITEMS

Lottie Jones discussed outstanding issues highlighted in red font, including the action items added from the last meeting. Lottie walked the group through updates on action items collected at the previous session and updates for existing in-progress action items.

- Action Item 164 – In-Progress – Bring it back to the MDAG FG Meeting in September.
- Action Item 206 – In-Progress – SPS to include this on the Roadmap Process with SPP providing support for the effort.

AGENDA ITEM 3 – MDAG FOCUS GROUP UPDATE

SPP staff, Eric Sullivan, updated the group on the July MDAG Focus Group topics as well as upcoming topics.

AGENDA ITEM 4 – NERC UPDATES

SPP staff, Shannon Mickens, discussed NERC updates as they relate to MOD-026-2 and MOD-032.

Currently MOD-026-1 and MOD-027-1 have been combined to make up MOD-026-2. MOD-026-2 does not seem to be a 1-1 comparison to MOD-027 at this time. This item could be discontinued based on voting of 46%. 46% fail is based on balloting and must be 67% or above in order to be considered passing. If the balloting does not go above 67% with re-phrasing/re-wording, the item may be discontinued.

The DP is not currently included in the applicability standard of MOD-032 placing PC's and TO's at a compliance risk. This is to be updated accordingly. SPP membership requested the timeline between updates and balloting. This depends on the drafting team but would likely be in the next month.

If you want the NERC bulletin delivered to you, you have to register for an ERO Portal (<https://eroportal.nerc.net/>) account, from there select the "NERC Email Distribution List" option.

AGENDA ITEM 5 – FERC 881 + SEASONAL RATINGS

Chris Colson, WAPA, updated the group on the FERC Order 881 and seasonal ratings discussion.

SPP membership asked if there is still the freedom to have many seasons that you are able to pick a rating for or is it more restrictive?

MDAG MINUTES

August 17, 2023

The language is not more prescriptive in order to give flexibility to the data submitter as to the ratings that they provide in their data. There will be an RR in the future in order to correct/amend the planning criteria. Data submitters will need to keep methodology documentation regarding how these decisions were made in regards to the ratings that were provided. The current ambient conditions of FAC-008 are acceptable.

SPP will have to retain this information for 5 years so that this data can be reviewed/audited at a later date.

FERC 881A contained some language concerns regarding relay loading limits. If your rating is going up, you could encroach on a relay loading limit. The current language in FERC Order 881 does not need revision in order to account for the above statements. There is currently a SPCWG White Paper stating that there is not currently an issue with the language as well.

This topic should remain at the MDAG Focus Group level in order to maintain eyes on it until the manual language has been updated in order to reflect the new changes.

AGENDA ITEM 6 – MODELING ASSIGNMENT

SPP staff, Kristie Brown, updated the group on the SPP modeling assignments.

AGENDA ITEM 7 – 2023 SERIES MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 7A - DYNAMICS

SPP staff, Zach Sabey, updated the group on the 2023 Series MDAG Dynamics model build.

Wind Initialization run-through did not show any significant concerns.

AGENDA ITEM 8 – 2024 SERIES MDAG MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 8A – POWERFLOW

SPP staff, Darian Richards, updated the group on the 2024 Series MDAG Powerflow model build.

SPP membership asked when MOD will be unlocked for data entry. MOD will be unlocked on Monday August 21st 2023.

AGENDA ITEM 8B – SHORT CIRCUIT

SPP staff, Eric Sullivan, updated the group on the 2024 Series MDAG Short Circuit model build.

AGENDA ITEM 8C – MOD-033

MDAG MINUTES

August 17, 2023

SPP staff, Eric Sullivan, updated the group on the 2024 Series MDAG MOD-033/WWE model build.

AGENDA ITEM 8D – EDST

SPP staff, Kristie Brown, provided the group with an EDST update.

AGENDA ITEM 9 – 2024 MDAG MEETING SCHEDULE

SPP staff, Lottie Jones, requested input from the group regarding 2024 MDAG meeting dates and times.

This schedule will be presented at the next MDAG meeting as well.

Action Item: Send out straw poll for 1 or 2 in-person meetings as well as the meeting dates and times.

AGENDA ITEM 10 – DISCUSSION OF FUTURE MEETINGS

MDAG Chair, John Turner, updated the group on upcoming meetings.

- a. MDAG: September 21, 2023 (9:00 AM – 12:00 PM)
 - i. EMT Modeling
 - ii. MOD File Builder 11.3
- b. MDAG FG: August 22, 2023 (1:00 PM – 3:00 PM)
 - i. Facilitate Technical Discussions
 - ii. MDAG changes (Manual, Schedule, etc.) must be discussed in FG before being brought to the MDAG

AGENDA ITEM 11 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** Send out straw poll for 1 or 2 in-person meetings as well as the meeting dates and times.
- **Action Item:** Add FERC Order 881 manual language updates to the MDAG Focus Group meetings.

MDAG MINUTES

August 17, 2023

AGENDA ITEM 13 – ADJOURN

John Turner adjourned the meeting at 11:29 a.m. (CST)

Respectfully Submitted,

Lottie Jones
Secretary

Eric Sullivan
Secretary Assistant

Attachments

AUG17_Attach1- 1e. MDAG Meeting Agenda.docx

AUG17_Attach2 - 1c. MDAG Conference Call Attendance-08-17-2023

AUG17_Attach3- 1f. July 13, 2023, Meeting Minutes.docx



2024 MDAG MEETING SCHEDULE

JOHN TURNER

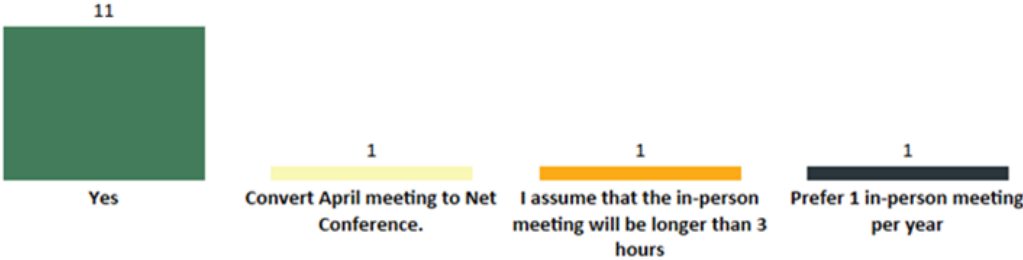
OVERVIEW

- MDAG Straw Poll
- Questions
- Recommendation

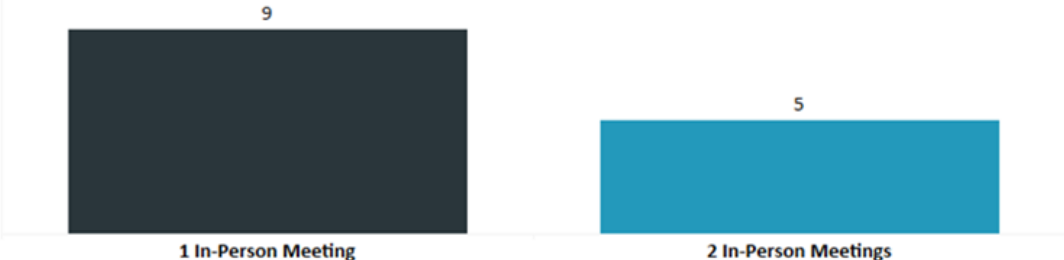
MDAG Straw Poll - 8/17/2023

Total of 14 Responses

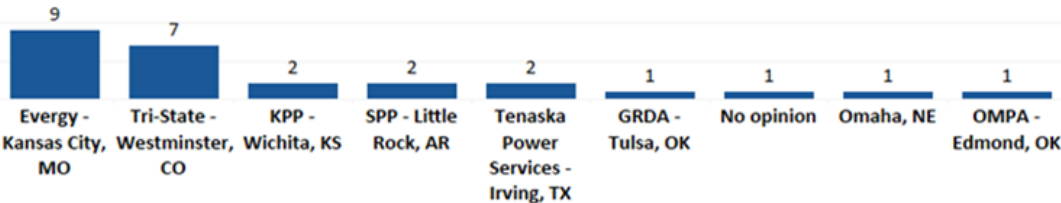
Do you agree with the proposed 2024 meeting schedule?



How many in-person meetings (1 or 2)?



For the Meeting Location, what is your preference?



Should the MDAG model approvals be held in-person?



Should the In-Person meeting be held in March before approval?



Additional Comments

- Build near term gap year models.
- For the last two questions I don't have a strong opinion, but an answer was required so I put no.
- I would likely only attend one in-person meeting per year
- If only one in-person meeting, recommend pairing it with a workshop or training event and hold it at the start of the model build.
- MDAG should consider building those gap year Summer and Winter models for the next model build.
- SPP or the OK meeting locations are my preference as other locations make travel a bit of a challenge.



QUESTIONS?

RECOMMENDATION

The Model Development Advisory recommends to approve the posted 2024 schedule as shown for MDAG meetings.

DRAFT 2024 MDAG SCHEDULE

MONTH	DATE	Time (CT)	LOCATION	ALT. LOCATION
Meeting 1	18-Jan	9-12	Virtual Conference Only	
Meeting 2	15-Feb	9-12	Virtual Conference Only	
Meeting 3	21-Mar	9-12	Virtual Conference Only	
Meeting 4	18-Apr	9-12	Virtual Conference Only	TBD
Meeting 5	16-May	9-12	Virtual Conference Only	
Meeting 6	19-Jun	9-5	In Person/Virtual	Denver Kansas City - 1st Little Rock
	20-Jun	9-12	In Person/Virtual	Denver Kansas City - 1st Little Rock
Meeting 7	22-Aug	9-12	Virtual Conference Only	
Meeting 8	19-Sep	9-12	Virtual Conference Only	
Meeting 9	17-Oct	9-12	Virtual Conference Only	
Meeting 10	14-Nov	9-12	Virtual Conference Only	
Meeting 11	12-Dec	9-12	Virtual Conference Only	

FILE

Notes

Merge June/July Meeting Meeting before model kick off in July. Will serve as a workshop as well.

Merge June/July Meeting Meeting before model kick off in July. Will serve as a workshop as well.



2024 MDAG FOCUS GROUP MEETING SCHEDULE

ERIC SULLIVAN

OVERVIEW

- Questions
- Recommendation



QUESTIONS?

RECOMMENDATION

The Model Development Advisory Group recommends to approve the posted 2024 schedule for MDAG Focus Group meetings.

MDAG Focus Group Meetings 2024

Month	Date	Time	Type
January	1/23/2024	1 p.m. - 3 p.m.	WebEx
February	2/20/2024	1 p.m. - 3 p.m.	WebEx
March	3/19/2024	1 p.m. - 3 p.m.	WebEx
April	4/23/2024	1 p.m. - 3 p.m.	WebEx
May	5/21/2024	1 p.m. - 3 p.m.	WebEx
June	6/18/2024	1 p.m. - 3 p.m.	WebEx
July	7/23/2024	1 p.m. - 3 p.m.	WebEx
August	8/20/2024	1 p.m. - 3 p.m.	WebEx
September	9/24/2024	1 p.m. - 3 p.m.	WebEx
October	10/22/2024	1 p.m. - 3 p.m.	WebEx
November	11/19/2024	1 p.m. - 3 p.m.	WebEx
December	12/17/2024	1 p.m. - 3 p.m.	WebEx



2023 MDAG DYNAMICS MODEL BUILD UPDATE

ZACH SABEY, PE

THEO BROWN



2023 SERIES MDAG DYNAMIC MODEL BUILD UPDATE

Completed Tasks

- Posted Proposed Final Models (9/7/2023)

In-Progress Tasks

- Creating and Posting TPL Sensitivity Dispatch Models (9/29/2023)
- Review and Approval of Final MDAG Models

Future Tasks

- Build TPL Models with 2023 ITP Portfolio Updates

UPDATES RECEIVED AND INCLUDED (BY 9/14/2023)

STAFF RECOMMENDATION

Staff recommends that MDAG approve the 2023 MDAG Final Dynamic Models, contingent upon the updates being applied before posting.

- Recent Updates Deadline: 9/21/2023
- Anticipated Posting: 10/5/2023

KEY DATE REMINDERS

11/28/2023

- Post Proposed Final TPL Models

11/29/2023 -
12/12/2023

- Member review

12/14/2023

- TPL Model Approval Vote

QUESTIONS?