

MDAG MINUTES

December 15, 2022

SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

December 15, 2022 9:00 am – 12:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** Add batteries as a discussion topic in a future MDAG FG meeting.

Motions:

- **Motion:** Renee Miranda motioned to approve the presented agenda as modified. Andrew Berg seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Jason Shook motioned to approve November 17, 2022, meeting minutes as presented. Jerry Bradshaw seconded the motion. Renee and Andy abstained due to not being in attendance. The group did not voice any additional concerns during the discussion of the motion.
- **Motion:** Renee Miranda motioned to approve the schedule as updated and written. Scott Schictl seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Brianna Haug motioned to approve the schedule as updated and written with Tuesday MDAG FG meetings. Preston Blinsky seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Jason Shook motioned to approve the SPP staff recommendation as shown. Mike Swan seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** John Vara motioned to approve the 2023 MDAG Dynamic Model Build Schedule as amended. Brianna Haug seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

MDAG MINUTES
December 15, 2022

Southwest Power Pool
MODEL DEVELOPMENT ADVISORY GROUP MEETING

December 15, 2022 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

Proxy 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
December 15, 2022

AGENDA ITEM 1C & 1D – ATTENDANCE AND PROXIES

The following members attended or were represented by proxy:

MDAG Member	Present	Proxy	Present	Company
Tyler Baxter	No			Corn Belt Power Cooperative
Jerry Bradshaw	Yes			City Utilities of Springfield
Dustin Betz	No	Jason Menke	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	No	Mike Swan	Yes	Omaha Public Power District
Reené Miranda	Yes			Southwestern Public Service
Alex Mucha	Yes			Oklahoma Municipal Power Authority
Scott Rainbolt	Yes			American Electric Power
Scott Schichtl	Yes			Arkansas Electric Cooperative Corporation
Jason Shook	Yes			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	David Mendoza	Yes	Golden Spread Electric
Ryan Baysinger	Yes			Evergy
Jesse Kruezfeldt	No	Andrew Berg	Yes	Missouri River Energy Services

Material: DEC15_Attach2 - 1c. MDAG Conference Call Attendance-12-15-2022

MDAG MINUTES
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AGENDA ITEM 1E – AGENDA REVIEW (APPROVAL ITEM)

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

John Turner requested a 10-minute break into the agenda if time was allotted for it. The agenda was modified and approved with no further discussion.

Motion: Renee Miranda motioned to approve the presented agenda as modified. Andrew Berg seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: DEC15_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS NOVEMBER 17, 2022 MEETING MINUTES (APPROVAL ITEM)

Lottie Jones asked the group if they had any proposed changes for the previous November 17, 2022, meeting minutes.

The group reviewed the meeting minutes and did not voice any additional changes

Motion: Jason Shook motioned to approve November 17, 2022, meeting minutes as presented. Jerry Bradshaw seconded the motion. Renee and Andrew abstained due to not being in attendance. The group did not voice any additional concerns during the discussion of the motion.

Material: DEC15_Attach3- 1f. November 17, 2022, Meeting Minutes.docx

MDAG MINUTES

December 15, 2022

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 176 – In-Progress – Brandon mentioned that SPP is still working on this request and Renee also clarified how batteries are modeled as charging.

Action Item: Add batteries as a discussion topic in a future MDAG FG meeting.

- Action Item 198 – Completed – SPP would like further clarification from Renee regarding what is expected of this action item topic. Originated from TWG topic regarding how legacy generation is addressed regarding fuel-based dispatch. What comes out of this task force would have to be implemented in modeling as well.
- Action Item 201 – Completed – The new initiatives have been submitted to the SPP Roadmap process.

AGENDA ITEM 3 – 2023 MDAG SCHEDULE (APPROVAL ITEM)

AGENDA ITEM 3A – PASS 2, TRIAL 1 SHORT CIRCUIT POSTING CORRECTION

SPP staff, Eric Sullivan, updated the group on the request to remove the Short Circuit Pass 2 Trial 1 schedule amendment, include the removal of the Pass 2 Trial 1 Short Circuit Model build.

SPP Recommendation: SPP would like to request the approval of the schedule as updated, including the removal of a Pass 2 Trial 1 SC model and updating the MDAG Face-to-Face meeting to June 15 2023.

Motion: Renee Miranda motioned to approve the schedule as updated and written. Scott Schictl seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: DEC15_Attach4- 3. 2023 series MDAG - 2024 ITP Powerflow Short Circuit GMD Model Build Schedule Final

AGENDA ITEM 4 – MDAG FOCUS GROUP (APPROVAL ITEM)

AGENDA ITEM 4A – 2023 PROPOSED SCHEDULE

SPP staff, Eric Sullivan, presented on the proposed dates for the 2023 MDAG FG/MTF combined meetings.

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Motion: Brianna Haug motioned to approve the schedule as updated and written with Tuesday MDAG FG meetings. Preston Blinsky seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: DEC15_Attach5- 4. MDAG Focus Group.xlsx

AGENDA ITEM 5 – 2022 SERIES MDAG MODEL BUILD, 2023 TPL RECOMMENDATION

AGENDA ITEM 5A – DYNAMICS (APPROVAL ITEM)

AGENDA ITEM 5 – 2023 TPL DYNAMICS MODELS

SPP staff, Zach Sabey, presented an update on the 2022 MDAG Dynamics Model Build with the 2023 TPL Dynamics Model Set.

Renee expressed some concerns regarding some recent updates being incorporated into the 2023 Dynamics models. Zach mentioned that they could create a post-processing folder on GlobalScape with these updates and any background information on the updates.

SPP Recommendation: Staff will recommend MDAG for approval of the following TPL models. Contingent upon including updated member information. Final models will be posted by December 22nd, 2022 with member updates included

- 2023 TPL-DS34-RED-FINAL-24L.zip
- 2023 TPL-DS34-RED-FINAL-24L-SENS.zip
- 2023 TPL-DS34-RED-FINAL-24S.zip
- 2023 TPL-DS34-RED-FINAL-24S-SENS.zip
- 2023 TPL-DS34-RED-FINAL-32S.zip

Motion: Jason Shook motioned to approve the SPP staff recommendation as shown. Mike Swan seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: DEC15_Attach6- 5a. 2022 series MDAG Model Build_2023 TPL Recommendation

AGENDA ITEM 6 – BREAK (10 MINUTES)

AGENDA ITEM 7 – 2023 SERIES MDAG MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 7A – POWERFLOW

MDAG MINUTES

December 15, 2022

SPP staff, Becca McCann, updated the group on the 2023 MDAG Powerflow model build and the key upcoming dates and reminders.

Mike Swan and Brianna Haug had some additional comments regarding the current powerflow models and ITP cases.

Eddie asked the group if anyone else was seeing generators in the ITP models that were running well below their nominal values. Ryan Baysinger expressed similar issues, but it was determined to be an issue with the priorities for the units in their area. Data submitters were encouraged to meet with SPP staff for additional comments/concerns regarding the models.

AGENDA ITEM 7B – SHORT CIRCUIT

AGENDA ITEM 7BI – GMD UPDATE

SPP staff, Eric Sullivan, updated the group on the current short circuit model build and the current GMD GIC model build.

AGENDA ITEM 7C – MOD-033

SPP staff, Eric Sullivan, updated the group on the current MOD-033-2 East request.

AGENDA ITEM 7D – DYNAMICS (APPROVAL ITEM)

SPP staff, Zach Sabey, updated the group on the upcoming 2023 MDAG Dynamics Model build, including the new schedule.

Renee asked how DC ties are getting updated as well as how we are modeling the other side of the DC ties.

John Vara and Renee Miranda had a couple of minor updates to the scheduled language.

Motion: John Vara motioned to approve the 2023 MDAG Dynamic Model Build Schedule as amended. Brianna Haug seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: DEC15_Attach7- 7d. 2023 Series MDAG & 2024 TPL Dynamics Model Build Schedule and Selection.xlsx

AGENDA ITEM 8 – NEW MODELING STAFF INTRODUCTION

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December 15, 2022

SPP staff, Eddie Watson, introduced Kristie Brown as the new Modeling Planning Specialist. Kristie will be the new point of contact for EDST, and we are all excited to have her a part of the group.

AGENDA ITEM 9 – DISCUSSION OF FUTURE MEETINGS

SPP staff, Lottie Jones, updated the group on upcoming meetings.

- a. MDAG: January 29, 2023 (9:00 AM – 12:00 PM)
- b. MDAG FG: January 24, 2023 (1:00 PM – 3:00 PM)
- c. Joint TWG/ESWG/MDAG Meetings – 2023 Roadmap
 - i. Education Session: January 12, 2023 (8:00 AM – 12:00 PM)
 - ii. Prioritization Finalization Session: February 8, 2023 (1:00 PM – 5:00 PM)

AGENDA ITEM 10 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** Add batteries to discuss in a future MDAG FG meeting.

AGENDA ITEM 11 – ADJOURN

John Turner adjourned the meeting at 11:06 a.m. (CST).

Respectfully Submitted,

MDAG MINUTES
December 15, 2022

Lottie Jones
Secretary

Eric Sullivan
Secretary Assistant

Attachments

DEC15_Attach1- 1e. MDAG Meeting Agenda.docx

DEC15_Attach2 - 1c. MDAG Conference Call Attendance-12-15-2022

DEC15_Attach3- 1f. November 17, 2022, Meeting Minutes.docx

DEC15_Attach4- 3. 2023 series MDAG - 2024 ITP Powerflow Short Circuit GMD Model Build Schedule Final

DEC15_Attach5- 4. MDAG Focus Group.xlsx

DEC15_Attach6- 5a. 2022 series MDAG Model Build_2023 TPL Recommendation

DEC15_Attach7- 7d. 2023 Series MDAG & 2024 TPL Dynamics Model Build Schedule and Selection.xlsx

SOUTHWEST POWER POOL, INC.

MODEL DEVELOPMENT ADVISORY GROUP MEETING

December 15, 2022

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
 - f. Previous November Meeting Minutes (**Approval Item**)
2. Review of Past Action Items Lottie Jones (10 mins)
3. 2023 MDAG Schedule (**Approval Item**).....Eric Sullivan (30 mins)
 - a. Pass 2, Trial 1 Short Circuit Posting Correction
 - b. Face-to-Face Update
4. MDAG Focus Group (**Approval Item**).....Eric Sullivan (30 mins)
 - a. 2023 Proposed Schedule
5. 2022 series MDAG Model Build/2023 TPL Recommendation
 - a. Dynamics (**Approval Item**)Zach Sabey/Theo Brown (30 mins)
 - i. 2023 TPL Dynamics Models
6. Break..... ALL (10 mins)
7. 2023 series MDAG Model Build/Application Updates
 - a. PowerflowBecca McCann/Lottie Jones (10 mins)
 - b. Short CircuitEric Sullivan (10 mins)
 - i. GMD update
 - c. MOD-033 Eric Sullivan (5 mins)
 - d. Dynamics(**Approval Item**).....Zach Sabey/Theo Brown (30 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. 2023 schedule
 - 8. New Modeling Staff Introduction..... Eddie Watson (5 mins)
 - 9. Discussion of Future Meetings John Turner (5 mins)
- All meeting times are represented in the central time zone
- a. MDAG: January 19, 2023 (9:00 AM – 12:00 PM)
 - i. Please register on spp.org
 - b. Joint TWG/ESWG/MDAG Meetings - 2023 Roadmap
 - i. Education session: January 12, 2023 (8:00 AM - 12:00 PM)
 - ii. Prioritization finalization session: February 8, 2023 (1:00 PM - 5:00 PM)
 - 10. Summary of Action Items..... Lottie Jones (5 mins)
 - 11. Adjourn..... All

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

RESUME

10:30 AM CST

***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.*

Attendance worksheet

1. Input your group's name in A1

2. Enter your representative information

- A. Enter the names of your rostered representatives in column A, beginning with your name (staff secretary) in row 7
- B. Enter the company name for each of the rostered representatives in column B, beginning with "SPP" in row 7

2. Enter your 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

3. Track 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 webex, 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.

Org Report Survey worksheet

1. Enter member 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

2. Enter Yes or No to indicate the status of your scope review in L8

3. Enter Assessment Period in A2

Model Development Advisory Group

August 2021 - July 2022

Name	Company	Is Current Member?
Alex Mucha	Oklahoma Municipal Power Authority	Yes
Andrew Berg	Missouri River Energy Services	No
Brianna Haug (Vice Chair)	Western Area Power Administration	Yes
Dustin Betz	Nebraska Public Power District	Yes
#REF!	#REF!	#REF!
Jason Shook	GDS Associates	Yes
Jerad Ethridge	Oklahoma Gas and Electric Company	No
Jeremy Harris	KCP&L and Westar, Evergy Companies	No
Jerry Bradshaw	City Utilities of Springfield	Yes
Joe Fultz	Grand River Dam Authority	Yes
#REF!	#REF!	#REF!
Liam Stringham	Sunflower Electric Power Corporation	Yes
Preston Blinsky	Basin Electric Power Cooperative	Yes
Reené Miranda	Southwestern Public Service	Yes
Ryan Benton	Midwest Energy	No
Scott Rainbolt	American Electric Power	Yes
Scott Schichtl	Arkansas Electric Cooperative Corporation	Yes
Steve Hohman	Omaha Public Power District	Yes
#REF!	#REF!	#REF!
Tyler Baxter	Corn Belt Power Cooperative	Yes
Amine Chenaf	DNV	No
Andrew Howard	Lincoln Electric System	No
Antonio Barrera	Southwestern Public Service	No
Armin Sehic	Nebraska Municipal Power Pool	No
Becca McCann	SPP	No
Brandon Hentschel	SPP	No
Brooke Keene	SPP	No
John Turner (Chair)	Western Farmers Electric Power	Yes
Bruce Doll	Nebraska Municipal Power Pool	No
Casey Cathey	SPP	No
Chris Colson	Western Area Power Administration	No
Conner Sweet	City Utilities of Springfield	No
David Duhart	SPP	No
David Zhong	American Electric Power	No

Diego Toledo	Grand River Dam Authority	No
Edin Terzic	Lincoln Electric System	No
Eli Nyambegera	Sunflower Electric Power Corporation	No
Ellen Cook	SPP	No
Frank Favela	Southwestern Public Service	No
Garrick Nelson	Western Area Power Administration	No
Grace Bouziden	Oklahoma Gas and Electric Company	No
James Okenfuss	Savion Energy	No
Jason Menke	Nebraska Public Power District	No
Jeff Plew	NextEra	No
Jeremy Severson	Basin Electric Power Cooperative	No
Jesse Kreutzfeldt	Missouri River Energy Services	Yes
Joe Williams	Western Farmers Electric Power	No
John Mayhan	Omaha Public Power District	No
John Vara	Golden Spread Electric	Yes
Kim Farris	SPP	No
Kimberly Woods	SPP	No
Mae Cruz	Southwestern Public Service	No
Marc Moor (Evergy)	Evergy	No
McKady Kellam	Evergy	No
Mike Swan	Omaha Public Power District	No
Moses Rotich	Gridliance	No
Nolan Fertig	SPP	No
Peter Jones	Savion	No

Member Type	Sector	Present	Proxy	Absent	Percent Present
Staff	RTO	11	0	2	85%
Staff	RTO	10	0	0	100%
TO	Investor Owned Utility	13	0	0	100%
TU	Cooperative	12	1	0	100%
TU	Cooperative	#REF!	#REF!	#REF!	N/A
TO	Cooperative	10	0	3	77%
TU	Municipal	#REF!	#REF!	#REF!	N/A
TO	State	4	0	0	100%
TO	Cooperative	11	1	1	92%
TO	State	11	1	1	92%
TO	Investor Owned Utility	#REF!	#REF!	#REF!	N/A
TO	Federal	12	1	0	100%
TO	State	10	2	1	92%
TU	Investor Owned Utility	8	5	0	100%
TU	Municipal	7	0	2	78%
TU	Investor Owned Utility	11	2	0	100%
TU	Investor Owned Utility	11	2	0	100%
TU	Cooperative	12	1	0	100%
TO	Cooperative	#REF!	#REF!	#REF!	N/A
TO	Cooperative	10	1	2	85%

Annual Assessment Totals**Average Length of Meetings (hrs) 3****Number of Votes Taken 59****Average Overall Attendance 59****Total Meetings this Assessment 16****Live 1****Teleconference 15****Scope Reviewed No****Transmission Owner(s) 7****Transmission User(s) 5****Director(s) 0****Investor Owned Utility 4****Cooperative 5****Municipal 0****State 2****Federal 1****Independent Power Producer / Marketer 0****Independent Transmission Company 0****Large Retail 0****Alt Power / Public Interest 0****Small Retail 0**

MDAG MINUTES
November 17, 2022

SOUTHWEST POWER POOL
MODEL DEVELOPMENT ADVISORY GROUP MEETING

November 17, 2022 9:00 am – 12:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item: SPP staff: Lottie Jones to connect Shawn with Doug Bowman for the SAR requirements**
- **Action Item: SPP staff: Lottie Jones to post the updated schedule on SPP.org**
- **Action Item: SPP staff to submit new initiatives to the Roadmap Process**

Motions:

- **Motion: Motion: Jason Shook motioned to approve the presented agenda as modified. Alex Mucha seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.**
- **Motion: Motion: Jason Shook motioned to approve October 20, 2022, meeting minutes as presented. Ryan Baysinger seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.**
- **Motion: Motion: Jason Shook motioned to approve the combination of the MDAG FG and MDAG MTF into one consolidated group. Steve Hohman seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.**
- **Motion: Motion: Jason Shook motioned to approve the 2023 MDAG meeting schedule as presented. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.**
- **Motion: Motion: Liam Stringham motioned to approve the membership data submittal language update to the 2023 MDAG schedule as presented. Joe Fultz seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.**

MDAG MINUTES
November 17, 2022

Southwest Power Pool
MODEL DEVELOPMENT ADVISORY GROUP MEETING

November 17, 2022 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

Proxy SPP MDAG Chair, Brianna Haug, called the meeting to order at 9:05 a.m. (CST) with Quorum. SPP Staff Secretary, Lottie Jones, read the anti-trust statement to the group.

MDAG MINUTES
November 17, 2022

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
Steve Hohman	Yes			Omaha Public Power District
Reené Miranda	No	Mae Cruz	Yes	Southwestern Public Service
Alex Mucha	Yes			Oklahoma Municipal Power Authority
Scott Rainbolt	No	David Zhong	Yes	American Electric Power
Scott Schichtl	No	Josh Hesselbein	Yes	Arkansas Electric Cooperative Corporation
Jason Shook	Yes			GDS Associates
Liam Stringham	Yes			Sunflower Electric Power Corporation
John Turner	Yes			Western Farmers Electric Power
Lottie Jones	Yes			Southwest Power Pool, Inc., MDAG Secretary
John Vara	Yes			Golden Spread Electric
Ryan Baysinger	Yes			Evergy

MDAG MINUTES
November 17, 2022

AGENDA ITEM 1E – AGENDA REVIEW (APPROVAL ITEM)

Brianna Haug asked the group if they had a chance to review the agenda and if the group had any modifications to the agenda.

Lottie asked to remove agenda item 3 (MDAG membership) and replace it with the SPP 2023 Roadmap Discussion.

Mae Cruz requested adding agenda item 6 (Modification to 2023 MDAG Schedule).

Motion: Jason Shook motioned to approve the presented agenda as modified. Alex Mucha seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: NOV17_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS OCTOBER 20, 2022 MEETING MINUTES (APPROVAL ITEM)

Lottie Jones asked the group if they had any proposed changes for the previous October 20, 2022, meeting minutes.

The group reviewed the meeting minutes and did not voice any additional changes

Motion: Jason Shook motioned to approve October 20, 2022, meeting minutes as presented. Ryan Baysinger seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: NOV17_Attach2- 1f. October 20, 2022, Meeting Minutes.docx

MDAG MINUTES

November 17, 2022

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 - Planning Model Bus Numbering (MDAG FG Currently Testing)
- Action Item 176 – In-Progress – Batteries Acting as a Load (Still In-Progress)
- Action Item 197 – Completed – How are Competitive Projects Determined in the Common Model (Based on Current FERC 1000) – Future Planning
- Action Item 198 – In-Progress – How Does Legacy Dispatch in Look in the New GI Dispatch (To Be Discussed in 11/18 GIMTF Meeting)

AGENDA ITEM 3 – SPP 2023 ROADMAP DISCUSSION

SPP staff, Lottie Jones, discussed the 2023 roadmap qualifying criteria as well as the new initiatives proposed for 2023.

- Implementing MOD-032 SAR changes for DERs
- EMT Modeling SAR changes
- Rate 3 changes

The deadline for comments and updates to the roadmap process is December 9, 2022.

SPP staff, discussed the first two initiatives with the group. The LSE is no longer applicable in the first case. The LSE is deregistered so SPP asked who would be supplying the data. This responsibility would be moved to the Distribution Provider (DP), but the DP is not currently an applicable entity in the MOD-032 standard. NERC would like to combine MOD-026 and MOD-027 as part of the EMT modeling discussion. RTOs have brought forth the difficulty of getting the data required for a proper EMT study. SCR screening is used to determine if an EMT study is necessary. In addition, SPP staff, discussed that we would like to utilize the roadmap process to track the SAR updates and changes as well as to bring awareness to the various affected groups.

Shawn Wang concluded the discussion by inquiring about TO requirements as it relates to EMT modeling. SPP staff stated that they would connect Shawn with the correct SPP staff member to answer those particular questions.

MDAG MINUTES

November 17, 2022

AGENDA ITEM 4 – MDAG CONSOLIDATION PROPOSAL (APPROVAL ITEM)

Brianna Haug gave the group some background information on the MDAG FG and MDAG MTF as well as the proposal to combine the MDAG FG and MDAG MTF into one consolidated monthly meeting.

Brianna Haug discussed the possibility of having an MDAG member lead this new consolidated meeting. If no member takes on this role, SPP staff will lead the meeting on a six-month rotational basis. MDAG members are open to volunteering to lead this new group until November 23, 2022. Anyone open to volunteering can email Lottie Jones, Brianna Haug, or John Turner.

Motion: Jason Shook motioned to approve the combination of the MDAG FG and MDAG MTF into one consolidated group. Steve Hohman seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: NOV17_Attach3- 4. MDAG Consolidation Proposal

AGENDA ITEM 5 – DISCUSSION OF FUTURE MEETINGS (APPROVAL ITEM)

AGENDA ITEM 5A – MDAG: DECEMBER 15, 2022 (9:00 A.M. – 12:00 P.M.)

SPP staff, Lottie Jones, discussed the proposed schedule for 2023 MDAG meetings with the group, including a Monday afternoon meeting in March as well as a combined in-person meeting in June and July. Concluding with 11 meetings in 2023 and continuing the trend of Thursday morning meetings.

Motion: Jason Shook motioned to approve the 2023 MDAG meeting schedule as presented. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: NOV17_Attach4- 5. Discussion of Future Meetings

AGENDA ITEM 6 – MODIFICATION TO THE 2023 MDAG SCHEDULE (APPROVAL ITEM)

Mae Cruz discussed with the group the note at the bottom of the 2022 MDAG schedule in which members can submit updates during the weekend (after the Friday due date). This language is not in the current 2023 MDAG schedule. Mae stated that there is the benefit to having this language since they are in the middle of a Self-Certification with MRO, and others may be faced with having to produce evidence why some of the data submitted did not fall exactly during the scheduled times. Staff provided reasoning why the previous "weekend" language was proposed

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to be reviewed by another SPP member. Staff provided draft language that mitigated the original concern and address SPS recent inquiry.

Joe Fultz had a question regarding the Dynamics schedule and the submission of the most severe TPL fault. Zach Sabey clarified that this is a voluntary submission and is not required to be submitted.

Motion: Liam Stringham motioned to approve the membership data submittal language update to the 2023 MDAG schedule as presented. Joe Fultz seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Added language: *“Modeling data shall be submitted per this schedule. For data submittals due on a Friday, data submission is allowed through the weekend until Monday at 8:00 AM. If that Monday falls a SPP Holiday, data submissions are due on Tuesday by 8:00 AM. SPP may extend the data submittal periods in the schedule, if the SPP Models On Demand and Engineering Data Submittal Tool (EDST) web portals suffer technical difficulties during the data submittal periods identified in the Schedule.”*

Material: NOV17_Attach5- 6. Modification to 2023 MDAG Schedule

AGENDA ITEM 7 – FOCUS GROUP/TASK FORCE UPDATES

AGENDA ITEM 7A – MDAG FOCUS GROUP

SPP staff, Becca McCann, updated the group on the on-going MDAG FG action items.

- Create a pilot case that uses a separate modeling area for the GO and PPA units that will be presented at the January FG meeting.
- What would be the preferred meeting time for the newly combined MDAG FG and MDAG MTF meeting? Tuesday or Thursday as well as a.m. or p.m.? (Mae commented that she would prefer the Tuesday afternoon time slot)

Becca is going to send out a poll with the combined meeting time options for 2023.

AGENDA ITEM 8 – TOPOLOGY RATE 3 DATA COLLECTION PROPOSAL

SPP staff, Sunny Raheem, provided the group with a Topology Rate 3 Data Collection Proposal presentation, including the current approach, the proposal from SPP, and the impacts and benefits of this proposal. This adjusted emergency conductor rating would affect the discussion of the ambient conductor rating.

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Calvin Coates asked SPP if the current definition for the emergency rating for conductors is a 4-hour limit. This time is 30 minutes for operations but will require more research from SPP to answer this limit from a modeling and planning standpoint.

Brianna asked the group if this will apply to the current model build schedule. Sunny commented that this topic would not have an effect on the current model build.

The group would like to avoid making this a MOD-032 requirement but instead allow it to be optional.

This item will be added to the 2023 roadmap discussion and discussed further in the new consolidated MDAG FG meeting.

AGENDA ITEM 9 – CPPTF COMMON MODEL

SPP staff, Brandon Hentschel, updated the group on the current CPPTF Common Model and Common Topology discussion. The recommendations were approved by TWG and will be presented in a future ESWG meeting.

AGENDA ITEM 10 – 2022 SERIES MDAG MODEL BUILD/2023 TPL UPDATES

AGENDA ITEM 10A – DYNAMICS

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

- Completed Tasks
 - Incorporated Portfolio
 - Created 24L, 24L-SENS, 24S-SENS
 - 24L was created to match ITP BR models used in TPL assessment
- In-Progress Tasks
 - Initializing and Fault Testing
- Future Tasks
 - Post TPL Models (11/28)

Informed MDAG of the proposed TPL renaming convention and reminded the group of key dates.

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AGENDA ITEM 11 – 2023 SERIES MDAG MODEL BUILD/2023 TPL UPDATES

AGENDA ITEM 11A – POWERFLOW

SPP staff, Lottie Jones, updated the group on the 2023 MDAG Powerflow model build and provided an update on the 2022 MMWG Powerflow cases as well.

- Completed Tasks
 - Posted Pass 1 -Trial 2 models and materials
 - Unlocked MOD/EDST for submissions for Pass 2 – Trial 1
 - Performed data quality checks
- In-Progress Tasks
 - Review MMWG 2022 final models, ties, and transactions for external merge
 - Review Transmission Service Inputs (AG1) Data
- Future Tasks
 - Lockdown MOD/EDST for Pass 2 – Trial 1
 - Review data submissions via MOD/EDST/GlobalScape for Pass 2 – Trial 1

In addition to the MDAG update, SPP staff informed MDAG about the EDST 4.1 update that will go into production on 12/1.

AGENDA ITEM 11B – SHORT CIRCUIT

SPP staff, Eric Sullivan, updated the group on the current 2023 MDAG Short Circuit model build.

- Completed Tasks
 - Posted Pass 1 - Trial 2 models and materials
- Future Tasks
 - Review data submissions via email and GlobalScape for Pass 2 - Trial 1

SPP staff also reminded the group of key short-circuit dates.

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AGENDA ITEM 11C – GMD

SPP staff, Eric Sullivan, updated the group on the upcoming GMD deadline and the current GMD status.

- Completed Tasks
 - GMD Spreadsheet Updated with Area/Owner Numbers in the Substation, Transformer, and Branch Tabs
 - Owner numbers were added based on Owner 1 in PSSE
 - Sent Out for Member Review to be Returned by November 25, 2022
- Future Tasks
 - Update with Member Changes

AGENDA ITEM 11D – DYNAMICS

SPP staff, Zach Sabey, updated the group on the 2023 MDAG Dynamics model build and proposed a draft 2023 Dynamics schedule. This proposed agenda will be presented for approval at the December MDAG meeting.

AGENDA ITEM 12 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item: Connect Shawn with Doug Bowman for the SAR requirements**
- **Action Item: Post the updated schedule on SPP.org**
- **Action Item: Post the new items out to the Roadmap Process**

AGENDA ITEM 13 – ADJOURN

John Turner adjourned the meeting at 11:33 a.m. (CST).

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Respectfully Submitted,

Lottie Jones
Secretary

Attachments

NOV17_Attach1- 1e. MDAG Meeting Agenda.docx

NOV17_Attach2- 1f. October 20, 2022, Meeting Minutes.docx

NOV17_Attach3- 4. MDAG Consolidation Proposal

NOV17_Attach4- 5. Discussion of Future Meetings

NOV17_Attach5- 6. Modification to 2023 MDAG Schedule



2023 MDAG SCHEDULE PASS 2, TRIAL 1 SHORT CIRCUIT POSTING CORRECTION

ERIC SULLIVAN

OVERVIEW

- Schedule Correction
- Background Information
- Approval Request
- Questions

2023 MDAG SCHEDULE PASS 2, TRIAL 1 SHORT CIRCUIT CORRECTION

• Current Schedule

SPP Staff Build/Solve Pass 2 Powerflow models (Merge with latest MMWG models)	29 days	Mon 11/28/22	Fri 1/6/23
SPP Holidays - Christmas days	2 days	Thu 12/22/22	Sun 12/25/22
SPP Holidays -New Years days	1 day	Mon 1/2/23	Mon 1/2/23
SPP Holidays - Dr. Martin Luther King, Jr. Day	1 day	Mon 1/16/23	Mon 1/16/23
SPP Staff Post Pass 2 - Trial 1 PF and SC models and DocuCode for Data Submitter Review	0 days	Fri 1/6/23	Fri 1/6/23
Data Submitters review Pass 2 - Trial 1 models, provide Final Transmission Service Inputs (AG1) Data and submit PF and SC data updates through MOD and EDST for use in Pass 2 - Trial 2 Models	10 days	Mon 1/9/23	Fri 1/20/23
MDAG Face-to-Face Meeting	2 days	Tue 1/10/23	Wed 1/11/23
SPP Staff for Pass 2 - Trial 2 Lock Down MOD and EDST	10 days	Mon 1/23/23	Fri 2/3/23
SPP Staff compiles EDST/MOD data, dispatch information, and review projects	5 days	Mon 1/23/23	Fri 1/27/23
SPP Staff Build/Solve Pass 2 Powerflow models	10 days	Mon 1/23/23	Fri 2/3/23
SPP Staff Review/Build Pass 2 Short Circuit Models (Merge with latest SERC SC Models)	5 days	Mon 2/6/23	Fri 2/10/23
SPP Staff Post Pass 2 PF and SC models and DocuCode for Data Submitter Review	0 days	Fri 2/10/23	Fri 2/10/23

Includes SC Language

Includes Face-to-Face Meeting

• Proposed Update

SPP Staff Post Pass 2 - Trial 1 PF and DocuCode for Data Submitter Review	0 days	Fri 1/6/23	Fri 1/6/23
Data Submitters review Pass 2 - Trial 1 models, provide Final Transmission Service Inputs (AG1) Data and submit PF and SC data updates through MOD and EDST for use in Pass 2 - Trial 2 Models	10 days	Mon 1/9/23	Fri 1/20/23
SPP Staff for Pass 2 - Trial 2 Lock Down MOD and EDST	10 days	Mon 1/23/23	Fri 2/3/23
SPP Staff compiles EDST/MOD data, dispatch information, and review projects	5 days	Mon 1/23/23	Fri 1/27/23
SPP Staff Build/Solve Pass 2 Powerflow models	10 days	Mon 1/23/23	Fri 2/3/23
SPP Staff Review/Build Pass 2 Short Circuit Models (Merge with latest SERC SC Models)	5 days	Mon 2/6/23	Fri 2/10/23
SPP Staff Post Pass 2 PF and SC models and DocuCode for Data Submitter Review	0 days	Fri 2/10/23	Fri 2/10/23

Removes SC Language

Removes Face-to-Face Meeting

BACKGROUND INFORMATION

- It was discussed in the May MDAG meeting and proposed to use Schedule Option 1 as shown below:

SCHEDULE OPTION 1

- Begins:
 - 7/11/22
- Ends:
 - 3/27/22
- Milestones:
 - Pass 0 // Pass 1(Trial 1 & 2) // Pass 2 (Trial 1 & 2) // Final
- Lockdown:
 - 1/20/23
- Pros/Cons
 - Pass 2-Trial 1 is power flow only – no separate SC posting that pass
 - Longer time to submit data into MOD with additional pass, 5 day contingency at end of build which puts voting on 4 days before FERC filing

- This option was proposed by SPP as the completed generator retirement list and updated SERC final models will not be available until it is time to build the Pass 2 Trial 2 Short Circuit models

BACKGROUND INFORMATION

- Option 1 was chosen as the preferred option as outlined in the May MDAG meeting minutes; however, it was discovered that one SC mention was left in the schedule regarding posting Pass 2 Trial 1 SC models

APPROVAL REQUEST

- SPP would like to request the approval of the schedule as updated including the removal of a Pass 2 Trial 1 SC model and updating the MDAG Face-to-Face meeting to June 15 2023.



QUESTIONS?

MONTH	MDAG DATE	MDAG Time (CT)	MDAG LOCATION
Meeting 1	19-Jan	9-12	Net Conference Only
Meeting 2	16-Feb	9-12	Net Conference Only
Meeting 3	20-Mar	1-4	Net Conference Only
Meeting 4	20-Apr	9-12	Net Conference Only
Meeting 5	18-May	9-12	Net Conference Only
Meeting 6	15-Jun	9-12	In person
Meeting 7	17-Aug	9-12	Net Conference Only
Meeting 8	21-Sep	9-12	Net Conference Only
Meeting 9	19-Oct	9-12	Net Conference Only
Meeting 10	16-Nov	9-12	Net Conference Only
Meeting 11	14-Dec	9-12	Net Conference Only

DRAFT 2023 MDAG SCHEDULE

MDAG ALT. LOCATION	FG DATE (Tuesday Option)	FG Time (CT) (Tuesday Option)	FG DATE (Thursday Option)
	1/24/2023	1-3	1/26/2023
	2/21/2023	1-3	2/23/2023
	3/14/2023	1-3	3/16/2023
	4/25/2023	1-3	4/27/2023
	5/23/2023	1-3	5/25/2023
	6/20/2023	1-3	6/22/2023
	7/25/2023	1-3	7/27/2023
	8/22/2023	1-3	8/24/2023
	9/12/2023	1-3	9/14/2023
	10/24/2023	1-3	10/26/2023
	11/14/2023	1-3	11/19/2023
	12/12/2023	1-3	12/7/2023

FG Time (CT) (Thursday Option)	FG LOCATION
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10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

10-12 **Net Conference Only**

Notes

Merge June/July Meeting Meeting before model kick off 7/10.
Potential in person meeting.

MEETING LOCATION OPTIONS

ARKANSAS

[Southwest Power Pool Campus](#)

201 Worthen Drive
Little Rock, AR 72223

COLORADO

[Tri-State](#)

1100 West 116th Avenue
Westminster, CO 80234

KANSAS

[Kansas Power Pool \(KPP\)](#)

100 North Broadway
Wichita, KS 67202

MISSOURI

[Evergy](#)

1200 Main Street
Kansas City, MO 64105

OKLAHOMA

[Grand River Dam Authority](#)

9933 East 16th Street
Tulsa, OK 74128

[Oklahoma Municipal Power Authority](#)

2701 West I-35 Frontage Road
Edmond, OK 73013

TEXAS

[Golden Spread Electric Cooperative](#)

905 South Fillmore
Amarillo, TX 79101

[Golden Spread Electric Cooperative](#)

4717 South Loop 289
Lubbock, TX 79424

[Tenaska Power Services](#)

300 East John Carpenter Freeway
Irving, TX 75062

ity (GRDA)

ver Authority (OMPA)

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operative (GSEC)

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reeway



2022 MDAG DYNAMICS MODEL BUILD UPDATE

ZACH SABEY, PE

THEO BROWN



2022 SERIES MDAG DYNAMIC MODEL BUILD UPDATE

- Moved to PSSE v34.9.0 due to dynamics issues in v34.8.2
- Completed Tasks
 - Posted Proposed TPL Model Set (11/28)
- In-Progress Tasks
 - Review and Approval of Final TPL Models

UPDATES RECEIVED AND INCLUDED (BY 12/7/2022)

- GRDA Generator updates

STAFF RECOMMENDATION

- Staff will be recommending to MDAG for approval of the following TPL models. Contingent upon including updated member information.
 - 2023TPL-DS34-RED-FINAL-24L.zip
 - 2023TPL-DS34-RED-FINAL-24L-SENS.zip
 - 2023TPL-DS34-RED-FINAL-24S.zip
 - 2023TPL-DS34-RED-FINAL-24S-SENS.zip
 - 2023TPL-DS34-RED-FINAL-32S.zip

EXTRA REMINDERS

- Dynamics v35 model build with begin January 2023
 - USRMDL .dll's will need to be updated
 - Original notice of v35 transition was in kick-off email (January 2022)

EXTRA REMINDERS

- PSSE V35 Testing by PowerTech Labs
 - 2 - List of USRMDL_ObjLibDll_SPP.xlsx
 - Review column H for notes based on the simulation
 - New .dll will be needed for:
 - “Turn off the model in DYRE file and GNETted”
 - Further testing needed for:
 - “off-line”
 - No changes needed for:
 - “Handled by PSSE or SRC code”

QUESTIONS?

Task Name	Duration	Start	Finish
2023 Series MDAG Model Build Schedule (Dynamics) - PSS/E v35.3.x Note: The SPP MDAG Model Development Procedure Manual 2023 v6.0 will be utilized for this model build.	338 days	Tue 1/10/23	Thu 12/14/23
Initial Data Update	23 days	Tue 1/10/23	Mon 2/13/23
Initial Data Update - Build and Post DYRE Files, WindFarm Data, Docureport, Most Severe TPL Fault Submission Template, and Unacceptable User Models	3 days	Tue 1/10/23	Fri 1/13/23
SPP Holiday -Dr. Martin Luther King Jr. Birthday	1 day	Mon 1/16/23	Mon 1/16/23
Initial Data Update -Members Submit Data Updates	20 days	Mon 1/16/23	Mon 2/13/23
Initial Data Update - Member Data Due	0 days	Mon 2/13/23	Mon 2/13/23
Transmission Planner Most Severe TPL Fault Testing Submission Data Due - VOLUNTARY SUBMISSION	0 days	Mon 2/13/23	Mon 2/13/23
Dynamic Model Adjustments	24 days	Tue 2/14/23	Fri 3/17/23
Dynamics Adjustment (Dyre file, CMLD Load and User Defined Model Update)	24 days	Tue 2/14/23	Fri 3/17/23
Member/Stakeholder Holiday -President's Birthday	0 days	Mon 2/20/23	Mon 2/20/23
Lastest MMWG and MDAG Series Models	0 days	Fri 3/17/23	Fri 3/17/23
MMWG Dynamic Models	0 days	Fri 3/17/23	Fri 3/17/23
Receive 2023 MDAG Powerflow Final Models	0 days	Fri 3/17/23	Fri 3/17/23
Powerflow Model Adjustments	20 days	Mon 3/20/23	Fri 4/14/23
Powerflow Model Reduction, Powerflow Adjustments, Updates, Wind Farm Topology, X-Source	20 days	Mon 3/20/23	Fri 4/14/23
Dynamic Case Initialization	34 days	Fri 4/14/23	Thu 6/1/23
DC Tie Model Updates - Deadline only for members who have ownership in a DC tie	0 days	Fri 4/14/23	Fri 4/14/23
Case & Dyre File Corrections based on Initialization Messages	34 days	Fri 4/14/23	Thu 6/1/23
Build Initial Models	40 days	Fri 6/02/23	Fri 7/28/23
No-fault Testing	10 days	Fri 6/02/23	Fri 6/16/23
Disturbance Testing	10 days	Fri 6/16/23	Fri 6/30/23
Command Line Testing	5 days	Fri 6/30/23	Fri 7/07/23
SPP Holiday - Fourth of July	0 days	Tue 7/04/23	Tue 7/04/23
Transmission Planner Submitted Most Severe TPL Fault Testing	10 days	Fri 7/07/23	Fri 7/21/23
Offline Wind Initialization	5 days	Fri 7/21/23	Fri 7/28/23
Dynamic Case Review and Finalization	12 days	Fri 7/28/23	Tue 8/15/23
Post Initial Models	2 days	Fri 7/28/23	Mon 7/31/23
Member Review of Initial Models	10 days	Tue 8/01/23	Mon 8/14/23
Member Final Data Submission Due	0 days	Mon 8/14/23	Mon 8/14/23
Data Update - Build Updated Models	27 days	Tue 8/15/23	Thu 9/21/23
Build Final Models	16 days	Tue 8/15/23	Wed 9/06/23
Post Proposed Final MDAG Models	1 day	Thu 9/07/23	Thu 9/07/23
Member Review of Proposed Final MDAG Dynamic Models	10 days	Thu 9/07/23	Thu 9/21/23
SPP Holiday - Labor Day	0 days	Mon 9/04/23	Mon 9/04/23
MDAG Finalization - Conference Call Vote	0 days	Thu 9/21/23	Thu 9/21/23
TPL Data Update - Build TPL Models	71 days	Fri 9/01/23	Tue 12/12/23
TPL Sensitivity Dispatch	15 days	Fri 9/01/23	Fri 9/22/23
TPL Data Update - Build Final Models including Board Decisions (NTC addition/withdrawals)	46 days	Fri 9/22/23	Mon 11/27/23
SPP Holiday - Thanksgiving Day	2 days	Thr 11/23/23	Fri 11/24/23
Post Final TPL MDAG Models	0 days	Tue 11/28/23	Tue 11/28/23
Member Review of Final TPL MDAG Dynamic Models	10 days	Wed 11/29/23	Tue 12/12/23
TPL MDAG Finalization - Conference Call Vote	0 days	Thu 12/14/23	Thu 12/14/23

Modeling data shall be submitted per this schedule. For data submittals due on a Friday, data submission is allowed through the weekend until Monday at 8:00 AM. If that Monday falls on a SPP Holiday, data submissions are due on Tuesday by 8:00 AM. SPP may extend the data submittal periods in the schedule, if the SPP Models On Demand and Engineering Data Submittal Tool (EDST) web portals suffer technical difficulties during the data submittal periods identified in the Schedule

Abbreviation	Description
MDAG PF	MDAG Powerflow
MDAG SC	MDAG Short Circuit
MDAG DYN	MDAG Dynamics
ITP BR PF	ITP Base Reliability Powerflow
ITP MPM F1	ITP MPM Future 1
ITP MPM F2	ITP MPM Future 2
ITP MEM F1	ITP MEM Future 1
ITP MEM F2	ITP MEM Future 2
ITP BR SC	ITP Base Reliability Short Circuit

Year Definition	2023 Series MDAG / 2024 ITP Model Selection										
	Year	Season	MDAG PF	MDAG SC	MDAG DYN	ITP BR PF	ITP MPM F1 (TBD)	ITP MPM F2 (TBD)	ITP MEM F1	ITP MEM F2	ITP BR SC
1	2024	Light Load	1		1						
1	2024	Spring	1								
1	2024	Summer	*1	1	1	1					
1	2024	Fall	1			1					
1	2024	Winter	*1		1	1					
2	2025	Light Load	1		1	1	1				
2	2025	Spring	1			1					
2	2025	Summer	1		1	1	1		1		1
2	2025	Fall				1					
2	2025	Winter	1			1					
3	2026	Light Load	1								
3	2026	Summer	1		1						
5	2028	Light Load	1		1	1	1	1			
5	2028	Summer	1	1	1	1	1	1	1	1	1
5	2028	Summer Shoulder	1								
5	2028	Winter	1		1	1					
10	2033	Light Load				1	1	1			
10	2033	Summer	1		1	1	1	1	1	1	1
10	2033	Winter	1		1	1					
Stakeholder Reviewed Total		62	17	2	11	14	6	4	3	2	3