

SOUTHWEST POWER POOL, INC.

MODEL DEVELOPMENT ADVISORY GROUP MEETING

April 20, 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 March Meeting Minutes (**Approval Item***)
2. Review of Past Action Items Lottie Jones (10 mins)
3. MDAG In Person Meeting(**Approval Item***).....MDAG (5mins)
 - a. June 14-15, 2023 – SPP - Workshop
4. Rate 3Chris Davis (20 mins)
 - a. DPP Process
5. Rate 3 Straw Poll MDAG (10 mins)
6. CPPTF Common Model Update Brandon Hentschel (30 mins)
7. Break..... All (10 mins)
8. 2023 series MDAG Model Build/Application Updates
 - a. DynamicsZach Sabey/Theo Brown (10 mins)
 - b. MOD-033 Event Selection.....Eric Sullivan (15 mins)
9. Focus Group Updates Eric Sullivan (5 mins)
10. RAD TF David Duhart (15 mins)
11. MDAG Workshop TopicsLottie 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.

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. MDAG: May 18, 2023 (9:00 AM- 12:00 PM)
- b. MDAG FG: April 25, 2023 (1:00 PM – 3:00 PM)

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..... Lottie Jones (5 mins)

- a. Agenda Review – additional comments request

14. Adjourn..... All

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

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**

Meeting Date(s)	1/19/2023	2/16/2023	3/20/2023	4/20/2023
Meeting Length (hrs)	3	2.5	3	2
Number of Votes Taken	2	2	5	3
Overall Attendance	61	61	68	69

Member Name	Company	Current Member	1/19/2023	2/16/2023	3/20/2023	4/20/2023
Alex Mucha	Oklahoma Municipi	Yes	WebEx	WebEx	WebEx	WebEx
Brianna Haug (Vice Chair)	Western Area Powe	Yes	WebEx	WebEx	WebEx	WebEx
Dustin Betz	Nebraska Public Po	Yes	WebEx	WebEx	WebEx	WebEx
Jason Shook	GDS Associates	Yes	WebEx	WebEx	WebEx	WebEx
Jerry Bradshaw	City Utilities of Sprin	Yes	WebEx	WebEx	WebEx	WebEx
Jesse Kreutzfeldt	Missouri River Ener	Yes	WebEx	WebEx	WebEx	WebEx
Joe Fultz	Grand River Dam Ai	Yes	WebEx	WebEx	WebEx	Absent
John Turner (Chair)	Western Farmers El	Yes	WebEx	WebEx	WebEx	WebEx
John Vana	Golden Spread Elec	Yes	WebEx	WebEx	WebEx	WebEx
Liam Stringham	Sunflower Electric P	Yes	WebEx	WebEx	WebEx	WebEx
Lottie Jones (Staff Secretary)	SPP	Yes	WebEx	WebEx	WebEx	WebEx
Preston Blinsky	Basin Electric Power	Yes	WebEx	WebEx	WebEx	Absent
Reené Miranda	Southwestern Publi	Yes	WebEx	WebEx	WebEx	WebEx
Ryan Baysinger	Eversgy	Yes	WebEx	WebEx	WebEx	WebEx
Scott Rainbolt	American Electric Pt	Yes	WebEx	WebEx	WebEx	WebEx
Scott Schichtl	Arkansas Electric Co	Yes	WebEx	WebEx	WebEx	WebEx
Steve Hohman	Omaha Public Powe	Yes	WebEx	WebEx	WebEx	WebEx
Tyler Baxter	Com Belt Power Co	Yes	WebEx	WebEx	WebEx	Proxy

Guest Name	Company	Current Member	1/19/2023	2/16/2023	3/20/2023	4/20/2023
Adam Mummert	Burns & McDonnell	No		WebEx		
Adam Nmlil	Oklahoma Gas and	No	WebEx	WebEx	WebEx	WebEx
Afshin Salehian	SPP	No				
Adam Schieffer	OPPD	No			WebEx	
Ala Wadi	Liberty Utilities	No		WebEx	WebEx	WebEx
Amine Chenaf	DNV	No				
Andrew Berg	Missouri River Ener	No		WebEx	WebEx	
Andrew Howard	Lincoln Electric Syst	No		WebEx		
Antonio Barrera	Southwestern Publi	No	WebEx			WebEx
Armin Sehic	Nebraska Municipal	No	WebEx	WebEx	WebEx	WebEx
Aster Amalhaton	Nebraska Municipal	No	WebEx		WebEx	
Ben Hammer	WAPA	No		WebEx		
Becca McCann	SPP	No	WebEx	WebEx	WebEx	WebEx
Ben Mitchell	SPP	No				
Blake Poole	Eversgy	No				
Bobby Gray	Liberty Utilities	No	WebEx	WebEx	WebEx	
Brandon Hentschel	SPP	No	WebEx	WebEx	WebEx	
Brian Johnson	AEP	No			WebEx	
Broske Keene	SPP	No				
Bruce Dall	Nebraska Municipal	No				
Calvin Coates	Kansas Power Pool	No	WebEx	WebEx	WebEx	WebEx
Casey Cathey	SPP	No				
Charles Costello	Siemens	No				
Cho Wang	American Electric Pt	No				
Chris Colson	Western Area Powe	No		WebEx		WebEx
Chris Davis	SPP	No				WebEx
Chris Gillen	Tit State	No				
Chris Rich	Oklahoma Gas and	No	WebEx		WebEx	
Clarence Campbell	SPS	No	WebEx		WebEx	WebEx
Claire Vigasaa	Burns & McDonnell	No				
Comer Sweet	City Utilities of Sprin	No	WebEx	WebEx	WebEx	WebEx
Curtis Miller	Western Farmers El	No				
Dale Reinhold	Hastings Utilities	No		WebEx		
Damien Burbage	AECI	No				
Danielle Borg	Sunflower Electric P	No	WebEx		WebEx	WebEx
Darian Richards	SPP	No				
David Bromberg	Pearl Street Technol	No				
David Duhart	SPP	No	WebEx	WebEx	WebEx	WebEx
David Mendoza	Grand River Dam Ai	No	WebEx	WebEx	WebEx	WebEx
David Zhong	American Electric Pt	No	WebEx		WebEx	WebEx
Derek Brown	Eversgy	No				
Devon Pehrson	National Grid Rene	No		WebEx		
Diego Toledo	Grand River Dam Ai	No	WebEx	WebEx	WebEx	
Douglas Bowman	SPP	No		WebEx		
Dona Parks	Grand River Dam Ai	No	WebEx	WebEx	WebEx	
Donald Hargrove	Oklahoma Gas and	No				
Dustin Mooeher	Liberty Utilities	No				WebEx
Dylan Tate	Tit State	No				
Ebrahim Rezaei	American Electric Pt	No				
Eddie Watson	SPP	No	WebEx	WebEx	WebEx	WebEx
Edin Terzic	Lincoln Electric Syst	No				
Eli Nyambegera	Sunflower Electric P	No				
Elijah Salinas	LES	No		WebEx		WebEx
Ellen Cook	SPP	No				
Eric Jones	Omaha Public Powe	No	WebEx	WebEx	WebEx	WebEx
Eric Sullivan	SPP	No	WebEx	WebEx	WebEx	WebEx
Erik Cathey	SPP	No				
Erik Voice	Salem Electric	No			WebEx	
Estevan Padilla	SPP	No		WebEx	WebEx	WebEx
Frank Favela	Southwestern Publi	No				
Garrick Nelson	Western Area Powe	No				WebEx
Gary Boerger	Oklahoma Gas and	No				
Gavin Kovotny	Eversgy	No				
Glen Hallee	City Utilities of Sprin	No			WebEx	
Grace Bouziden	Oklahoma Gas and	No				
Hannah Mason	Light Source BP	No				
Harriet Walsh	Orsted	No				
Hugh Benfer	SPP	No	WebEx	WebEx	WebEx	WebEx
James Olenfuss	Savion Energy	No				
Jason Menke	Nebraska Public Po	No				WebEx
Jeff Knotttek	City Utilities of Sprin	No				
Jeff McDiarmid	SPP	No	WebEx			
Jeff Plew	NextEra	No				
Jeffrey Taylor	ITC	No	WebEx	WebEx	WebEx	WebEx
Jerad Ethridge	Oklahoma Gas and	No				
Jerry Severson	Basin Electric Power	No		WebEx		
Jesse Kreutzfeldt	Missouri River Ener	No				
Joe Williams	Western Farmers El	No				
John Boshears	City Utilities of Sprin	No	WebEx			
John Mayhan	Omaha Public Powe	No				WebEx
John Vana	Golden Spread Elec	No				
John Varnell	Tenaska	No				
John Wilson	Southern Current LI	No				
Jon Langford	Orsted	No				
Jonathan Aus	East River	No				
Josh Hesselbein	Arkansas Electric Co	No	WebEx	WebEx		WebEx
Joshua Pilgrim	SPP	No				WebEx
Josie Daggett	WAPA	No				WebEx
Juliano Freitas	SPP	No				
Justin Heit	1890 and Company	No				
Kadeem Brown	AEP	No		WebEx	WebEx	WebEx
Kalun Kelley	WFEC	No	WebEx	WebEx		WebEx
Kelsey Allen	SPP	No				
Kim Farris	SPP	No				
Kim Grogan	Eversgy	No				
Kimberly Woods	SPP	No				
Kristie Broom	SPP	No	WebEx	WebEx	WebEx	WebEx
Kristen Darden	SPP	No				
Larry Brusseau	Com Belt Power Co	No				WebEx
Liz Gephardt	SPP	No				
Logan Peterson MPC	Minnesota	No	WebEx	WebEx		WebEx
Mae Cruz	Southwestern Publi	No	WebEx		WebEx	WebEx
Marc Moor (Eversgy)	Eversgy	No				
Margaret Kristian	National Grid Rene	No			WebEx	
Martin Green	American Electric Pt	No				
Mason Favazza	SPP	No	WebEx			
Matthew Alvarado	IUB	No				
McKady Kellam	Eversgy	No				
Miah Archambault	Enel	No			WebEx	
Michael Bowman	City Utilities of Sprin	No	WebEx		WebEx	
Mike Swan	Omaha Public Powe	No		WebEx	WebEx	WebEx
Moses Rostich	Gridliance	No				
Montafa Saadighizadeh	SPP	No				
Nathan Davis	Liberty Utilities	No	WebEx		WebEx	WebEx
Nathan McNeil	Midwest Energy	No				
Nicholas Hoelzeman	Eversgy	No			WebEx	
Nicole Hicks	WAPA	No			WebEx	
Nitin Kushwaha	National Grid Rene	No				
Neeya Toleman	NextEra	No				WebEx
Nolan Fertig	SPP	No				
Pallab Datta	Eversgy	No	WebEx	WebEx	WebEx	WebEx
Paul Vook	Omaha Public Powe	No	WebEx	WebEx		WebEx
Peter Jones	Savion	No				
Phil Westby	BEPC	No		WebEx		
Prajakta Pawar	Quanta Technology	No				WebEx
Ransome Egunjobi	Enel	No				
Richard Miner	Liberty Utilities	No				
Ryan Baysinger	Eversgy	No				
Ryan Benton	Oklahoma Gas and	No		WebEx		
Scott Holland	SWPA	No				
Scott Jordan	SPP	No			WebEx	
Scott Mjlin	Southwestern Powe	No	WebEx	WebEx	WebEx	WebEx
Seth Cochran	DC Energy	No		WebEx		
Shalini Gupta	Aper Clean Energy	No				
Shannon Mickens	SPP	No				
Shawna Satterwhite	Oklahoma Gas and	No	WebEx			
Sherri Massey	SPP	No				WebEx
Steve Hardebeck	Oklahoma Gas and	No				
Steve Purdy	SPP	No				
Steven Park	Sunflower Electric P	No				
Sunny Raheem	SPP	No	WebEx		WebEx	WebEx
Taliqua Jones	SPP	No				
Tanner New	Sunflower Electric P	No	WebEx	WebEx		
Thomas Burns	SPP	No				
Theo Brown	SPP	No	WebEx		WebEx	WebEx
Timothy Sell	ITS	No			WebEx	
Todd Chwalkowski	EDF	No	WebEx			
Tom Belshe	Eversgy	No				
Tom Mayhan	Omaha Public Powe	No				
Tony Green	SPP	No		WebEx		
Walt Shumate	Shumate & Associat	No	WebEx	WebEx	WebEx	WebEx
Xiaoou Wang	Enel	No				
Yamin Sakalla	Enel	No				
Ying Yang	Duke Energy	No			WebEx	WebEx
Zach Andera	Burns & McDonnell	No				
Zach Sabey	SPP	No	WebEx	WebEx	WebEx	WebEx

Model Development Advisory Group

August 2021 - July 2022

Name	Company	Is Current Member?
Alex Mucha	Oklahoma Municipal Power Authority	Yes
#REF!	#REF!	#REF!
Brianna Haug (Vice Chair)	Western Area Power Administration	Yes
Dustin Betz	Nebraska Public Power District	Yes
#REF!	#REF!	#REF!
Jason Shook	GDS Associates	Yes
#REF!	#REF!	#REF!
#REF!	#REF!	#REF!
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
#REF!	#REF!	#REF!
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	15	0	2	88%
Staff	RTO	#REF!	#REF!	#REF!	N/A
TO	Investor Owned Utility	17	0	0	100%
TU	Cooperative	16	1	0	100%
TU	Cooperative	#REF!	#REF!	#REF!	N/A
TO	Cooperative	14	0	3	82%
TU	Municipal	#REF!	#REF!	#REF!	N/A
TO	State	#REF!	#REF!	#REF!	N/A
TO	Cooperative	15	1	1	94%
TO	State	14	1	2	88%
TO	Investor Owned Utility	#REF!	#REF!	#REF!	N/A
TO	Federal	16	1	0	100%
TO	State	13	2	2	88%
TU	Investor Owned Utility	12	5	0	100%
TU	Municipal	#REF!	#REF!	#REF!	N/A
TU	Investor Owned Utility	15	2	0	100%
TU	Investor Owned Utility	15	2	0	100%
TU	Cooperative	16	1	0	100%
TO	Cooperative	#REF!	#REF!	#REF!	N/A
TO	Cooperative	13	2	2	88%

Annual Assessment Totals**Average Length of Meetings (hrs) 3****Number of Votes Taken 71****Average Overall Attendance 60****Total Meetings this Assessment 20****Live 1****Teleconference 19****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

March 20, 2023

SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

March 20, 2023 1:00 pm – 4:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** Send out Doodle Poll with in-person MDAG workshop meeting date options.
- **Action Item:** SPP TP team to discuss the benefits of having the Rate 3 data during the DPP process.

Motions:

- **Motion:** Scott Schichtl motioned to approve the presented agenda as modified. Mae Cruz 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 February 16, 2023, meeting minutes as presented. Jesse Kreutzfeldt seconded the motion. The group did not voice concerns during the discussion of the motion.
- **Motion:** Scott Schichtl motioned to approve the 2023 MDAG Powerflow Models with the caveat that all mentioned corrections are applied to the proposed final models and posted after approval. Ryan Baysinger seconded the motion. The group did not voice concerns during the discussion of the motion.
- **Motion:** Brianna Haug motioned to approve the 2023 MDAG Short Circuit Models with the caveat that all mentioned corrections are applied to the proposed final models and posted after approval. Alex Mucha seconded the motion. The group did not voice concerns during the discussion of the motion.
- **Motion:** John Vara motioned to approve the 2023 MDAG GMD Models. Preston Blinsky seconded the motion. The group did not voice concerns during the discussion of the motion.

MDAG MINUTES

March 20, 2023

Southwest Power Pool MODEL DEVELOPMENT ADVISORY GROUP MEETING

March 20, 2023 1:00 pm – 4:00 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 1:02 p.m. (CST) with Quorum. SPP Staff Secretary, Lottie Jones, read the anti-trust statement to the group.

MDAG MINUTES

March 20, 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	Michael Swan	Yes	Omaha Public Power District
Reené Miranda	Yes	Mae Cruz	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			Golden Spread Electric
Ryan Baysinger	Yes			Evergy
Jesse Kreuzfeldt	Yes			Missouri River Energy Services

Material: MAR20_Attach2 - 1c. MDAG Conference Call Attendance-03-20-2023

MDAG MINUTES

March 20, 2023

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. Lottie mentioned to the group that Becca McCann will give the CPPTF update instead of Brandon Hentschel.

Motion: Scott Schichtl motioned to approve the presented agenda as modified. Mae Cruz seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: MAR20_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS FEBRUARY 16, 2023 MEETING MINUTES (**APPROVAL ITEM**)

Lottie Jones asked the group if they had any proposed changes for the previous February 16, 2023, meeting minutes. The time for the March MDAG meeting was modified as well as amending one date from 2022 to 2023.

Motion: John Vara motioned to approve February 16, 2023, meeting minutes as presented. Jesse Kreutzfeldt seconded the motion. The group did not voice concerns during the discussion of the motion.

Material: MAR20_Attach3- 1f. February 16, 2023, Meeting Minutes.docx

MDAG MINUTES

March 20, 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 – SPP will be presenting this topic at the spring MMWG meeting.
- Action Item 200 – SPP to perform training on powerflow anomaly and perform the work at the in-person workshop.
- Action Item 202 – SPP to provide an update during the April Focus Group meeting.

AGENDA ITEM 3 – 2023 SERIES MDAG MODEL BUILD

AGENDA ITEM 3A – POWERFLOW (APPROVAL ITEM*)

SPP staff, Lottie Jones updated the group on the 2023 MDAG Powerflow Model Build.

Recommendation: SPP staff recommends that the 2023 MDAG powerflow models be approved by the Model Development Advisory Group with the caveat that all mentioned corrections are applied to the proposed final models and posted after approval.

Brianna asked SPP staff if updates could still be made to the 2023 MDAG Powerflow models. Lottie mentioned that these updates can still be made today, and final models will be posted tomorrow.

Brianna mentioned a red check that does not belong to WAPA that needs to be cleared off of the DocuCheck errors. Lottie mentioned that an exception could be obtained for this red check.

Motion: Scott Schichtl motioned to approve the 2023 MDAG Powerflow Models with the caveat that all mentioned corrections are applied to the proposed final models and posted after approval. Ryan Baysinger seconded the motion. The group did not voice concerns during the discussion of the motion.

AGENDA ITEM 3B – SHORT CIRCUIT (APPROVAL ITEM*)

SPP staff, Eric Sullivan updated the group on the 2023 MDAG Short Circuit Model Build.

Recommendation: SPP staff recommends that the 2023 MDAG Short Circuit models be approved by the Model Development Advisory Group with the caveat that all mentioned corrections are applied to the proposed final models and posted after approval.

MDAG MINUTES

March 20, 2023

Motion: Brianna Haug motioned to approve the 2023 MDAG Short Circuit Models with the caveat that all mentioned corrections are applied to the proposed final models and posted after approval. Alex Mucha seconded the motion. The group did not voice concerns during the discussion of the motion.

AGENDA ITEM 3C – GMD (APPROVAL ITEM)

SPP staff, Eric Sullivan updated the group on the 2023 MDAG GMD Model Build.

Steve Hohman mentioned a bus number correction to the GMD data that will be sent via email March 20th, 2023.

Recommendation: SPP staff recommends that the 2023 MDAG GMD model be approved by the Model Development Advisory Group.

Motion: John Vara motioned to approve the 2023 MDAG GMD Models. Preston Blinsky seconded the motion. The group did not voice concerns during the discussion of the motion.

AGENDA ITEM 4 – MDAG IN PERSON MEETING (APPROVAL ITEM)

AGENDA ITEM 4A – JUNE 14-15, 2023 – SPP – WORKSHOP

SPP staff, Lottie Jones would like to hold the in-person MDAG meeting on June 14th-15th 2023 in a workshop style.

Alex Mucha asked if the meeting could be held earlier than in the week (June 13th-14th).

Brianna Haug asked the group if it would be possible to do a Doodle Poll to find the best dates for the meeting.

This approval item will be moved to an email vote pending the Doodle Poll results (due 3/27).

Action Item: Send out Doodle Poll with in-person MDAG workshop meeting date options.

AGENDA ITEM 5 – FOCUS GROUP UPDATES

SPP staff, Eric Sullivan asked the group for some future MDAG FG meeting topics via email.

AGENDA ITEM 6 – CPPTF COMMON MODEL UPDATE

SPP staff, Becca McCann updated the group on the CPPTF Common Model Update.

MDAG MINUTES

March 20, 2023

SPP would like to focus on the renewable dispatch updates and language and how to submit the data.

SPP Member company asked if there would be one period to review the data or two? SPP Staff mentioned that the goal is to have two review periods for the data.

SPP Member company asked what would happen to the renewable values if a member were to not comment during the review period. This is not known at the time; however, it is likely that the data would be carried over from the last data input.

SPP Member company asked if there was any consideration in using something like EDST as a repository for the data? SPP mentioned that they could look into using EDST for data collection.

SPP Member company asked the group how it would handle pumped hydro storage that is both a load and a generator? This is not known at this time but ESRs are growing so SPP will follow this up for a future presentation.

AGENDA ITEM 7 – BREAK (10 MINUTES)

AGENDA ITEM 8 – 2023 SERIES MDAG MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 8A – DYNAMICS

SPP staff, Theo Brown updated the group on the 2023 MDAG Dynamics model build.

SPP Member company asked the group if everyone would be using PSSE V35 for all future updates. SPP notified members that V35 will be used for any future updates.

MDAG chair commented that getting the model through Vestas might take some time.

SPP Member company mentioned they are having issues upgrading from PSSE V33 to PSSE V35 due to increased costs. Eddie mentioned that it is understood that this cost can impact smaller entities and that it is still possible to submit updates via the Non-PSSE User Spreadsheet.

AGENDA ITEM 9 – IEEE 1547-2018

SPP staff, Scott Jordan updated the group on the IEEE adoption and upcoming changes associated with adopting the standard.

SPP will be moving forward with the Detailed Reference approach mentioned during the presentation if there are no comments or discussions from member entities.

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AGENDA ITEM 10 – RATE 3 PROPOSAL

SPP staff, Lottie Jones, and AEP Staff, Brian Johnson, updated the group on the Rate 3 proposal providing background on this project, two options for consideration, impact and benefits, SPP initial steps, and lastly opened the floor for MDAG discussion.

SPP Member company mentioned that they currently provide conductor limits for Rate 3. Would it be best for this to go towards ITP models or to add it as a requirement to MDAG models as well? Steve commented that consistency is preferred among the model sets. SPP would like to request this data during the normal data request period; however, this data does not currently have a high response rate.

SPP Member company commented that the benefits may not necessarily be there for smaller members and entities; however, they do currently have the data and would not have a problem supplying the data.

SPP Member company asked if the idea is for this proposal to be implemented in both the MDAG and ITP models. SPP staff mentioned, based on current proposed options, that it would be encouraged in the MDAG models and required for the ITP models.

SPP Member company mentioned a couple of concerns, including that with the increased transparency, could come a decrease in coordination. Conductor ratings also seem to be a bit ambiguous with regard to providing value instead of detailed information of the conductor. SPP commented that it is unclear how the data would be incorporated at this time. SPP mentioned that this data would be gathered just like the current Rate 1 and Rate 2 data, and he does not understand the hesitancy to provide the data. SPP would like this data to be reviewed to empower coordination among the members and entities. SPP Member company expressed that they would like to ensure that the data is not used in a way that is not currently being used in studies. This will add more to the model building process as well.

SPP Member company mentioned that he opposed to additional requirements during the model builds regarding facility ratings; adding that they would like SPP to continue to coordinate upgrades with TO's similar to how it has been done in past studies.

SPP Member company mentioned that CBPC favors providing the necessary data for Rate 3.

Another SPP Member company commented that this will add additional workload to the model builders. What is the benefit of gathering this information? Will this data allow SPP to tell what is needing to be replaced based upon the data? How would this streamline the DPP process?

SPP Member company commented that they don't currently provide this data but he can see the need from a transparency and coordination basis with regards to upgrades.

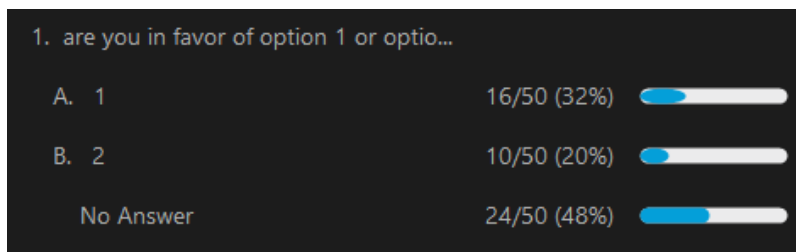
MDAG MINUTES

March 20, 2023

SPP Member company mentioned that there is significant benefit in the DPP stage to understand the limitations of the system. SPP has been very involved in making sure that the DPP process goes smoother for both SPP staff as well as members.

SPP staff mentioned that the TP team will be on the next call in order to discuss the benefits of having this data during the DPP process.

26 of the 50 attendees responded to the straw poll with the majority of them voting on Option 1.



Action Item: SPP TP team to discuss the benefits of having the Rate 3 data during the DPP process.

AGENDA ITEM 11 – DISCUSSION OF FUTURE MEETINGS

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

- a. MDAG: April 20, 2023 (9:00 AM – 12:00 PM)
- b. MDAG FG: April 25, 2023 (1:00 PM – 3:00 PM)

AGENDA ITEM 12 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** Send out Doodle Poll with in-person MDAG workshop meeting date options.
- **Action Item:** SPP TP team to discuss the benefits of having the Rate 3 data during the DPP process.

AGENDA ITEM 13 – ADJOURN

John Turner adjourned the meeting at 3:51 p.m. (CST)

MDAG MINUTES

March 20, 2023

Respectfully Submitted,

Lottie Jones
Secretary

Eric Sullivan
Secretary Assistant

Attachments

MAR20_Attach1- 1e. MDAG Meeting Agenda.docx

MAR20_Attach2 - 1c. MDAG Conference Call Attendance-03-20-2023

MAR20_Attach3- 1f. Feb 16, 2023, Meeting Minutes.docx

MAR20_Attach4- 3a. 2023 series MDAG Powerflow Model Build Update.pptx

MAR20_Attach5- 3b. 2023 Series MDAG Short Circuit Model Build Update.pptx

MAR20_Attach6- 3c. 2023 Series MDAG GMD Model Build Update.pptx

MAR20_Attach7- 6. CPP_2024 MDAG Model Build Discussion.pptx

MDAG MINUTES

April 20, 2023

SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

April 20, 2023 9:00 am – 12:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** MDAG to discuss a path forward via email for future discussions on the Rate 3 topic.
- **Action Item:** Review how the current MDAG dispatch workbook is being populated and look for areas of improvement.

Motions:

- **Motion:** Steve Hohman motioned to approve the presented agenda as modified. Brianna Haug 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 March 20, 2023, meeting minutes as presented. Steve Hohman seconded the motion. Reene Miranda abstained from the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.
- **Motion:** Jason Shook motioned to approve the date, time, and location for the MDAG in-person workshop meeting June 14-15 at SPP Campus. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

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April 20, 2023

Southwest Power Pool MODEL DEVELOPMENT ADVISORY GROUP MEETING

April 20, 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.

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April 20, 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	No	Larry Brusseau	Yes	Corn Belt Power Cooperative
Jerry Bradshaw	Yes			City Utilities of Springfield
Dustin Betz	Yes			Nebraska Public Power District
Preston Blinsky	No			Basin Electric Power Cooperative
Joe Fultz	No			Grand River Dam Authority
Brianna Haug	Yes			Western Area Power Administration, MDAG Vice-Chair
Steve Hohman	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			Golden Spread Electric
Ryan Baysinger	Yes			Evergy
Jesse Kreuzfeldt	Yes			Missouri River Energy Services

Material: APR20_Attach2 - 1c. MDAG Conference Call Attendance-04-20-2023

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April 20, 2023

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.

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

Material: APR20_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS MARCH 20, 2023 MEETING MINUTES (**APPROVAL ITEM**)

Lottie Jones asked the group if they had any proposed changes for the previous March 20, 2023, meeting minutes.

Lottie mentioned one correction to the previous minutes including removing Michael Swan as Steve Hohman's proxy.

Motion: John Vara motioned to approve March 20, 2023, meeting minutes as presented. Steve Hohman seconded the motion. Reese Miranda abstained from the motion. The group did not voice any additional concerns during the discussion of the motion. The motion passed.

Material: APR20_Attach3- 1f. March 20, 2023, Meeting Minutes.docx

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April 20, 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 – SPP staff presented to MVTF and is currently benchmarking requesting input from MDAG members as well.
- Action Item 200 – Complete – Training to be performed during the MDAG in-person workshop.
- Action Item 202 – In-Progress – To be marked complete after discussion during this meeting.

AGENDA ITEM 3 – MDAG IN-PERSON MEETING (APPROVAL ITEM)

AGENDA ITEM 3A – JUNE 14-15, 2023 – SPP – WORKSHOP

SPP staff, Lottie Jones, requested a motion to approve the meeting date for the June MDAG in-person workshop at SPP on June 14-15.

John Vara asked for clarification that the location is still set for SPP offices.

Motion: Jason Shook motioned to approve the date, time, and location for the MDAG in-person workshop meeting June 14th-15th at SPP Campus. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

AGENDA ITEM 4 – RATE 3

AGENDA ITEM 4A – DPP PROCESS

SPP staff, Chris Davis, updated the group on the Rate 3 discussion and how conductor data is utilized in the DPP process for transmission planning.

SPP Member Company requested that there is a check to see if the data request has been sent out to members as they have not found the request from SPP.

SPP Member Company asked the group if the data is already submitted during the project stage of the DPP window if they are terminally limited. This is a competitive process so the expectation is that these would be submitted as projects. Does submitting this data throw them out of the competitive process? This data would probably not result in a competitive project. A

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competitive upgrade determination is considered final after legal review. Facility rating determinations are not considered competitive as the equipment is already existing and are part of the model development process. If a rating impact is shown in year 8 would that be considered competitive? Ratings are not considered in the competitive process. When SPP receives DPP this data is utilized for automation but does not make it competitive. Do DPP submitters submit these projects to do terminal upgrades? Yes, but not always and SPP staff is creating solutions for these update solutions as well.

SPP Member Company asked SPP if this data request be tied to a standard such as FAC-008 or MOD-032? This data could be tied to a standard if it is applicable but this would be a good add as it is not currently in the data request. SPP Member Company mentioned that it might be more relevant to tie this request to MOD-032 and not to FAC-008.

SPP Member Company asked how FAC-008-5 R8 relates to the request for ratings during the DPP process? This data point in FAC-008 is limited to operations planning and not the DPP process. SPP Member Company would caution any correlation between the annual data request and the FAC-008-5 R8 standard. SPP Member Company also suggested a rewrite of the annual data request as SPP Member Company has not provided additional data since 2020 as the conductor information has not changed since that period. There is currently a seven day period for responses and this should be sufficient for the data request. Ask the host TO for any updated data required during the DPP process. A middle ground would be to include a question during the request as to whether the conductor is terminally limited or conductor limited. Solutions cannot be concluded from this as we need the rating data as well.

Staff mentioned that the annual data request is put into place to allow TOs to have a look for the entire year to plan for future data requirements.

SPP Member Company asked if the rating data is designed to provide higher quality data when it could be something like a jumper that needs to be replaced rather than a conductor limit rating. What is the result if we are upgrading everything beyond the conductor rating? There could be some alternatives as well. The conductor rating allows SPP the immediate solution to upgrade everything up to the conductor rating.

SPP Member Company asked for clarification that SPP is asking for the rating of the transmission line minus any terminal limits? What is the rating of the line minus any equipment on either side? The lines would go in the same bucket as the substation equipment. The transmission element itself minus any switches, breakers, etc. absent the switching devices and measuring devices.

SPP Member Company commented that the currently rated conductors do not typically change over time. SPP Member Company experience is that the rating value is entered and locked in for a long period. Has staff seen an instance where the conductor limit needs to be changed after

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the initial value entry? This is an SPP assumption so it is fine if the data does not change over time.

SPP Member Company added a few comments to the discussion based upon her experience providing the planning level cost estimates. When talking about the conductor limit is it SAG limited and how many structures do you have to replace to raise the conductor. In most cases, there is a bright line between the line conductor limit and terminally limited conductors as far as the cost. There is currently seven days or less to provide this data and it is currently a challenge to come up with a somewhat accurate planning level cost estimate. This is an additional burden for the modelers to submit this information. Also, individuals who are not the planner or TO are not going to have this Rate 3 data to provide to SPP. They could run with a false assumption and not ask for confirmation from the TO.

Staff mentioned that this type of estimation needs to be done during the cost estimate process so that they can determine if there is anything that needs to be upgraded around the conductor. Upgrading to the conductor limit would address any terminally limited issues.

Staff mentioned that we need to put some focus into the suggestion from SPP Member Company so that we may be able to use this as a price suggestion. The current data submittals is creating a mixed bag of the data that we currently receive from members if the data and conductor ratings has not been updated. What we are doing today may not hold water in the future if we do not receive conductor ratings from TOs.

SPP Member Company mentioned that a check box for the data may not be enough and you may have to dig into the terminal equipment as well. You may have to upgrade more than you are touching with this checkbox and the DPP window is used to figure out what is needed for a good project.

SPP Member Company mentioned that though this request does not seem like it would take a lot of effort; from a model building perspective, there are several items that would cause this request to add to the modeling effort for WAPA and others.

AGENDA ITEM 5 – RATE 3 STRAW POLL

SPP staff, Lottie Jones, asked the group how they would like to proceed with the straw poll after this last discussion.

John suggested that we skip the straw poll and SPP staff and MDAG members work through an appropriate path moving forward through email communication.

Action Item: MDAG to discuss a path forward via email for future discussions on the Rate 3 topic.

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AGENDA ITEM 6 – CPPTF COMMON MODEL UPDATE

SPP staff, Brandon Hentschel, updated the group on the CPPTF common model discussion.

SPP Member Company asked what the asterisks represent in the proposed schedule. These coincide with the 90/10 load option discussion.

SPP Member Company proposed building additional models for 28S/W and 30S/W and would like to discuss it during the MDAG workshop topics discussion.

SPP Member Company commented that the comparison between MDAG and ITP is worthwhile from a modeling perspective.

Staff mentioned that it would be worthwhile to ask TWG if it would be possible to use the EIA data for the ITP BR models. Jason Shook did not voice any concerns with SPP presenting this discussion and bringing it to TWG.

SPP Member Company mentioned that he does not think the user interface for MDAG would carry over well to ITP. There are some challenges with the current spreadsheet. SPP Member Company mentioned that he would be supportive of a change to the current process.

Staff mentioned that an EDST survey will be coming soon and asked MDAG membership to participate in this survey.

AGENDA ITEM 7 – BREAK (5 MINUTES)

AGENDA ITEM 8 – 2023 SERIES MDAG MODEL BUILD/APPLICATION UPDATES

AGENDA ITEM 8A – DYNAMICS

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

AGENDA ITEM 8B – MOD-033 EVENT SELECTION

SPP staff, Eric Sullivan, updated the group on the next MOD-033-2 East event selection.

AGENDA ITEM 9 – FOCUS GROUP UPDATES

SPP staff, Eric Sullivan, provided the group with the upcoming MDAG Focus Group topics and requested any additional topics.

AGENDA ITEM 10 – RAD TF

SPP staff, David Duhart, updated the group on the RAD Task Force goal and participation.

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The primary goal of the group is to streamline the 5 year average process.

SPP would like to ask for participation from the MDAG members as well.

AGENDA ITEM 11 – MDAG WORKSHOP TOPICS

SPP staff, Lottie Jones, updated the group on proposed MDAG workshop topics.

Staff will be sending out a Google Form Survey as well as a PDF version so that members may add some additional topics that they would be interested in covering during the workshop.

Mae Cruz requested a topic discussion covering additional models that SPS would like to see in the next model build. This can be covered by SPP and would likely be an approval item as well.

AGENDA ITEM 12 – DISCUSSION OF FUTURE MEETINGS

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

- a. MDAG: May 18, 2023 (9:00 AM – 12:00 PM)
- b. MDAG FG: April 25, 2023 (1:00 PM – 3:00 PM)

AGENDA ITEM 12 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** MDAG to discuss a path forward via email for future discussions on the Rate 3 topic.
- **Action Item:** Review how the current MDAG dispatch workbook is being populated and look for areas of improvement.

AGENDA ITEM 13 – ADJOURN

John Turner adjourned the meeting at 11:18 a.m. (CST)

MDAG MINUTES

April 20, 2023

Respectfully Submitted,

Lottie Jones
Secretary

Eric Sullivan
Secretary Assistant

Attachments

APR20_Attach1- 1e. MDAG Meeting Agenda.docx

APR20_Attach2 - 1c. MDAG Conference Call Attendance-04-20-2023

APR20_Attach3- 1f. Mar 20, 2023, Meeting Minutes.docx