

## MDAG MINUTES

January 19, 2022

### SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

January 19, 2022 9:00 am – 12:00 pm (CST)

Conference Call

## SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** SPP to perform training on powerflow anomaly file.
- **Action Item:** SPP to review the common model timeline.

Motions:

- **Motion:** Renee Miranda motioned to approve the presented agenda as modified. Dustin Betz 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 December 15, 2022, meeting minutes as presented. Jesse Kreutzfeldt seconded the motion. The group did not voice any additional concerns during the discussion of the motion.

# **MDAG MINUTES**

January 19, 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

January 19, 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, 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:** JAN19\_Attach2 - 1c. MDAG Conference Call Attendance-01-19-2023

## MDAG MINUTES

January 19, 2022

### 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 noted that agenda items 7 and 8A have been updated and will be reflected in the final meeting materials.

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

**Material:** JAN19\_Attach1- 1e. MDAG Meeting Agenda

### AGENDA ITEM 1F – PREVIOUS DECEMBER 15, 2022 MEETING MINUTES (**APPROVAL ITEM**)

Lottie Jones asked the group if they had any proposed changes for the previous December 15, 2022, meeting minutes. Jesse Kreutzfeldt corrected the spelling on his last name in the minutes. The group reviewed the meeting minutes and did not voice any additional changes

**Motion: Jason Shook motioned to approve December 15, 2022, meeting minutes as presented with corrected name. Jesse Kreutzfeldt seconded the motion. The group did not voice any additional concerns during the discussion of the motion.**

**Material:** JAN19\_Attach3- 1f. December 15, 2022, Meeting Minutes.docx

## **MDAG MINUTES**

January 19, 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 – to be discussed at the January FG meeting.

### **AGENDA ITEM 3 – 2022 MDAG EFFECTIVENESS RESULTS**

John Turner discussed the MDAG effectiveness survey results with the group. *(Please reference January materials for detailed results)*

John requested the group provide any additional feedback related to the meeting minutes either at the end of the meeting, during the meeting, or after.

Brianna Haug suggested running the meeting minutes in congruence with the agenda topics so that members can provide feedback and help to update them on the fly. Brianna will present the idea at the next Staff secretary and chairs meeting.

Renee Miranda mentioned that he likes the idea of having live meeting minutes so that we can capture comments from both the members as well as SPP staff.

Due to MDAG effectiveness survey requesting additional face-to-face meeting, MDAG leadership would like to propose to SPP consider allowing 2 face-to-face meetings for MDAG:

1. Kickoff/Workshop
2. Fix Red Checks

Lottie Jones, to follow up internally on the request.

After reviewing a comment related to vice chair not taking role of chair. Brianna apologized to the group for not taking over the chair role from Jerad after he left the group as she did not feel that she had the experience to transition into the chair role.

Sunny echoed, praising Brianna for stepping up to interim chair, and ensured that MDAG did follow proper process and procedure for selecting the chair. MDAG does not have language that requires the vice chair to assume chair position.

### **AGENDA ITEM 4 – IIRRG UPDATE**

SPP staff, Doug Bowman, updated the staff on the Inverter Based Resource Requirements Group (IIRRG). IEEE 2800-2022 Standard incorporates most of the NERC recommendations around

## MDAG MINUTES

January 19, 2022

inverter-based resources (IBRs). SPP has initiated a new internal group consisting of SPP staff to perform a gap analysis of existing SPP IBR requirements and the new IEEE 2800-2022 Standard. Group participants include personnel from Reliability Standards, Modeling, Engineering, GI, Operations, and R&D. Periodic updates to the relevant working groups will be scheduled in the future. An RR will be initiated to modify the tariff as needed to accommodate full IBR requirements for SPP and its members.

Renee Miranda asked if the changes to the tariff would be made retroactive to existing IBRs and Doug mentioned that it would only apply to new IBRs after the update to the tariff. How does the GI process at SPP incorporate TO FAC-001 and FAC-002 requirements (into the DISIS process)? Doug mentioned that any interconnection customer that wants to interconnect to our grid will now have to meet the performance requirements in GRIDV. TOs can have stricter requirements than FAC-001 and FAC-002; however, SPP would like to know about these cases. For wind farms with Type 1 machines, is there a process that must be followed if they are updating these to Type 3 or Type 4 machines? Doug mentioned that this would likely need to go back through the interconnection (GI) process for something like a one-off study (Steve Purdy is the contact at SPP for this type of question).

Doug mentioned that EMT models are becoming more prevalent in studies and the industry and SPP will likely move towards an EMT type model.

John Turner asked what type of software we currently use for EMT studies and Doug mentioned that this software is PSCAD.

Joe Fultz mentioned that IBRs usually go through the GI process with the required parameters for the study; however, once they are operational some of these parameters might change due to tuning in the field. Are we currently seeing where those parameters are changing? Doug mentioned that if they say that they are meeting these requirements, then they have to verify that they are meeting the requirements. The customer puts the data into the final verified model and sent to the GI group for inclusion into the GI study. Sunny mentioned that this information is obtained from the data owner as part of the MOD-032 study. This information is reviewed with GI as well. GI does have some procedures to re-amp the models as well per the current agreements. Sunny suggested that we start these new requirements within the GIA process to begin this overall process.

Todd Chwialkowski asked if SPP will continue to use PSCAD models, or will they follow ERCOT to utilize TSAT models, in addition to PSSE models? Are there any comments on requirements for model quality tests (MQT) or Parameter Verification Reports (PVRs)? Doug mentioned that SPP will perform the validation on the PSCAD models provided by members. SPP will not be requiring TSAT models through the interconnection process though this ask could come from the modeling group in the future. Renee mentioned that SPP operations is currently requesting TSAT models and Doug mentioned that it is in our right to ask for them at any time.

## **MDAG MINUTES**

January 19, 2022

Sunny mentioned that RR495 (RDS Dynamic Model Characteristics) is tied to CIP-012 and that is where the requirement for TSAT models is coming from based upon the request from William Holden.

<https://www.spp.org/documents/63743/rdsei%200820ext00126.pdf>

John and Renee asked for additional discussions from Doug related to this process and any tariff updates.

### **AGENDA ITEM 5 – FOCUS GROUP UPDATES**

#### **AGENDA ITEM 5A – MDAG FOCUS GROUP**

SPP staff, Eric Sullivan, reminded the group that we did not have any member volunteers to run the combined MDAG FG meeting so this will be coordinated by SPP staff if/until there is a volunteer. Eric asked the group if they any topics that they would like to discuss during the 2023 MDAG FG meetings.

John Turner mentioned that FERC Order 881 will be very involved and will likely require manual updates so he would like the group to be involved in this discussion.

Brianna would like to see a bullet point for manual updates so that we do not lose track of the fact that this is a combined meeting for both the FG and MTF.

Eric mentioned that this will be a recurring bullet point for future MDAG FG meetings.

### **AGENDA ITEM 6 – BREAK (10 MINUTES)**

#### **AGENDA ITEM 7 – CPPTF COMMON MODEL UPDATE**

SPP staff, Brandon Hentschel, updated the group on the current CPPTF Common Model proposal.

Current Proposal:

1. Currently MDAG and ITP BR models are built in parallel
2. Proposing that the 2025 ITP BR models be built first from July-Jan and then apply System Intact Alteration MOD projects and re-dispatching to build the 2024 MDAG model set for MMWG and Dynamics.
3. Build out all the necessary MDAG/ITP years/seasons July-Jan and dispatch using ITP dispatch methodology.

## MDAG MINUTES

January 19, 2022

4. Model all generation/projects with a GIA regardless of firm service. Gens without firm service will be offline in the ITP BR models.

Brianna asked the difference between the ITP dispatch methodology versus the MDAG dispatch methodology. Brandon mentioned that the ITP model would become the common model and that the process would basically mimic how we do it today for ITP. How does SPP determine the dispatch of generators? This is done internally at SPP; however, adjustments can be made throughout the model build.

Renee Miranda asked which of the two models (ITP or MDAG) has a better representation of the transmission that is operating in SPP. Brandon mentioned that topology would likely be the same; however, neither one of them is doing a market type dispatch. The MDAG model can contain some non-firm service. Which would be the best model to supply to MMWG? This will remain the same as it is done currently. Could the July-Jan timeframe be extended for load information (maybe July-April)? David mentioned that the models aren't sitting on a shelf; however, the powerflow models are then being utilized for the economic studies. Load changes/updates will have a downstream impact on these studies. Renee mentioned that improvements are usually focused on the reliability models. Is the economic model build being reviewed for improvements as well? David mentioned that he is looking to put together an economics working group to discuss these areas of improvements. When would changes be made to the ITP BR models that would be incorporated into the MDAG models in regards to load changes and updates? Brandon mentioned that there is a deadline for both MDAG and ITP model load updates. Can we add the ITP BR model build process to the MDAG schedule for reference? Lottie mentioned that the schedule would likely changed to be based more around the common model approach than the MDAG/ITP model approach.

Steve Hohman commented that it seems like the benefits are there when compressing the schedule; however, there is a current lack of transparency when dispatching the BR models. If you take away a couple of months then you are taking away a pass and further review of the models. Brandon mentioned that we can have further discussions regarding the dispatching of BR models. Brianna mentioned that they are dispatching MDAG models like the BR models. Modelers are not able to dispatch their own generation so this process relies on SPP to perform the dispatch. These dispatch efforts can have a trickle-down effect so they take quite a bit of time to review and update as necessary. David mentioned that there should be one dispatch for the CPPTF common model. Lottie mentioned that we could add in the EIN number to the dispatch, to help add transparency on why certain generators were chosen over others.

All of the processes would feed off of the common model including the economic model. The general comment from the group is that there is currently not enough time to review the models so it is hard to compress the schedule to July-Jan. Lottie asked the group if it would be possible to start the model build later and go later such as August (or September) – March (or April). Renee mentioned that this is a possibility but would have to be reviewed.



## **MDAG MINUTES**

January 19, 2022

JAN19\_Attach4- 7. CPPTF Common Model Update

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

#### **AGENDA ITEM 8A – POWERFLOW**

SPP staff, Lottie Jones, updated the group on the current MDAG powerflow model build. Lottie is reaching out to members directly regarding errors and red checks. Several load additions will be included in the Pass 2 Trial 2 MDAG Powerflow models as well.

Renee suggested some further education on how to read some of the data from MOD anomalies that is showing to not exist.

Brianna mentioned that the transaction values posted included cases that are not in the correct order towards the end of EDST. Hugh mentioned that this has been flagged to be fixed by the EDST team.

Lottie encouraged data submitters to please review 2022 AG1 updates made in EDST, and to please continue to review DocuCode Red checks. Lottie encouraged that data submitters bring red check questions to the Tuesday focus group meeting or schedule a WebEx to go through any scenarios that they may have.

JAN19\_Attach5- 8a. 2023 MDAG Powerflow Update

#### **AGENDA ITEM 8B – SHORT CIRCUIT**

SPP staff, Eric Sullivan, updated the group on the current short circuit model. SPP has posted Posted Pass 1 Trial 2 models and materials. Next steps for SPP staff is to review data submissions via email and GlobalScape for Pass 2 Trial 2 Short Circuit model build

#### **AGENDA ITEM 8C – MOD-033**

SPP staff, Eric Sullivan, updated the group on the current MOD-033-2 East request. SPP is in progress of reviewing member updates, more updated data will be provided to the group at a later time.

#### **AGENDA ITEM 8D – DYNAMICS**

SPP staff, Zach Sabey, updated the group on the upcoming 2023 MDAG Dynamics Model build. SPP dynamics build has kicked off. SPP staff will review member data and merge with MMWG cases, initialize all cases, and perform fault testing and offline wind initialization.

### **AGENDA ITEM 9 – NEW STAFF INTRODUCTION**

## MDAG MINUTES

January 19, 2022

SPP staff, Becca McCann, introduced Darian Richards as the new modeling team member. Darian will be working with the powerflow team.

### AGENDA ITEM 10 – DISCUSSION OF FUTURE MEETINGS

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

- a. MDAG: February 16, 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. Prioritization Finalization Session: February 8, 2023 (1:00 PM – 5:00 PM)

### AGENDA ITEM 11 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** SPP to perform training on powerflow anomaly file.
- **Action Item:** SPP to review the common model timeline.

### AGENDA ITEM 11 – ADJOURN

John Turner adjourned the meeting at 11:42 a.m. (CST).

Respectfully Submitted,

Lottie Jones  
Secretary

## **MDAG MINUTES**

January 19, 2022

Eric Sullivan  
Secretary Assistant

### Attachments

JAN19\_Attach1- 1e. MDAG Meeting Agenda.docx

JAN19\_Attach2 - 1c. MDAG Conference Call Attendance-1-19-2022

JAN19\_Attach3- 1f. December 15, 2022, Meeting Minutes.docx

JAN19\_Attach4- 7. CPPTF Common Model Update

JAN19\_Attach5- 8a. 2023 MDAG Powerflow Update

**SOUTHWEST POWER POOL, INC.**

**MODEL DEVELOPMENT ADVISORY GROUP MEETING**

**January 19, 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 December Meeting Minutes (**Approval Item**)
2. Review of Past Action Items ..... Lottie Jones (10 mins)
3. 2022 MDAG Effectiveness Results.....John Turner(15 mins)
  - a. In Person Meetings
4. IIRRG Update.....Doug Bowman (45 mins)
5. Focus Group Updates
  - a. MDAG Focus Group .....Eric Sullivan(5 mins)
    - i. 2023 Meeting Topics
6. Break.....All (5 mins)
7. CPPTF Common Model Update .....Brandon Hentschel (20 mins)
8. 2023 series MDAG Model Build/Application Updates
  - a. Powerflow .....Becca McCann/Lottie Jones (15 mins)
    - i. 2022 AG1 Review
    - ii. Docucode Red Checks
  - b. Short Circuit .....Eric Sullivan (10 mins)
  - c. MOD-033 ..... Eric Sullivan (5 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.*

- d. Dynamics.....Zach Sabey/Theo Brown (10 mins)
  - i. Kickoff
- 9. New Staff Introduction ..... Eddie Watson (5 mins)
- 10. 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](http://spp.org)

  - a. MDAG: February 16, 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. Prioritization finalization session: February 8, 2023 (1:00 PM - 5:00 PM)

MDAG encourages you to check out the [spp.org](http://spp.org) calendar for additional information on technical topics discussed in other working groups. SPP also offers stakeholder trainings [found here](#)
- 11. Summary of Action Items..... Lottie Jones (5 mins)
  - a. Agenda Review – additional comments request
- 12. Adjourn..... All

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

# Resumes at 10:35 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

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

<b>Member Type</b>	<b>Sector</b>	<b>Present</b>	<b>Proxy</b>	<b>Absent</b>	<b>Percent Present</b>
Staff	RTO	12	0	2	86%
Staff	RTO	10	0	0	100%
TO	Investor Owned Utility	14	0	0	100%
TU	Cooperative	13	1	0	100%
TU	Cooperative	#REF!	#REF!	#REF!	N/A
TO	Cooperative	11	0	3	79%
TU	Municipal	#REF!	#REF!	#REF!	N/A
TO	State	4	0	0	100%
TO	Cooperative	12	1	1	93%
TO	State	12	1	1	93%
TO	Investor Owned Utility	#REF!	#REF!	#REF!	N/A
TO	Federal	13	1	0	100%
TO	State	11	2	1	93%
TU	Investor Owned Utility	9	5	0	100%
TU	Municipal	7	0	2	78%
TU	Investor Owned Utility	12	2	0	100%
TU	Investor Owned Utility	12	2	0	100%
TU	Cooperative	13	1	0	100%
TO	Cooperative	#REF!	#REF!	#REF!	N/A
TO	Cooperative	11	1	2	86%



**Annual Assessment Totals****Average Length of Meetings (hrs) 3****Number of Votes Taken 61****Average Overall Attendance 59****Total Meetings this Assessment 17****Live 1****Teleconference 16****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

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 Kreuzfeldt	No	Andrew Berg	Yes	Missouri River Energy Services

**Material:** DEC15\_Attach2 - 1c. MDAG Conference Call Attendance-12-15-2022

**MDAG MINUTES**  
December 15, 2022

**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.

## MDAG MINUTES

December 15, 2022

**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

**MDAG MINUTES**  
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



# CPPTF UPDATE

BRANDON HENTSCHEL



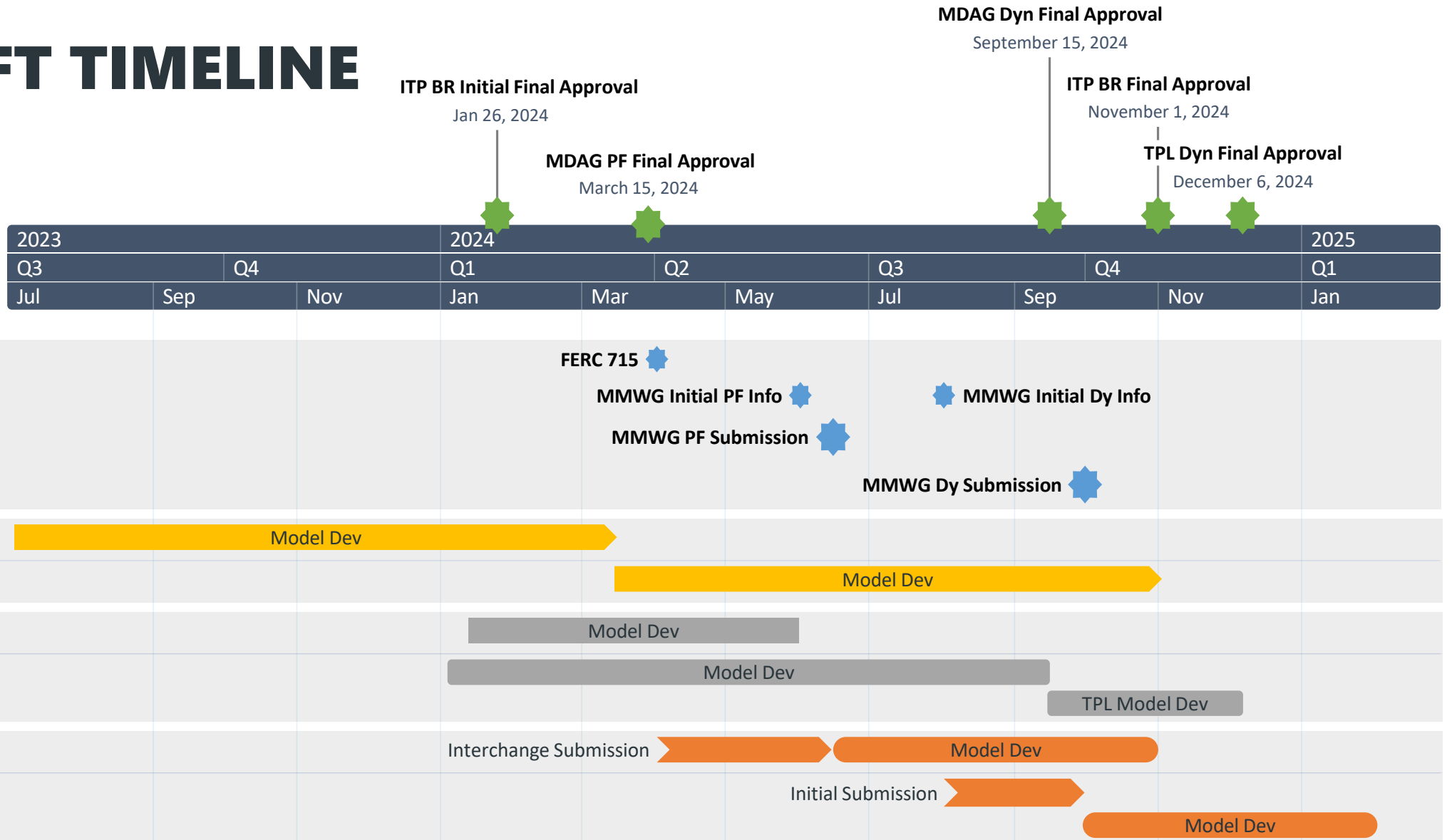
# BACKGROUND

- We are introducing the idea of making changes to the next MDAG/ITP model builds in order to help move towards having a common model set in support of the C3 SCRIPT efforts.

# PROPOSAL

- Currently MDAG and ITP BR models are built in parallel.
- Proposing that the 2025 ITP BR models be built first from July-Jan and then apply System Intact Alteration MOD projects and re-dispatching to build the 2024 MDAG model set for MMWG and Dynamics.
- Build out all the necessary MDAG/ITP years/seasons July-Jan and dispatch using ITP dispatch methodology
- Model all generation/projects with a GIA regardless of firm service. Gens without firm service will be offline in the ITP BR models.

# DRAFT TIMELINE



2025

# BENEFITS

- **Member Review**
  - Targeted review for ITP BR and MDAG rather than parallel overlap
- **Model Development Quality**
  - Ensure one set of models is reviewed more thoroughly
- **Staff Time savings**
  - No longer a need add/remove gens with GIAs without firm TS for the study processes
  - Only exporting one set of models out of MOD with each pass

# CHALLENGES TO ADDRESS

- Timing
  - Models to use for FERC 715 filing
  - MDAG dynamic models requiring a near final powerflow case
- Dynamic models
  - Do we built both ITP and MDAG dynamic models for timing concerns?



QUESTIONS?



# 2023 MDAG POWERFLOW

BECCA MCCANN/LOTTIE JONES



# OVERVIEW

- Status Update
- Load Additions
- Upcoming MDAG Deadlines & Reminders
- Docucode Red Checks
- Questions



# 2023 SERIES MDAG POWERFLOW MODEL BUILD STATUS UPDATE

- **Completed Tasks**

- Posted Pass 2 – Trial 1 models and review materials
- Performed model quality assurance checks; contacted data submitters of inconsistencies noticed
- Communicated with data submitters regarding shortfall in 2023MDAG/2024 ITP models
- SPP updated EDST with 2022 AG1 data
- Merged with 2022 MMWG external

- **In-Progress Tasks**

- Reviewing model updates for Pass 2-Trial 2 modeling submission from Data Submitters
- Following up with data submitters on pending corrections for Pass 2-Trial 2 modeling submission

- **Future Tasks**

- Build Pass 2 - Trial 2 models
  - Special note: this is last pass in the 2023 series that SPP will collect MOD/EDST data

# MDAG LOAD ADDITIONS

- **AECC Load**
  - Big Piney will be about 18MW summer peak and about 23MW winter peak (taking load off Litte Spadra)
  - Prairie Grove will be about 6MW summer peak and about 8MW winter peak (taking load off T2 at Farmington).
- **BEPC Load** *All of the load amounts are already accounted for in the last submission of BLG's*
  - 659\_BEPC\_MWEC\_AQ1269\_EastNesson2
    - Moving load from a 'Tap' to where it actually resides  
659\_BEPC\_LYREC\_AQ1322\_AIC
    - Transferring of load from Marley to where it actually resides
  - 659\_BEPC\_MWEC\_AQ1598\_WestBankSouth
    - Transferring a portion of the load to where it actually resides

# MDAG LOAD ADDITIONS

- SPS Load

Bus Name	Bus Number	Load ID	MW	MVAR
HITCHLAND 7345.00	523097	'C1'	440	144.62
LIPSCOMB 3115.00	523135	'C1'	20	5.93
WHITEDEER +3115.00	523720	'C1'	15	4.91
COBRN_CREEK3115.00	523772	'C1'	20	1.27
CHAN+TASCOS6230.00	523869	'C1'	20	4.06
BENNETT 3115.00	527018	'C1'	15	2.14

# UPCOMING MDAG DEADLINES

- **Key upcoming dates:**
  - **1/20/23** – Data submitter updates due for Pass 2- Trial 2 models
  - **2/10/23** – SPP Staff Post Pass 2 - Trial 2 PF models and DocuCode for Data Submitter Review

# UPCOMING REMINDERS

- **Reminders:**

- Please review 2022 AG1 data update
  - EDST transactions, filter 2022 AG1 in comments
- Please continue to review Docucode **RED** checks
- Please review the SPP economic workbook data
  - Submit seasonal variations in the in the dispatch workbook for the 2023 series

# DOCUCODE RED CHECKS

## GlobalScape Location:

*Modeling (CEII, RSD) → MDAG Series → Powerflow → 2023 Series →  
E. Pass 2 → 1. Trial 1*

No Exceptions	Comment
Pgen out of range	<ul style="list-style-type: none"> <li>• Pgen=0 need to be turned off OR</li> <li>• Added to generation dispatch workbook</li> <li>• Pgen&gt;pmax = shortfall issues</li> <li>• Pgen&lt;pmin = balancing with transaction/renewable settings issues</li> </ul>
Voltage violations	<ul style="list-style-type: none"> <li>• Review tap/switch shunt settings</li> </ul>
Offline/Missing Slack Machine	<ul style="list-style-type: none"> <li>• Dispatch related (potential fix increase priority)</li> </ul>
Branch Overloads	<ul style="list-style-type: none"> <li>• GSU overloads</li> <li>• Review ratings to ensure they are accurate</li> </ul>
Transformer Overloads	<ul style="list-style-type: none"> <li>• GSU overloads</li> <li>• Review ratings to ensure they are accurate</li> </ul>

*\*These are first priority checks to consider. Please note there are additional red checks that must be addressed.*

No Exceptions	Comment
3 winding rating error	<ul style="list-style-type: none"> <li>Review ratings to ensure they are accurate</li> </ul>
Code 2 bus without machines	<ul style="list-style-type: none"> <li>Change bus code</li> </ul>
Machines on Code 1 buses	<ul style="list-style-type: none"> <li>Change bus code</li> </ul>
Duplicate bus names	<ul style="list-style-type: none"> <li>Check NB (if valid, SPP will make an exception)</li> </ul>
Small voltage band shunt	<ul style="list-style-type: none"> <li>Not Allowed: <math>VSWHI - VSWLO &lt; 0.0005</math></li> </ul>
Small voltage band trans	<ul style="list-style-type: none"> <li>Not Allowed: <math>VMA - VMI &lt; 1.95 * \text{Step Size}</math></li> </ul>
Incorrect branch kV	<ul style="list-style-type: none"> <li>Check for overlapping NB data (if valid, SPP will make an exception)</li> </ul>
Load on code 4 bus	<ul style="list-style-type: none"> <li>Check for islands, if correct; switch off load.</li> </ul>
Unrealistic QMAX and QMIN	<ul style="list-style-type: none"> <li>Not Allowed: <math>QMAX &lt; QMIN</math>; <math>QMAX &gt; 1000</math>; <math>QMAX &lt; -1000</math></li> </ul>

*\*These are first priority checks to consider. Please note there are additional red checks that must be addressed.*





QUESTIONS?