

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.

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Southwest Power Pool MODEL DEVELOPMENT ADVISORY GROUP MEETING

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

Conference Call

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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.

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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

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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. 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

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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.

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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.

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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.

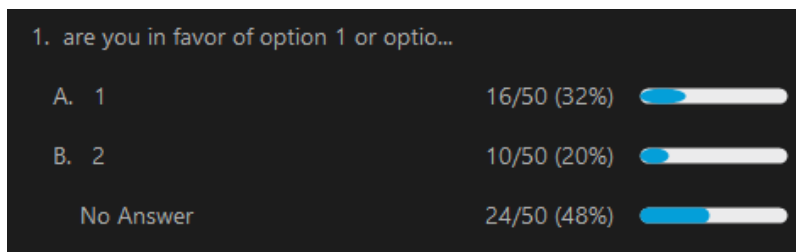
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SPP Member company mentioned that there is significant benefit in the DPP stage to understand the limitations of the system. SPP has been very involved in making sure that the DPP process goes smoother for both SPP staff as well as members.

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)

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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

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 |
|-----------------------|-----------|-----------|-----------|
| Meeting Length (hrs) | 3 | 2.5 | 3 |
| Number of Votes Taken | 2 | 2 | 5 |
| Overall Attendance | 61 | 61 | 68 |

| Member Name | Company | Current Member | 1/19/2023 | 2/16/2023 | 3/20/2023 |
|--------------------------------|-------------------------|----------------|-----------|-----------|-----------|
| Alex Mucha | Oklahoma Municipi | Yes | WebEx | WebEx | WebEx |
| Brianna Haug (Vice Chair) | Western Area Powe | Yes | WebEx | WebEx | WebEx |
| Dustin Betz | Nebraska Public Po | Yes | WebEx | WebEx | WebEx |
| Jason Shook | GDS Associates | Yes | WebEx | WebEx | WebEx |
| Jerry Bradshaw | City Utilities of Sprin | Yes | WebEx | WebEx | WebEx |
| Jesse Kreuzfeldt | Missouri River Ener | Yes | WebEx | WebEx | WebEx |
| Joe Fultz | Grand River Dam Ai | Yes | WebEx | WebEx | WebEx |
| John Turner (Chair) | Western Farmers Elc | Yes | WebEx | WebEx | WebEx |
| John Vara | Golden Spread Elec | Yes | WebEx | WebEx | WebEx |
| Liam Stringham | Sunflower Electric P | Yes | WebEx | WebEx | WebEx |
| Lottie Jones (Staff Secretary) | SPP | Yes | WebEx | WebEx | WebEx |
| Preston Blinsky | Basin Electric Power | Yes | WebEx | WebEx | WebEx |
| Reené Miranda | Southwestern Publi | Yes | WebEx | WebEx | WebEx |
| Ryan Baysinger | Eversgy | Yes | WebEx | WebEx | WebEx |
| Scott Rainbolt | American Electric Pt | Yes | WebEx | WebEx | WebEx |
| Scott Schichtl | Arkansas Electric Co | Yes | WebEx | WebEx | WebEx |
| Steve Hohman | Omaha Public Powe | Yes | WebEx | WebEx | WebEx |
| Tyler Baxter | Com Belt Power Co | Yes | WebEx | WebEx | WebEx |
| Guest Name | Company | Current Member | 1/19/2023 | 2/16/2023 | 3/20/2023 |
| Adam Mummert | Burns & McDonnell | No | | WebEx | |
| Adam Nmili | Oklahoma Gas and | No | WebEx | WebEx | WebEx |
| Ashlin Salehian | SPP | No | | | |
| Adam Schieffer | OPPD | No | | | WebEx |
| Ala Wadi | Liberty Utilities | No | | 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 | | |
| Armin Sehic | Nebraska Municipal | No | WebEx | WebEx | WebEx |
| Aster Amaluzatun | Nebraska Municipal | No | WebEx | | |
| Ben Hammer | WAPA | No | | WebEx | WebEx |
| Becca McCann | SPP | No | 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 |
| Brooke Keene | SPP | No | | | |
| Bruce Dall | Nebraska Municipal | No | | | |
| Calvin Coates | Kansas Power Pool | No | WebEx | WebEx | WebEx |
| Casey Cathey | SPP | No | | | |
| Charles Costello | Siemens | No | | | |
| Cho Wang | American Electric Pt | No | | | |
| Chris Colson | Western Area Powe | No | | WebEx | |
| Chris Gidlen | Tri State | No | | | |
| Chris Rich | Oklahoma Gas and | No | WebEx | | WebEx |
| Clarence Campbell | SPS | No | WebEx | | WebEx |
| Claire Vigessaa | Burns & McDonnell | No | | | |
| Conner Sweet | City Utilities of Sprin | No | WebEx | WebEx | WebEx |
| Curtis Miller | Western Farmers Elc | No | | | |
| Dale Reinhold | Hastings Utilities | No | | WebEx | |
| Damien Burbage | AECI | No | | | |
| Daniel Borg | Sunflower Electric P | No | WebEx | | WebEx |
| David Bromberg | Pearl Street Technol | No | | | |
| David Duhart | SPP | No | WebEx | WebEx | WebEx |
| David Mendoza | Grand River Dam Ai | No | WebEx | WebEx | WebEx |
| David Zhong | American Electric Pt | No | WebEx | | WebEx |
| Derek Brown | Eversgy | No | | | |
| Deven Peterson | National Grid Rene | No | | WebEx | |
| Diego Toledo | Grand River Dam Ai | No | WebEx | WebEx | WebEx |
| Douglas Bowman | SPP | No | WebEx | | WebEx |
| Donna Parks | Grand River Dam Ai | No | WebEx | WebEx | WebEx |
| Donald Hargrove | Oklahoma Gas and | No | | | |
| Dylan Fate | Tri State | No | | | |
| Ebrahim Rezaei | American Electric Pt | No | | | |
| Eddie Watson | SPP | No | WebEx | WebEx | WebEx |
| Edin Tezic | Lincoln Electric Syst | No | | | |
| Eli Nyambegera | Sunflower Electric P | No | | | |
| Elijah Salinas | LES | No | | WebEx | |
| Elen Cook | SPP | No | | | |
| Eric Jones | Omaha Public Powe | No | WebEx | WebEx | WebEx |
| Eric Sullivan | SPP | No | WebEx | WebEx | WebEx |
| Erin Cathey | SPP | No | | | |
| Erik Voice | Salten Electric | No | | | WebEx |
| Estevan Padilla | SPP | No | | WebEx | WebEx |
| Frank Favella | Southwestern Publi | No | | | |
| Garrick Nelson | Western Area Powe | No | | | |
| Gary Boerger | Oklahoma Gas and | No | | | |
| Gavin Novotny | Eversgy | No | | | WebEx |
| Glen Halley | City Utilities of Sprin | No | | | |
| Grace Bouziden | Oklahoma Gas and | No | | | |
| Hannah Mason | Light Source BP | No | | | |
| Hanriet Walsh | Onsted | No | | | |
| Hugh Benfer | SPP | No | WebEx | WebEx | WebEx |
| James Okenfuss | Savilon Energy | No | | | |
| Jason Menke | Nebraska Public Po | No | | | |
| Jeff Knottok | City Utilities of Sprin | No | | | |
| Jeff McDermid | SPP | No | WebEx | | |
| Jeff Plew | NextEra | No | | | |
| Jeffrey Taylor | ITC | No | WebEx | WebEx | WebEx |
| Jerad Ehrhridge | Oklahoma Gas and | No | | | |
| Jeremy Severson | Basin Electric Power | No | | WebEx | |
| Jesse Kreuzfeldt | Missouri River Ener | No | | | |
| Joe Williams | Western Farmers Elc | No | | | |
| John Bushnars | City Utilities of Sprin | No | WebEx | | |
| John Mayhan | Omaha Public Powe | No | | | |
| John Vara | Golden Spread Elec | No | | | |
| John Varnell | Tenaska | No | | | |
| John Wilson | Southern Current LL | No | | | |
| Jon Langford | Onsted | No | | | |
| Jonathan Aus | East River | No | | | |
| Josh Hesselbein | Arkansas Electric Co | No | WebEx | WebEx | |
| Joshua Pilgrim | SPP | No | | | |
| Josie Dagggett | WAPA | No | | | |
| Juliano Freitas | SPP | No | | | |
| Justin Helt | 1890 and Company | No | | | |
| Kadeem Brown | AEP | No | | WebEx | WebEx |
| Kalin Kelley | WVEC | No | WebEx | WebEx | |
| Kelsey Allen | SPP | No | | | |
| Kim Farris | SPP | No | | | |
| Kim Grogan | Eversgy | No | | | |
| Kimberly Woods | SPP | No | | | |
| Kristie Brown | SPP | No | WebEx | WebEx | WebEx |
| Kristen Darden | SPP | No | | | |
| Larry Brusseau | Com Belt Power Co | No | | | |
| Liz Gephardt | SPP | No | | | |
| Logan Peterson MPC | Minnkota | No | WebEx | WebEx | |
| Mae Cruz | Southwestern Publi | No | WebEx | | WebEx |
| Marc Moor (Eversgy) | Eversgy | No | | | |
| Margaret Kristian | National Grid Rene | No | | | |
| Martin Green | American Electric Pt | No | | | WebEx |
| 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 |
| Moses Rutch | Gridliance | No | | | |
| Mostafa Sedighizadeh | SPP | No | | | |
| Nathan Davis | Liberty Utilities | No | 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 | | | |
| Nolan Fertig | SPP | No | | | |
| Pallab Datta | Eversgy | No | WebEx | WebEx | WebEx |
| Paul Vovk | Omaha Public Powe | No | WebEx | WebEx | |
| Peter Jones | Savilon | No | | | |
| Phil Westby | BEPC | No | | WebEx | |
| Ransome Egunjobi | Enel | No | | | |
| Richard Miner | Liberty Utilities | No | | | |
| Ryan Baysinger | Eversgy | No | | WebEx | |
| Ryan Benton | Oklahoma Gas and | No | | | |
| Scott Holland | SWPA | No | | | |
| Scott Jordan | SPP | No | | | WebEx |
| Scott Mjlin | Southwestern Powe | No | WebEx | WebEx | WebEx |
| Seth Cochran | DC Energy | No | | WebEx | |
| Shalini Gupta | Aper Clean Energy | No | | WebEx | |
| Shannon Mickens | SPP | No | | | |
| Shawna Satterwhite | Oklahoma Gas and | No | WebEx | | |
| Steve Hardebeck | Oklahoma Gas and | No | | | |
| Steve Purdy | SPP | No | | | |
| Steven Park | Sunflower Electric P | No | | | |
| Sunny Raheem | SPP | No | WebEx | | WebEx |
| Talquera Jones | SPP | No | | | |
| Tanner New | Sunflower Electric P | No | WebEx | WebEx | |
| Thomas Burns | SPP | No | | | |
| Theo Brown | SPP | No | WebEx | | WebEx |
| Timothy Sell | ITS | No | WebEx | | 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 |
| Xiaoyu Wang | Enel | No | | | |
| Yasmin Sakalla | Enel | No | | | |
| Ying Yang | Duke Energy | No | | | WebEx |
| Zach Andera | Burns & McDonnell | No | | | |
| Zach Sabey | SPP | No | 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 | 14 | 0 | 2 | 88% |
| Staff | RTO | #REF! | #REF! | #REF! | N/A |
| TO | Investor Owned Utility | 16 | 0 | 0 | 100% |
| TU | Cooperative | 15 | 1 | 0 | 100% |
| TU | Cooperative | #REF! | #REF! | #REF! | N/A |
| TO | Cooperative | 13 | 0 | 3 | 81% |
| TU | Municipal | #REF! | #REF! | #REF! | N/A |
| TO | State | #REF! | #REF! | #REF! | N/A |
| TO | Cooperative | 14 | 1 | 1 | 94% |
| TO | State | 14 | 1 | 1 | 94% |
| TO | Investor Owned Utility | #REF! | #REF! | #REF! | N/A |
| TO | Federal | 15 | 1 | 0 | 100% |
| TO | State | 13 | 2 | 1 | 94% |
| TU | Investor Owned Utility | 11 | 5 | 0 | 100% |
| TU | Municipal | #REF! | #REF! | #REF! | N/A |
| TU | Investor Owned Utility | 14 | 2 | 0 | 100% |
| TU | Investor Owned Utility | 14 | 2 | 0 | 100% |
| TU | Cooperative | 15 | 1 | 0 | 100% |
| TO | Cooperative | #REF! | #REF! | #REF! | N/A |
| TO | Cooperative | 13 | 1 | 2 | 88% |

Annual Assessment Totals

Average Length of Meetings (hrs) 3

Number of Votes Taken 68

Average Overall Attendance 60

Total Meetings this Assessment 19

Live 1

Teleconference 18

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

SOUTHWEST POWER POOL, INC.

MODEL DEVELOPMENT ADVISORY GROUP MEETING

March 20, 2023

Conference Call

1:00 p.m. - 4:00 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 February Meeting Minutes (**Approval Item***)
2. Review of Past Action Items Lottie Jones (10 mins)
3. 2023 series MDAG Model Build
 - a. Powerflow (**Approval Item***)..... Becca McCann/Darian Richards/Lottie Jones (30 mins)
 - i. Additional idevs
 - b. Short Circuit(**Approval Item***).....Eric Sullivan (10 mins)
 - i. Additional idevs
 - c. GMD(**Approval Item***)Eric Sullivan (10 mins)
4. MDAG In Person Meeting(**Approval Item***)..... Lottie Jones (5mins)
 - a. June 14-15, 2023 – SPP - Workshop
5. Focus Group Updates Eric Sullivan (5 mins)
6. CPPTF Common Model Update Brandon Hentschel (30 mins)
7. Break..... All (10 mins)
8. 2023 series MDAG Model Build/Application Updates
 - a. Dynamics.....Zach Sabey/Theo Brown (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.

- 9. IEEE 1547-2018..... Scott Jordan (30 mins)
- 10. Rate 3 Proposal Brian Johnson/Lottie Jones/Scott Rainbolt (30 mins)
- 11. 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: April 20, 2023 (9:00 AM- 12:00 PM)
 - i. 2023 MDAG powerflow and short circuit model approval meeting
- 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](#)

- 12. Summary of Action Items..... Lottie Jones (5 mins)
 - a. Agenda Review – additional comments request
- 13. Adjourn..... All

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

MDAG MINUTES

February 16, 2023

SOUTHWEST POWER POOL MODEL DEVELOPMENT ADVISORY GROUP MEETING

February 16, 2023 9:00 am – 12:00 pm (CST)

Conference Call

SUMMARY OF MOTIONS AND ACTION ITEMS

Action Items:

- **Action Item:** How are seasonal ratings shown in the MOD-033 effort. (define how FERC Order 881 and seasonal ratings can be shown in the MOD-033 process to avoid additional unacceptable differences)
- **Action Item:** SPP staff and stakeholders to review proposed 2024 MDAG/2025 ITP timeline and schedule.

Motions:

- **Motion:** Jesse Kreutzfeldt motioned to approve the presented agenda as modified. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.
- **Motion:** Tyler Baxter motioned to approve January 19, 2023, meeting minutes as presented with corrected name. Jason Shook seconded the motion. The group did not voice any additional concerns during the discussion of the motion.

MDAG MINUTES

February 16, 2023

Southwest Power Pool MODEL DEVELOPMENT ADVISORY GROUP MEETING

February 16, 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

Proxy SPP MDAG Chair, John Turner, called the meeting to order at 9:01 a.m. (CST) with Quorum. SPP Staff Secretary, Lottie Jones, read the anti-trust statement to the group.

MDAG MINUTES

February 16, 2023

AGENDA ITEM 1C & 1D – ATTENDANCE AND PROXIES

The following members attended or were represented by proxy:

| MDAG Member | Present | Proxy | Present | Company |
|------------------|---------|-----------------|---------|--|
| Tyler Baxter | Yes | | | Corn Belt Power Cooperative |
| Jerry Bradshaw | Yes | | | City Utilities of Springfield |
| Dustin Betz | Yes | | | Nebraska Public Power District |
| Preston Blinsky | Yes | | | Basin Electric Power Cooperative |
| Joe Fultz | Yes | | | Grand River Dam Authority |
| Brianna Haug | Yes | | | Western Area Power Administration, MDAG Vice-Chair |
| Steve Hohman | Yes | | | Omaha Public Power District |
| Reené Miranda | Yes | | | Southwestern Public Service |
| Alex Mucha | Yes | | | Oklahoma Municipal Power Authority |
| Scott Rainbolt | 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, MDAG Chair |
| Lottie Jones | Yes | | | Southwest Power Pool, Inc., MDAG Secretary |
| John Vara | Yes | | | Golden Spread Electric |
| Ryan Baysinger | No | | | Evergy |
| Jesse Kreuzfeldt | Yes | | | Missouri River Energy Services |

Material: FEB16_Attach2 - 1c. MDAG Conference Call Attendance-02-16-2023

MDAG MINUTES

February 16, 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: Jesse Kreutzfeldt motioned to approve the presented agenda as modified. John Vara seconded the motion. The group did not voice concerns during the discussion of the motion. The motion passed unanimously.

Material: FEB16_Attach1- 1e. MDAG Meeting Agenda

AGENDA ITEM 1F – PREVIOUS JANUARY 19, 2023 MEETING MINUTES (**APPROVAL ITEM**)

Lottie Jones asked the group if they had any proposed changes for the previous January 19, 2023, meeting minutes. Eric Jones requested to update the 2022 in the minutes to 2023. No further corrections were made. The group reviewed the meeting minutes and did not voice any additional changes

Motion: Tyler Baxter motioned to approve January 19, 2023, meeting minutes as presented. Jason Shook seconded the motion. The group did not voice concerns during the discussion of the motion.

Material: FEB16_Attach3- 1f. January 19, 2023, Meeting Minutes.docx

MDAG MINUTES

February 16, 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 200 – In-Progress – moved to March MDAG FG Agenda
- Action Item 201 – In-Progress – included in February MDAG Agenda

AGENDA ITEM 3 – FOCUS GROUP UPDATES

SPP staff, Eric Sullivan, updated the group on the January MDAG FG topics and future topics for the February MDAG FG.

AGENDA ITEM 4 – FERC 881

John Turner updated the group on the efforts for FERC Order 881. Reviewing timeline, governing language, and identifying next steps. This presentation is an ongoing effort that will be addressed in the February TWG meeting as well.

FERC Order 881 is related to service and not to the reliability standards. The existing FAC-008 standard is sufficient and they weren't addressing any concerns with the standard. Any timeline issues will be related to service and not to FAC-008.

The SPP Tariff was amended with Attachment J including some changes that are SPP specific and seasonal line ratings does not include day/night overheating. Language could be crafted with MDAG around FERC Order 881 and Attachment J.

Several discussions were had as reflected below: Seasonal ratings are not needed for transmission planning but for long-term transmission service. *Is there a possibility that an aggregate study might be using seasonal ratings?* The distinction that is drawn in 881 is outside of 10 days. This is expressly for the granting of service outside of those 10 days. Most RTOs/ITOs are using the same model set. You could carry two sets of ratings for two sets of models and fork them. The recommendation for consistency is that the ITP BR models include seasonal ratings so that they two model sets match. *Should the ratings match between the AQ study and Transmission Planning?* The one set of ratings would avoid any confusion on what is used where and keep the processes in check. Long-term transmission service is through the AG process (AQ process) utilizing the BR Powerflow models as base cases. The MDAG Manual can be updated to include additional language on seasonal ratings. This would have to be carried over to the MOD-033 process as well to avoid any unnecessary failures. *Seasonal ratings refers to summer, winter, fall, and spring as well as the emergency cases (8 total)?* Yes; however, emergency ratings have to be uniquely determined from normal.

MDAG MINUTES

February 16, 2023

Action Item: How are seasonal ratings shown in the MOD-033 effort.

AGENDA ITEM 5 – CPPTF COMMON MODEL UPDATE

SPP staff, Brandon Hentschel, updated the group on the CPPTF common model. Proposing that we begin to consolidate the powerflow models, beginning with building the ITP models; and then building the MDAG models to meet MMWG requirements. Please see posted draft schedule for 2024 MDAG and 2025 ITP. In addition to schedule update, Brandon proposed that we use the EIA data instead of Ops Market Bid data. Also after reviewing the ITP manual, SPP staff is considering an RR to remove the requirement for resources to have firm service to be included in ITP BR. For accurate discussion in March MDAG meeting, please review the posted draft schedule internally and bring comments back to March MDAG

Action Item: SPP staff and stakeholders to review proposed 2024 MDAG/2025 ITP timeline and schedule.

AGENDA ITEM 6 – REVIEW SPP ROADMAP (MDAG ITEMS)

John Turner updated the group on the open SPP Roadmap items as related to MDAG. MDAG has two items ranked and one pending item. SIR142 SCRIPT C3. Common base model set is marked high and SIR534 Topology Rate 3 Data Collection is marked Medium. The item that is pending is SIR544 Short circuit modeling is survey is due to be completed by MDAG membership by 2/17. MDAG members stated that they had not received the email. SPP staff to follow up on email that includes survey

AGENDA ITEM 7 – BREAK (10 MINUTES)

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

AGENDA ITEM 8A – POWERFLOW

SPP staff, Becca McCann, updated the group on the 2023 MDAG Powerflow model build. Staff is following up with data submitters on pending red checks, reminding MDAG that this is the last pass for data submitter corrections before finalization. SPP staff reviewed priority red checks that must be addressed. There was a comment made regarding the SPS loads amounts. SPP clarified that the TWG presentation included the aggregate load total.

AGENDA ITEM 8B – SHORT CIRCUIT

SPP staff, Eric Sullivan, updated the group on the 2023 MDAG Short Circuit model build as well as the 2023 GMD model build. Noting that additional time will be given if required due to late posting.

MDAG MINUTES

February 16, 2023

AGENDA ITEM 8C – MOD-033

SPP staff, Eric Sullivan, updated the group on the 2021 MOD-033 East study and results.

AGENDA ITEM 8D – DYNAMICS

SPP staff, Zach Sabey, updated the group on the 2023 MDAG Dynamics model build as well as Dyre updates and PSSE V35 updates.

AGENDA ITEM 9 – DISCUSSION OF FUTURE MEETINGS

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

- a. MDAG: March 20, 2023 (~~9:00 AM~~1:00 PM – ~~124~~:00 PM)
- b. MDAG FG: February 21, 2023 (1:00 PM – 3:00 PM)

AGENDA ITEM 10 – SUMMARY OF ACTION ITEMS

Lottie discussed the action items from this meeting:

- **Action Item:** How are seasonal ratings shown in the MOD-033 effort.
- **Action Item:** SPP staff and stakeholders to review the proposed 2024 MDAG/2025 ITP timeline and schedule.

AGENDA ITEM 11 – ADJOURN

John Turner adjourned the meeting at 11:20 a.m. (CST).

MDAG MINUTES

February 16, 2023

Respectfully Submitted,

Lottie Jones
Secretary

Eric Sullivan
Secretary Assistant

Attachments

FEB16_Attach1- 1e. MDAG Meeting Agenda.docx

FEB16_Attach2 - 1c. MDAG Conference Call Attendance-02-16-2023~~2~~

FEB16_Attach3- 1f. Jan 19, 2023, Meeting Minutes.docx



2023 SERIES MDAG POWERFLOW MODEL BUILD UPDATE

BECCA MCCANN

DARIAN RICHARDS

LOTTIE JONES



OVERVIEW

- Status update
- Recommendation



STATUS UPDATE

- 2023 MDAG Proposed Final Models
 - Posted on 3/9/2023
- Completed Tasks
 - MOD and EDST - Unlocked for Data Submitters to make updates in preparation for the 2024 MDAG/2025 ITP series model build
 - Received model updates from Data Submitters via IDEV submissions
 - Report Card - SPP has reviewed for accuracy; however, Data Submitters please review as well
- Current Tasks:
 - Coordinating with Data Submitters on post processing idevs
- Future Tasks:
 - Run in post processing idevs and post final models

PROPOSED FINAL POSTING LOCATION

- GlobalScape: *Modeling (CELL, RSD) → MDAG Series → Powerflow → 2023 Series → G. Proposed Final*

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.



2023 SERIES MDAG SHORT CIRCUIT MODEL BUILD UPDATE

ERIC SULLIVAN

OVERVIEW

- Status update
- Recommendation

STATUS UPDATE

- 2023 MDAG Proposed Final Models
 - Posted on 3/17/2023
- Completed Tasks
 - Received model updates from Data Submitters via IDEV submissions
 - Report Card - SPP has reviewed for accuracy; however, Data Submitters please review as well
- Current Tasks:
 - Coordinating with Data Submitters on post processing idevs
- Future Tasks:
 - Run in post processing idevs and post final models

PROPOSED FINAL POSTING LOCATION

- GlobalScape: *Modeling (CELL, RSD) → MDAG Series → Short-Circuit → 2023 Series → C. Proposed Final*

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.



2023 SERIES MDAG GMD MODEL BUILD UPDATE

ERIC SULLIVAN

OVERVIEW

- Status update
- Recommendation

STATUS UPDATE

- 2023 MDAG Proposed Final Models
 - Posted on 1/19/2023
- Completed Tasks
 - Received model updates from Data Submitters

UPDATED GIC MODEL POSTING LOCATION

- [GlobalScape](#): *Modeling (CELL, RSD) → MDAG GMD Model Set → 2023 → 3. Updated GIC Model*

RECOMMENDATION

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



2024 MDAG MODEL BUILD DISCUSSION

2023

*Working together to responsibly and economically
keep the lights on today and in the future.*



SouthwestPowerPool



SPPorg

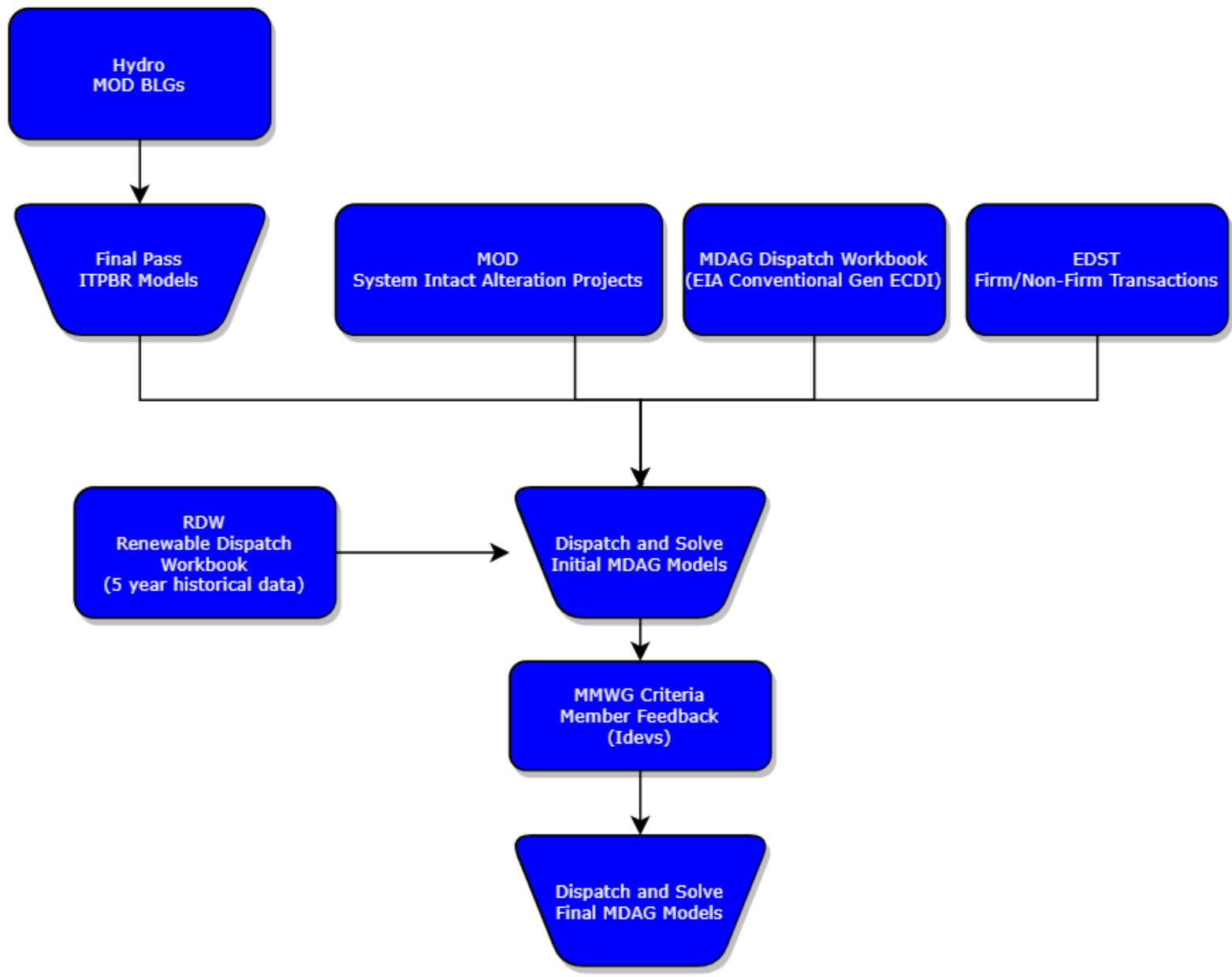


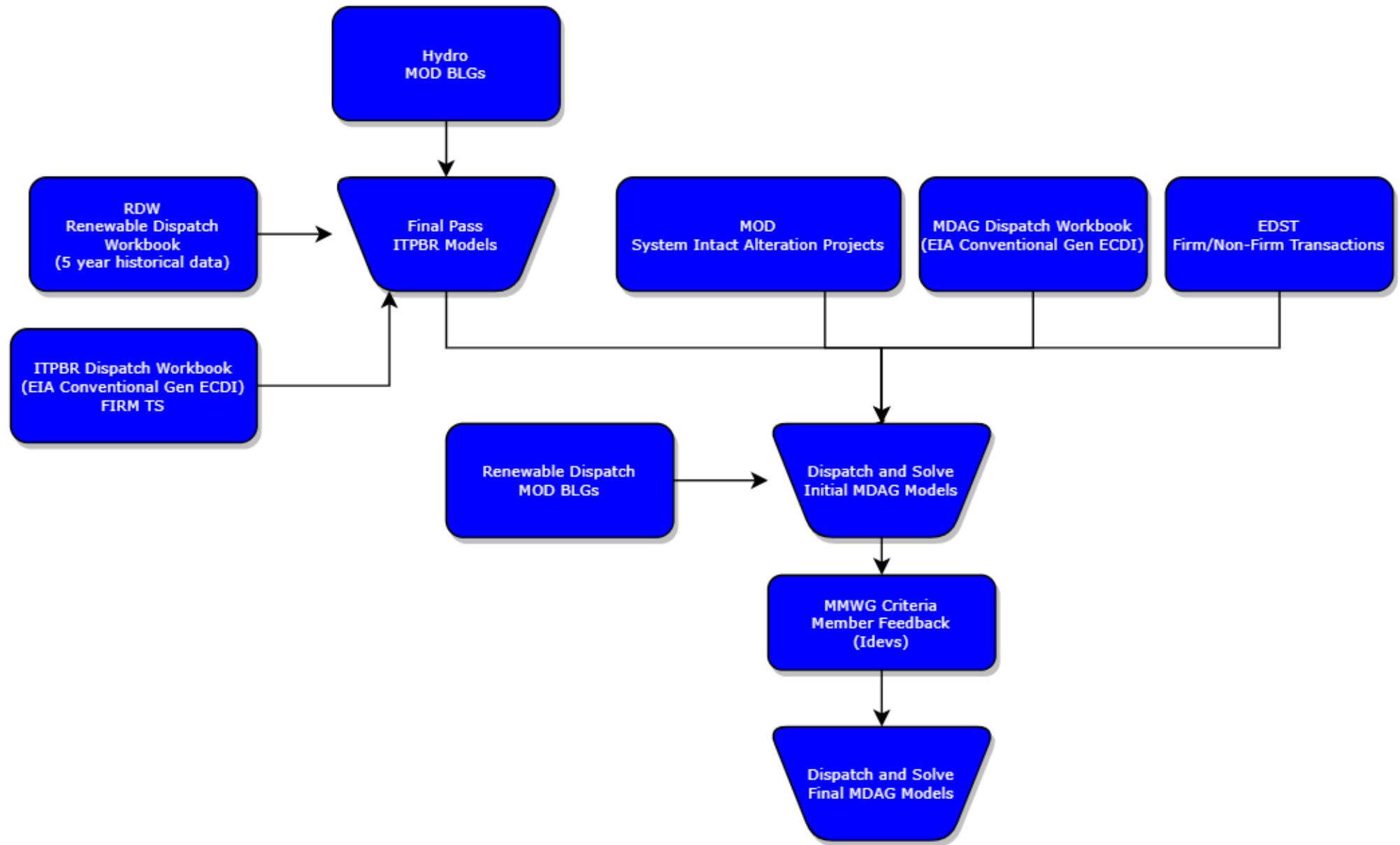
southwest-power-pool

SCRIPT C3 COMMON MODEL SET

OVERVIEW

- Flowchart
 - Example of building MDAG models using ITPBR models as a base
 - Capture data inputs
- Known concerns
- QA





KNOWN CONCERNS

- **Need more than one pass**
 - Maybe we can post first pass of MDAG with the initial final pass of ITPBR
 - Adding another pass might cut into the dynamics model build
- **Options for providing MDAG renewable dispatch**
 - Members have automation set up to feed MOD but not the RDW (Renewable Dispatch Workbook)
 - Hydro isn't in the RDW
 - SPP Staff discussing options internally

QA