Southwest Power Pool, Inc.
Model Development Working Group
Conference Call
October 1st:  9:00 A.M. – 10:30 A.M. (CDT)

• M I N U T E S •

Agenda Item 1 – Administrative Items:

– Agenda Item 1a and 1b – Call to Order & Antitrust Statement:
The meeting was called by Chairman, Nate Morris, to order at approximately 9:02 a.m. on October 1st. The SPP Antitrust statement was read to the group at the start of the meeting on October 1st.

– Agenda Item 1c and 1d – Attendance and Proxies:
The following MDWG members and guests attended.

MDWG Members present:
Sunny Raheem mentioned the group does have two open seats at this time. Nate Morris mentioned to the group that discussion about the two open seats will be discussed at the October 4th MDWG conference call.

<table>
<thead>
<tr>
<th>MDWG Member</th>
<th>Present</th>
<th>Proxy</th>
<th>Present</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td>Nate Morris</td>
<td>YES</td>
<td></td>
<td></td>
<td>Empire District Electric Company</td>
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<tr>
<td>Derek Brown</td>
<td>NO</td>
<td>Marcus Moor (9:00-9:45am) and Ryan Baysinger (9:45-10:30am)</td>
<td>YES</td>
<td>Evergy Companies</td>
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<tr>
<td>Dustin Betz</td>
<td>YES</td>
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<td>Nebraska Public Power District</td>
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<td>John Boshears</td>
<td>YES</td>
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<td>City Utilities of Springfield</td>
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<tr>
<td>Jerad Ethridge</td>
<td>YES</td>
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<td>Oklahoma Gas &amp; Electric</td>
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<tr>
<td>Joe Fultz</td>
<td>YES</td>
<td></td>
<td></td>
<td>Grand River Dam Authority</td>
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<tr>
<td>Holli Krizek</td>
<td>NO</td>
<td></td>
<td></td>
<td>Western Area Power Administration</td>
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<tr>
<td>Reené Miranda</td>
<td>NO</td>
<td>Aravind Chellappa</td>
<td>YES</td>
<td>Southwestern Public Service</td>
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<tr>
<td>Alex Mucha</td>
<td>NO</td>
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<td>Oklahoma Municipal Power Authority</td>
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<tr>
<td>Scott Schichtl</td>
<td>YES</td>
<td></td>
<td></td>
<td>Arkansas Electric Cooperative Company</td>
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<tr>
<td>Jason Shook</td>
<td>NO</td>
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<td>GDS Associates</td>
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<tr>
<td>Liam Stringham</td>
<td>YES</td>
<td></td>
<td></td>
<td>Sunflower Electric Power Corporation</td>
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<tr>
<td>Open Seat</td>
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<td>Open Seat</td>
<td>N/A</td>
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<td>N/A</td>
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<tr>
<td>Sunny Raheem</td>
<td>YES</td>
<td></td>
<td></td>
<td>Southwest Power Pool, Inc.</td>
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</tbody>
</table>

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.
Additional Guests present:

In addition to WebEx attendance

<table>
<thead>
<tr>
<th>Guests</th>
<th>Company</th>
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<tbody>
<tr>
<td>Martin Green</td>
<td>American Electric Power</td>
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<tr>
<td>Josh Hesselbein</td>
<td>Arkansas Electric Cooperative Company</td>
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<tr>
<td>Preston Blinsky, Ryan Koch</td>
<td>Basin Electric Power Cooperative</td>
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<tr>
<td>Kevin Foflygen, Jeff Knottek, John Allen</td>
<td>City Utilities of Springfield</td>
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<td>Jeff Crites</td>
<td>Empire District Electric Company</td>
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<td>Lafayette Gatewood IV, Jeremy Harris, Ryan Baysinger</td>
<td>Evergy Companies</td>
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<td>Marcus Moor</td>
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<tr>
<td>Diego Toledo, Dona Parks, Kiet Nguyen</td>
<td>Grand River Dam Authority</td>
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<tr>
<td>Michael Wegner</td>
<td>ITC Great Plains</td>
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<tr>
<td>Alan Burbach</td>
<td>Lincoln Electric System</td>
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<tr>
<td>Tom Homewood</td>
<td>Midwest Energy</td>
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<tr>
<td>Armin Sehic</td>
<td>Municipal Energy Agency of Nebraska</td>
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<tr>
<td>Jarrod Wolford</td>
<td>Northeast Texas Electric Cooperative, Inc</td>
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<tr>
<td>James Thomas</td>
<td>Oklahoma Electric and Gas Company</td>
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<tr>
<td>Eddie Watson, Jeff McDiarmid</td>
<td>Southwest Power Pool, Inc.</td>
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<tr>
<td>Scott Mijn</td>
<td>Southwestern Power Administration</td>
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<tr>
<td>Aravind Chellappa</td>
<td>Southwestern Public Service</td>
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<tr>
<td>Tanner New</td>
<td>Sunflower Electric Power Cooperative</td>
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<tr>
<td>Patrick Jackson</td>
<td>Tenaska</td>
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<tr>
<td>Chris Gilden</td>
<td>Tri-State Generation &amp; Transmission</td>
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<tr>
<td>Ben Hammer, Garrick Nelson</td>
<td>Western Area Power Administration</td>
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– **Agenda Item 1e(i) – Agenda Review (Action Item):**
Nate Morris asked the group if they had any modifications to the agenda or issues with the posted material. The group did not voice any modifications.

Motion: Dustin Betz motioned to approve the agenda as presented during the meeting (OCT1_MM_Attach 1 - 1e. MDWG Meeting Agenda 20181001.docx). Scott Schichtl seconded the motion. The motion passed unanimously.

**Agenda Item 2 – 2018 MDWG Dynamic Models Discussion and Approval (Approval Item*):**
Nate Morris led the group in discussion and proposed approval of the 2018 MDWG dynamic model discussion. Nate asked the group if they had an opportunity to review the final models and if the group had any concerns about the models.

Sunny Raheem outlined the latest member feedback and proposed post-processing updates received since posting the models on September 24th. Sunny stated the simulations meet the project scope of simulating in PSSE v33.10, however the SPP consultant did observe some difficult simulating in PSSE v33.11 due to data changes after the initial posting. Sunny outlined the member proposed post-processing corrections for the 21L case crash in v33.11 and reverting to a previous version of an OPPD turbine-governor model due to initialization warnings. Sunny mentioned that the 21L, 21S, and 29S are part of the 2019 SPP TPL analysis. These cases will require updates and MDWG approval after the October SPP Board of Directors decisions. Staff recommended they would like to seek approval of the models as final with post processing corrections to incorporate the changes mentioned on the call. Eddie Watson and Sunny Raheem thanked the group for their participation during the 2018 MDWG Dynamic Model Build.

Nate opened the floor to entertain a motion.

Motion: Marcus Moor motioned to approve the proposed final 2018 MDWG Dynamics models with post processing updates provided by August 31st as explained by SPP Staff. Scott Schichtl seconded the motion. The motion passed unanimously.

**Agenda Item 3 – Administrative Items:**

- **Agenda Item 3a – Summary of Action Items:**
  - None

- **Agenda Item 3b – Future Meetings:**
  Nate Morris provided a recap of the upcoming future meetings.

- **Agenda Item 3c – Adjourn Meeting:**
  With no further discussion, Nate Morris solicited a motion to adjourn the meeting and table the remaining items.

  **Motion:** Jerad Ethridge motioned to adjourn the meeting. Marcus Moor seconded it. The motion passed unanimously.

  The meeting adjourned at 9:39AM (CDT).

Respectfully submitted,

Sunny Raheem
SPP Staff Secretary
Southwest Power Pool, Inc.
MODEL DEVELOPMENT WORKING GROUP
October 1, 2018
Net Conference

• A G E N D A •

9:00 a.m. – 10:30 a.m. (CDT)

1. Administrative Items .......................................................................................................................... Nate Morris (10 mins)
   a. Call to Order
   b. Antitrust Statement
   c. Attendance
   d. Proxies
   e. Agenda Review (Approval Item)
      i. Acknowledgement of discuss meeting materials
2. 2018 MDWG Dynamic Models Discussion and Approval (Approval Item*) .................................. All (75 mins)
3. Administrative Items .......................................................................................................................... Nate Morris (5 mins)
   a. Summary of Action Items
   b. Future Meetings
      i. October 4th 9-12pm (Central)
   c. Adjourn

Note: The approval items denoted with “*” shall be jointly developed by PC, TP, and MDWG.

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