



**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP**

**January 30, 2015
Conference Call
9:00 – 11:00 A.M.**

• M I N U T E S •

Agenda Item 1 - Administrative

The meeting was called to order at 9:08 a.m. The following Model Development Working Group (MDWG) members were in attendance:

Nate Morris, Chair – Empire District Electric Company
Joe Fultz – Grand River Dam Authority
Dustin Betz – Nebraska Public Power District
John Boshears - City Utilities of Springfield
Derek Brown – Westar Energy
Liam Stringham – Sunflower Electric Power Corporation
Reené Miranda – Southwestern Public Service
Scott Rainbolt – American Electric Power
Brian Wilson – Kansas City Power & Light
Jason Shook – GDS Associates

SPP Staff in attendance included Anthony Cook (Secretary), Kelsey Allen, Mitch Jackson, Scott Jordan, John Mills, and Zackary Bearden.

The following guests were also in attendance:

Peter Howard – Kansas City Power & Light
William Hawkins – Western Farmers Electric Cooperative
Holli Krizek – Western Area Power Administration
Wayne Haidle – Basin Electric
Gimod Olapurayil – ITC Great Plains
Dona Parks Bud Averill – Grand River Dam Authority
Mark Reinart – Golden Spread Electric Cooperative
Thomas Mayhan – Omaha Public Power District
Alex Mucha – Oklahoma Municipal Power Authority
Jason Bentz – American Electric Power
Jerad Ethridge, James Thomas Jr. – Oklahoma Gas & Electric
Bruce Doll – Municipal Energy Agency of Nebraska

Group Membership Update

Nathan McNeil resigned his position on the MDWG thus creating an open position as well as vacating the Vice Chair position. Nate Morris appointed Derek Brown to fill the Vice Chair position. Anthony will solicit for applicants to fill the position.

**AI: Send out application for member position by Monday, February 2, 2015.
Request submissions by February 9, 2015.**

Meeting Agenda

The group was asked if anyone had any issues or needed more time to review the posted material. There were no concerns from anyone for this meeting.

The agenda was reviewed by the group. Jason Shook motioned to approve the agenda; Derek Brown seconded the motion. The motion passed unopposed.

(Attachment 1 - MDWG Meeting Agenda 20150130.docx)

Meeting Minutes

The November 12, 2014 minutes were open for review. Several names were added to the list of attendees, wording edits were made to item 5, and an action item was added to item 13. Brian Wilson motioned to approve the minutes with changes. Reen  Miranda seconded the motion. The motion passed unopposed.

(Attachment 2 - MDWG Minutes November 12, 2014.doc)

Agenda Item 2 – ITP 10 Request:

Model

The Economic Planning department requests the members to consider creating a 2026 summer load forecast to be used for the ITP 10 study. Kelsey Allen stated that the 2025 summer could be used; however, by the time the study ends in 2017, the model will be an eight year out window. Kelsey stated that the Economic Planning department wants to get MDWG approval of either using the current 2025 summer or to create a 2026 summer. Several members stated that the amount of work involved to create an additional load profile for a model that is 10 years out is not worth the effort and that a 2025 summer load profile is just as good right now. Nate Morris asked SPP staff to poll the members for a change in load, generation, and topology between 2025 summer and 2026 summer. He also asked Staff to discuss the implications of not having a 2026 summer profile with management.

AI: SPP staff to poll members for change in load, generation, and topology between 2025 summer and 2026 summer.

AI: Staff to discuss implications of not using 2026 summer with management.

Data Review

Kelsey revisited the data review request Clayton Mayfield presented in the November 12, 2014 meeting. This effort is to be able to map data for the ITP 10 study. Kelsey stated that the goal is to create consistency between model sets and make it more efficient for members and SPP staff. After Kelsey explained the data, the MDWG members prefer that the load and loss factors for demand groups be requested through

the ESWG representatives. Kelsey stated that he will post the latest data and send out an email to request the review with submission dates.

AI: Kelsey Allen to post updated data for review and send email requesting review.

Agenda Item 3 – MDWG Model Building Activities:

2015 Series Powerflow Update

Anthony stated that the models still have docucheck issues remaining. He stated that the models will be posted today for review. The members will have until Tuesday, February 3, 2015 to submit corrections. SPP staff will incorporate any updates and re-post on Friday, February 6, 2015.

2015 Series Dynamic Update

Scott Jordan stated that an initial data update request has already been sent out for review and that member feedback is due February 13, 2015. He stated that staff is reviewing differences with the latest powerflow models against the MMWG dyre file to mitigate the lateness of the MMWG models. The question was asked when it was decided to not build the half cycle simulation. SPP staff will have to look into this request.

AI: Staff to check on when the half cycle simulation went away.

Agenda Item 4 – Summary of Action Items:

- **Send out application for member position by Monday, February 2, 2015. Request submissions by February 9, 2015.**
- **SPP staff to poll members for change in load, generation, and topology between 2025 summer and 2026 summer.**
- **Staff to discuss implications of not using 2026 summer with management.**
- **Kelsey Allen to post updated data for review and send email requesting review.**
- **Staff to check on when the half cycle simulation went away.**

Agenda Item 5 – Future Meeting:

MDWG Face-to-Face

It was requested for Anthony to confirm dates with the TWG and ESWG for a May meeting and set up an MDWG meeting for the same week.

Adjourn Meeting

Jason Shook motioned to adjourn the meeting, Dustin Betz seconded the motion. The motion passed unopposed.

Respectfully submitted,
Anthony Cook
SPP Staff Secretary

Southwest Power Pool, Inc.
MODEL DEVELOPMENT WORKING GROUP
January 30, 2015
Conference Call
9:00 A.M. – 11:00 A.M.

• A G E N D A •

1. Administrative Items Nate Morris (20 min)
 - a. Call to Order
 - b. Introductions
 - c. Proxies
 - d. Group Membership Update
 - e. Agenda Review (Action Item)
 - i. Meeting Materials
 - f. Previous Meeting Minutes (Action Item)
 - i. November 12, 2014 Conference Call

2. ITP 10 Requests (30 min)
 - a. Model Anthony Cook/Kelsey Allen
 - b. Data Review Kelsey Allen/ Clayton Mayfield

3. MDWG Model Building Activities Anthony Cook (10 min)
 - a. 2015 Series
 - i. Powerflow Update
 - ii. Dynamics Update

4. Summary of Action Items Anthony Cook (5 min)

5. Future Meeting..... Nate Morris (5 min)
 - a. MDWG Face-to-Face: ?



**Southwest Power Pool, Inc.
Model Development Working Group
November 12, 2014
SPP Corporate Offices
Little Rock, Arkansas
1:00 P.M. – 5:00 P.M.**

• M I N U T E S •

Agenda Item 1 - Administrative

The meeting was called to order at 1:00 p.m. The following Model Development Working Group (MDWG) members were in attendance:

Nate Morris, Chair – Empire District Electric Company
Dustin Betz – Nebraska Public Power District
John Boshears - City Utilities of Springfield
Derek Brown – Westar Energy
Nathan McNeil – Midwest Energy
Reené Miranda – Southwestern Public Service
Scott Rainbolt – American Electric Power
Brian Wilson – Kansas City Power & Light
Jason Shook – GDS Associates
Liam Stringham – Sunflower Electric Power Corporation

SPP Staff in attendance included Anthony Cook (Secretary), Brandon Hentschel, Mitch Jackson, Scott Jordan, John Mills, Michael Odom, Chris Haley, Chris Jamieson, Clayton Mayfield, Rosemary Mittal, Zack Bearden, Daniel Harless, James Bailey, Sunny Raheem, and Doug Clark.

The following guests were also in attendance:

Jason Bentz, Tony Tong – American Electric Power
Martin Green, Dona Parks – Grand River Dam Authority
Peter Howard – Kansas City Power & Light
Aravind Chellappa – Southwestern Public Service
Jerry Bradshaw, Kevin Foflygen - City Utilities of Springfield
Gimod Olapurayil – ITC Great Plains
Mark Reinart – Golden Spread Electric Cooperative
Alex Mucha – Oklahoma Municipal Power Authority
Jared Ethridge, James Thomas Jr. – Oklahoma Gas & Electric
John Weber – Missouri River Energy Services
Bruce Doll – Municipal Energy Agency of Nebraska
William Hawkins – Western Farmers Electric Cooperative
David Spargo, Tom Mayhan, Jon Shipman – Omaha Public Power District
Danny Parrish – Green Country
Jeremy Harris – Westar Energy
Wayne Haidle, Jeremy Severson – Basin Electric Power Cooperative
Shivram Sundar – Denver Energy Group

Martin Green for Joe Fultz

Group Membership Update

Liam Stringham filled the member position left vacant by Mike Clifton and was approved by President and CEO of SPP Nick Brown.

Meeting Agenda

The group was asked if anyone had any issues or needed more time to review the posted material. There were no concerns from anyone for this meeting.

The agenda was reviewed by the group. The agenda was rearranged in order of importance. Two additional items, TPL 007-1 and MDWG Membership Survey, were added to discuss if time allows. Scott Rainbolt motioned to approve the agenda with changes; Derek Brown seconded the motion. The motion passed unopposed.

(Attachment 1 - MDWG Meeting Agenda 20141112.docx)

Meeting Minutes

The October 23, 2014 minutes were open for review. Anthony presented changes made to the minutes. Brian Wilson motioned to approve the minutes with changes. Jason Shook seconded the motion. The motion passed unopposed.

(Attachment 2 - MDWG Minutes October 23, 2014.docx)

Agenda Item 2 – TPLTF Updates:

Michael Odom presented updates for the TPLTF per the provided PowerPoint presentation posted with the background materials. He stated to contact anyone on the Taskforce if there were additional questions. Scott Rainbolt stated the Taskforce is working with the SPP Regional Entity (RE) to send out a guidance letter to the Compliance Departments of each SPP Member company.

Nate Morris asked what the individual companies need to be prepared for as far as work load and time frame. The Taskforce plans to have a Guidance Document posted by February 2015 that addresses stability criteria, but focuses mainly on R1 and R7 of the TPL-001-4 standard. Nate Morris asked if the Taskforce could expand on how much more stability analysis will be needed. Reené Miranda simply stated it could be a significant amount. Nate pointed out his concern and suggested each company make sure they have the needed trained staff to perform the required stability analysis. Derek Brown stated there is a TWG action item to determine a tool for stability analysis. Michael stated he will follow up with Kirk Hall. John Boshears asked how much responsibility individual utilities have versus SPP to perform these analyses. Michael said the Taskforce currently does not have an accurate portrayal of the amount of work the PC and TOs will have to do, but they are working on a scope document to be out sometime in December.

Dustin Betz asked about a schedule for developing the contingency files by SPP. Scott Jordan stated Staff plans to provide the files for review with the final 2015 Series MDWG model set. Michael stated that additional discussion is needed by Staff to further determine a schedule.

Nate asked if SPP plans on hosting another Dynamic Workshop next summer. Scott Jordan stated the goal is to start having them annually.

Agenda Item 3 – ITP 10 Model Review:

Clayton Mayfield presented on ITP 10 process improvements and plans to have the steady state modeling contacts participate in the Economic Group's data updates per the provided PowerPoint presentation and Excel Workbook posted with the background materials. Currently the ESWG has a month to review the data which can end up with discrepancies when compared to the powerflow models. Clayton explained the data in the workbook and asked the group if the modeling contacts would be willing to help update the data to get it more accurate.

Reené stated that SPS doesn't have data for IPPs for percent based ownership. Chris Jamieson stated that these records are not used for just ownership but also for purchase percentages and that IPPs would need to be thought about more by the Economic group as to who is responsible for that data. Nate Morris asked about generation outside of the SPP footprint. Chris said those would also fall under the same problem as IPPs.

Derek Brown asked if SPP Staff is asking the members to start reviewing the data now and when is it due. Anthony stated the idea is for the members to be aware of the data earlier instead of waiting until one month prior to the build. He stated that the plan is to post the data with each pass in future MDWG model builds. Derek asked how SPP wants to handle it this year since the 2015 series is almost complete. Nate stated that since the 2015 Series models are on a tight schedule it would be best to wait until January to start the review. Chris and Clayton agreed that waiting until January would be fine.

Derek commented on modeling auxiliary load for generators. He stated that in some cases the auxiliary load is two-thirds the maximum value when the unit is off. He stated that it could be cumbersome modeling the auxiliary load compared to the unit output. John Boshears stated it can be more complicated if there are multiple units at a plant. Clayton stated the auxiliary load data will be removed from the data workbook until the MDWG has a chance to discuss best modeling practices of auxiliary load.

AI: Clayton Mayfield to post economic data workbook.

AI: Modeling contacts to review the Economic Planning workbook in January.

AI: Staff to check with the TPLTF on how to handle auxiliary loads in the ITP models.

Agenda Item 4 – MOD-32 Requirement 1 Gap Analysis:

Anthony Cook asked the group if the gap analysis posted with the background materials fulfilled the need of the request. Derek Brown stated that it appeared to be sufficient. Nate Morris asked for the MDWG Participation Sheet to be updated to support MOD-32 data requirements.

AI: SPP Staff to update the MDWG Participation sheet to support MOD-32 data requirements by February 1, 2015.

Agenda Item 5 – NERC Requirements: Compliance for IPPs:

Scott Rainbolt stated Green Country requested information to meet the new MOD standards. He referenced the letters sent out by SOO to gather generation data. He asked SPP to provide a different specification sheet for the IPP owners since they do not have PSS/e and incorporate it into the MDWG Procedure Manual. Derek Brown stated that it might be difficult to capture all data in one generic specification sheet. Scott Jordan stated that Staff would like to work one-on-one with individuals to gather the needed data. ~~Reené stated that one option to gather the needed data is through NATF.~~ John Mills answered that the issue with NATF is they require a password for accessibility. Scott Jordan added that the data is too generic for PSS/e. Reené

stated the SPS generation group put together a planning procedure for request from generators to contact the manufacturer to get the information or hire a subject matter expert. SPP Staff is continuing to look at ways to request data.

Agenda Item 6 – MMWG Update:

Anthony stated that the MMWG is migrating to PSS/e version 33 for powerflow but are still working on testing for dynamics. Anthony stated that SPP will be moving to version 33 for the 2016 MDWG series model build.

He then stated what models the MMWG are proposing to the ERAG Management Committee for the 2015 series build. If approved, there will be several models that don't have a one-for-one match from the MDWG set. He stated that SPP Staff may have to ask for profiles to be submitted to support the extra models when the MMWG begins to build the 2015 series.

AI: Anthony to provide the 2015 Series MMWG case list once decided upon.

Agenda Item 7 – Model Dispatch Options:

Zack Bearden gave an overview of potential improvements to dispatching the ITP NT models. Staff is looking to incorporate something in future builds. He stated he is looking into creating PSS/e ECDI files based on economic data from recent market data. This would replace the current method of using a block dispatch. Brandon Hentschel said that the ECDI file is much easier to maintain versus the block dispatch. Nate Morris asked if a priority report could be provided to the members for an initial review. Nathan McNeil asked how companies with long term contracts with other companies would be handled. Nate asked how often the data would need to be reviewed. Zack answered once a year as is the current process. Zack stated Staff would build parallel models for testing purposes before fully implementing this new process. Anthony added that the main purpose for now is to present the concept to the MDWG to spark discussion and weed out any possible deficiencies.

Agenda Item 8 – Definition of Pmax:

Anthony stated that this item wasn't needed. Per the approved "Modeling of Generator Parameters" document, the generator parameter PMAX shall be modeled as a gross seasonal maximum capability based on MOD-025-02 and SPP Criteria 12.1 testing and reporting procedures.

Agenda Item 9 – Model Development Procedure Manual:

General Updates

Anthony presented the changes made to the manual. The group asked to update the membership section as well. The group made edits to the short circuit updates. Reené asked how windfarms are handled during short circuit analysis. Staff will have to review and report back to the group. The group directed Staff to not make the generator changes in the manual until the required date. Leave the Generator Parameter sheet but add a footnote for effective date.

AI: Staff to ask Doug Bowman how windfarms are handled in short circuit analysis. How they should be modeled.

AI: Provide updated manual to MDWG for approval by November 21.

Agenda Item 10 – Modeling Practices of Windfarms; GI updates:

The discussion continued from the meeting held on October 23, 2014. Anthony asked multiple vendor turbines are used on one collection system and are they modeled as one aggregated unit or as separated. Several members stated that situation is not typical.

Derek Brown stated that it is usually much easier to get the needed data prior to interconnection than after the windfarm has gone in-service. He stated that one way is to make it a milestone in the interconnection agreement. Reené stated that MOD-32 requires the owner to provide the data within 90 days of request. Derek added that the owners are required to validate the data is correctly represented.

Agenda Item 11 – TPL 007-1: Tabled

Agenda Item 12 – MDWG Membership Survey: Tabled

Agenda Item 13 – Summary of Action Items:

- Clayton Mayfield to post economic data workbook.
- Modeling contacts to review the Economic Planning workbook in January.
- SPP Staff to update the MDWG Participation sheet to support MOD-32 data requirements by February 1, 2015.
- Anthony to provide the 2015 Series MMWG case list once decided upon.
- Staff to ask Doug Bowman how windfarms are handled in short circuit analysis. How they should be modeled.
- Provide updated manual to MDWG for approval by November 21.
- Staff to check with the TPLTF on how to handle auxiliary loads in the ITP models.
- Anthony to solicit nominations for Vice Chair position.

Adjourn Meeting

Scott Rainbolt motioned to adjourn the meeting, Dustin Betz seconded the motion. The motion passed unopposed.

Respectfully submitted,
Anthony Cook
SPP Staff Secretary