

**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP
November 13, 2012
Southwest Power Pool Corporate Office
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 1:18 p.m. The following Model Development Working Group (MDWG) members were in attendance:

Joe Fultz, Chair – Grand River Dam Authority (GRDA)
Nate Morris, Vice Chair – Empire District Electric (EDE)
Scott Rainbolt – American Electric Power (AEP)
Jason Shook – GDS Associates (GDS)
Nathan McNeil – Midwest Energy (MIDW)
Reené Miranda – Southwestern Public Service (SPS)
Brian Wilson – Kansas City Power & Light (KCPL)
John Boshears – City Utilities of Springfield (CUS)
Mike Clifton – Oklahoma Gas & Electric (OGE)
Mo Awad – Westar Energy (WR)
Dustin Betz - Public Power District (NPPD)

SPP Staff in attendance included Anthony Cook (Secretary), Kelsey Allen, Mitch Jackson, Brandon Hentschel, Zack Bearden, and Scott Jordan.

The following guests were also in attendance:

Derek Brown – Westar Energy (WR)
John Payne – Kansas Electric Power Cooperative (KEPCo)
Jason Bentz – American Electric Power (AEP)
Corey Falgout – American Electric Power (AEP)
Tim Smith – Western Farmers Electric Cooperative (WFEC)
Peter Howard - Kansas City Power & Light (KCPL)
Alex Mucha – Oklahoma Municipal Power Authority (OMPA)
Mark Reinart – Golden Spread Electric Cooperative (GSEC)
Aravind Chellappa – Southwestern Public Service (SPS)
Jeremy Pearman – Oklahoma Gas & Electric (OGE)
Ryan Einer – Oklahoma Gas & Electric (OGE)

Meeting Agenda

The agenda was reviewed by the group. Additions were made to Item 10. Nate Morris motioned to approve the agenda with the edit; Jason Shook seconded the motion. The motion passed unopposed.

(Attachment 1 - MDWG Meeting Agenda 20121113.doc)

Meeting Minutes

The July 26, 2012, August 25, 2012, August 29, 2012, and October 1, 2012 minutes were open for review. Nathan McNeil motioned to approve the previous meeting minutes; Nate Morris seconded the motion. The motion passed unopposed.

(Attachment 2 - Finalization of Powerflow Cases Email Vote 20120726.doc, Attachment 3 – Finalization of Dynamic Cases Email Vote 20120825.doc, Attachment 4 – MDWG Minutes 20120829.doc, Attachment 5 – Finalization of Dynamic Cases Email Vote 20121001.doc)

Review of Action Items

Anthony Cook reviewed some of the recently completed and in progress action items. Item #50: Staff has worked to edit the document. Hyperlinks have been made to reference various documents. Anthony is currently working to reorganize the manual.

Item #56: Entergy has agreed to coordinate loads to remove ZILs. Anthony has sent an email to those members with regional ties.

Item #85: This will be discussed in the meeting.

(Attachment 6 - SPP MDWG Action Items 20121113.xls)

Agenda Item 2 – Review of MDWG Charter:

The group reviewed the MDWG Charter for possible updates. There were some suggestions to change STEP to align more with ITP model building and emphasize these are not economic models. Members are to send proposal updates to Anthony for review at a future meeting.

Agenda Item 3 – MMWG Update:

Anthony Cook stated that the MMWG will build the 2013 Series Cases using PSS/E version 32. They will discuss a possible move to a newer version at the 2013 Spring meeting.

Agenda Item 4 – Data Reporting Requirements and Enforceability:

Anthony Cook stated that the Balance Authority (BA) is responsible for collecting data within their footprint according to the SPP Tariff. He also stated that that data is to be updated during the model building schedule. Reené Miranda stated that the Load Serving Entity (LSE) is required to submit data to SPP not the BA. Kelsey Allen stated the Regional Entity (RE) data request requires LSEs to submit data through the BA if they are a registered member. Reené stated that he disagrees that the BA be responsible for getting the LSE data. Anthony added that if an LSE doesn't supply the data upon the request of the BA and they are a member, SPP can assist in requesting the data. Reené and Mo Awad agree that data should be sent to SPP, but coordinated with the BA. Nathan McNeil added that this extends for generation and asked who is responsible for getting generation data for the models.

Kelsey stated that there needs to be a process improvement take place. Reene asked how many LSEs don't supply data as a percentage base. Mo asked for SPP to compile a list of LSEs to get an idea of how many companies this might involve.

Action Item – SPP staff to compile a list of LSEs

Action Item – Scott Jordan and Anthony cook will develop a process to use the data from GI and convert them to MOD Projects via the SPP Modeling Contacts.

Agenda Item 5 – Area Summary Report Evolution:

Anthony stated that SPP staff can create area summary reports based on the data within the models; however, if this needs to be LSE summaries, SPP can't create the reports. Mo Awad asked if the reports are needed. The group asked for SPP to find out if this is a requirement to create. If it isn't, the group is in favor of removing it from the data submittal workbook, otherwise SPP will create a LSE summary sheet template and distribute it to be filled out.

Action Item – SPP staff to find out if area summary reports are required.

Agenda Item 6 – Generation Retirement Process:

Nate Morris questioned the appropriate process for removing generation from the model. He cited the changes due to EPA regulations as well as retirements of generation in general. Anthony Cook stated that the unit should go through the undesignated resource process. Kelsey Allen added that the MDWG doesn't have an official process and that there is nothing preventing someone from removing a unit from the MDWG models. However, if the unit hasn't gone through the undesignated resource process, it will be added back into the ITP models. Nate asked how the discrepancy will be handled for planning if comparisons are made between the models.

Action Item – Anthony to ask TWG to discuss process for generation retirement and confidentiality.

Agenda Item 7 – Detail Modeling:

Anthony Cook began the discussion by asking the group how much detail is too much. He cited an example of two generators that have not been modeled and now want to be registered in the Market. Some Municipal's system are not modeled in detail, but are modeled as a load on a High Voltage (69, 115,138, or 161kV) bus. Should the generation units be modeled on the 138 kV bus or should the system be modeled in more detail to more accurately represent the system?

Mo Awad stated that it is a common practice to model the generation on the same voltage level as the load. Kelsey Allen added that the MITF Whitepaper states for generation registered to the market. Reené added that if it affects the dynamics of the system, detail should be included.

Anthony stated that this discussion is for information purpose only for now and no action is required.

Agenda Item 8 – EMS vs. MOD Modeling:

Scott Rainbolt described the internal process of updating ratings to MOD. He stated that SPP Operation staff continually contacts members asking why MOD ratings don't match EMS submissions. Kelsey explained that Ops staff uses MOD to validate seasonal ratings, but he encourages them to wait until the base case is updated. He added that the models need to be as accurate as possible so that if an event happens, the model can be used to replicate the event. The models are also needed for TCR to build models. Scott added that AEPW doesn't add updates until the next planning cycle.

Nathan McNeil stated that EMS operations sends out monthly emails for updates. Joe Fultz and Mo Awad stated that an email from the TO should supersede MOD.

Action Item – SPP modeling staff to educate operation staff on MOD.

Agenda Item 9 – CBA Model Update/Discussion:

Kelsey Allen reminded everyone to review the posted data and submit any comments.

Agenda Item 10 – Other:

a. 2013 Dynamic Model Build Schedule:

Scott Jordan discussed the proposed updates to the 2013 Series MDWG Dynamics schedule. He proposed taking 5 days from _____ and 5 days from _____ and adding the 10 days to the end for _____. Scott proposed the group review the changes and vote on them at a future meeting.

(Attachment 7 - 2013 MDWG Dynamics Model Build Schedule.pdf)

b. Dynamic Load Modeling:

Joe Fultz mentioned that dynamic load modeling is an item that was discussed in the TSTF and that for all who weren't aware, it is addressed in multiple standards that are out for comment. He asked if anyone was modeling dynamic load and if so to let their stability staff know that it will be a topic going forward due to the effects on stability studies.

Nathan McNeil stated that if there is going to be a significant change to how dynamic loads are modeled, it will take time to gather the necessary data.

c. Attachment AQ Updates:

Mo Awad gave an update on the TWG Attachment AQ process discussion from the November 7-8, 2012 meeting.

Agenda Item 11 - Closing Administrative Duties:

Next Meetings:

Face-to-Face: TBD, 2013

Next Meeting Topics: TBD

Summary of New Action Items

1. **SPP staff to compile a list of LSEs.**
2. **Scott Jordan and Anthony cook will develop a process to use the data from GI and convert them to MOD Projects via the SPP Modeling Contacts.**
3. **SPP staff to find out if area summary reports are required.**
4. **Anthony to ask TWG to discuss process for generation retirement and confidentiality.**
5. **SPP modeling staff to educate operation staff on MOD.**

Adjourn Meeting

Reené Miranda motioned to adjourn the meeting, Scott Schichtl seconded the motion. With no further business to discuss, the MDWG adjourned at 2:00 p.m.

Respectfully submitted,
Anthony Cook
SPP Staff Secretary



**Southwest Power Pool, Inc.
 MODEL DEVELOPMENT WORKING GROUP
 November 13, 2012
 SPP Corporate Offices
 Little Rock, Arkansas
 1:00 P.M. – 5:00 P.M.**

• ~~DRAFT~~ Final A G E N D A •

- 1. Administrative Joe Fultz
 - a. Call to order
 - b. Proxies
 - c. Approve agenda
 - d. Approve minutes of previous meeting and email votes
 - i. July 26, 2012
 - ii. August 25, 2012
 - iii. August 29, 2012
 - iv. October 1, 2012
 - e. Review of Action Items
- 2. Review of MDWG Charter All
- 3. MMWG Update Anthony Cook
- 4. Data Reporting Requirements and Enforceability All
 - a. Who is responsible for the data exchange
 - b. When data exchange is required
 - c. How to enforce the exchange of data
- 5. Area Summary Report Evolution All
 - a. Area vs. LSE
- 6. Generation Retirement Process All
- 7. Detail Modeling All
 - a. Municipals
 - b. Cooperatives
- 8. EMS vs. MOD Modeling All
- 9. CBA Model Update/Discussion All
- 10. Other All
 - a. 2013 Dynamic Model Build Schedule
 - b. Dynamic Load Modeling
 - 10.c. Attachment AQ Update A
- 11. Closing Administrative Duties Joe Fultz
 - a. Next meeting place and date
 - b. Next meeting topics

Formatted



- c. Review of Action Items
- d. Adjourn meeting



**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP
July 26, 2012
Email Vote**

• M I N U T E S •

The 2012 Series MDWG Build 2 Pass 4 powerflow models were posted for comments on July 18, 2012. Since no outstanding concerns were submitted, Anthony Cook solicited for a motion and second to finalize the 2012 Series MDWG Build 2 model set. Scott Schichtl made a motion to finalize the 2012 Series MDWG Build 2 powerflow models base on the Pass 4 posting. Nathan McNeil seconded the motion. Joe Fultz asked the members to cast their votes. All members submitted their votes by July 26, 2012. Anthony sent an email to the group with the vote tally. There were ten votes to approve, and one to abstain. The models were approved to be finalized and SPP staff renamed the models and posted them as final.

Respectfully submitted,

Anthony Cook
SPP Staff Secretary

**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP
August 25, 2012
Email Vote**

• M I N U T E S •

The 2012 Series MDWG Dynamic Cases were posted for comments on August 17, 2012. Outstanding concerns were submitted past the timeframe for comments to be posted. Joe Fultz solicited for a motion and second to finalize the 2012 Series MDWG Dynamic Cases. Scott Rainbolt made a motion to finalize the 2012 Series MDWG Dynamic Cases based on cases posting on August 21, 2012. Jason Shook seconded the motion on August 22, 2012. Joe Fultz asked the members to cast their votes. All members submitted their votes by August 25, 2012. Joe Fultz sent an email to the group with the vote tally. There were 4 votes to approve, 4 votes against, and 4 to abstain. The models were not approved to be finalized and SPP staff has made the 2012 Dynamic Case Finalization an agenda item on an upcoming MDWG Conference Call for August 29, 2012.

Respectfully submitted,

Anthony Cook
SPP Staff Secretary

**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP**

August 29, 2012

Conference Call

2:00 P.M. – 3:00 P.M.

• M I N U T E S •

Agenda Item 1 - Administrative

The meeting was called to order at 2:04 p.m. The following Model Development Working Group (MDWG) members were in attendance:

Joe Fultz, Chair – Grand River Dam Authority (GRDA)
John Boshears – City Utilities of Springfield (CUS)
Mike Clifton – Oklahoma Gas & Electric (OGE)
Nathan McNeil – Midwest Energy (MIDW)
Reené Miranda – Southwestern Public Service (SPS)
Scott Rainbolt – American Electric Power (AEP)
Jason Shook – GDS Associates (GDS)
Brian Wilson – Kansas City Power & Light (KCPL)

SPP Staff in attendance included Anthony Cook (Secretary), Scott Jordan, Brandon Hentschel, and James Bailey.

The following guests were also in attendance:

Derek Brown (Proxy for Mo Awad) – Westar Energy (WR)
Jason Hofer (Proxy for Dustin Betz) - Public Power District (NPPD)
Tim Smith – Western Farmers Electric Cooperative (WFEC)
Aravind Chellappa – Southwestern Public Service (SPS)
Dave Macey – City of Independence, Missouri (INDN)
Daniel Benedict – City of Independence, Missouri (INDN)
Deepthi Kasinadhuni – Grand River Dam Authority (GRDA)
Liam Stringham – Sunflower Electric Power Corporation (SEPC)
Alex Mucha – Oklahoma Municipal Power Authority (OMPA)
Mark Reinart – Golden Spread Electric Cooperative (GSEC)

Meeting Agenda

The agenda was reviewed by the group. Anthony made the addition of 2012 Dynamic Model Finalization and CBA Model Comments as items 3 and 4 as requested by Joe Fultz and Reené Miranda. Scott Rainbolt motioned to approve the agenda with the edits; Jason Shook seconded the motion. The motion passed unopposed.

(Attachment 1 - MDWG Meeting Agenda 20120829.doc)

Meeting Minutes

The May 8, 2012 meeting minutes were open for review. Jason Shook motioned to approve the previous meeting minutes; Mike Clifton seconded the motion. The motion passed unopposed. **(Attachment 2 - MDWG Minutes 20120508.doc)**

Agenda Item 2 – 2013 Series:

a. Short Circuit Model Selection:

Anthony Cook began the discussion by stating that per the group's May decision, a short circuit model is not required for every powerflow model, however, the SPCWG needed to be consulted before a selection could be made. Anthony reported that the SPCWG secretary advised him that no specific short circuit models are required since dynamic models are used in their processes. Anthony also added that the SERC decided to build 2013 and 2019 summer models for their short circuit effort. John Boshears gave an explanation about short circuit studies and stated that aside from wanting to study the effect a project might have in the future, short circuit studies should be addressed for near term. The group agreed to complement the models that SERC builds. Nathan McNeil motioned to approve the short circuit model set as 2013 and 2019 summer; John Boshears seconded the motion. The motion passed unopposed. **(Attachment 3 - 2013 Series Model Selection.xlsx)**

Agenda Item 3 – 2012 Dynamic Models Finalization:

Scott Jordan gave an update on the status of the Dynamic Model set. He stated that he is working with some of the member companies to resolve current concerns. Scott also proposed a rebuild once all of the concerns are corrected. Jason Hofer offered to aid Scott with information needed from the Western Area Power Administration (WAPA). Joe Fultz asked if the issues were mainly wind farm topology. Scott answered the issues are both wind farm generic models and some dynamic data. Jason Shook asked why some of the data in the models don't match what was submitted. Scott answered that some assumptions were made in order to get the models to initialize. Scott stated that he is going to update his process to ask members for input for any arising situations and work this into the schedule.

The group decided to give everyone until noon Friday, August 31, 2012, to submit their final comments and have the models corrected and reposted by Tuesday, September 4, 2012.

Agenda Item 4 – CBA Model Comments:

Reené Miranda asked what exactly needs to be checked and what was the model built from. Brandon Hentschel answered that the CBA model was built from the 2018 Summer ITP model. Members need to review the dispatch for their area and keep in mind that a security constrained economic dispatch was used instead of a pure economic dispatch. Reené asked why it wasn't built using the 2012 series MDWG Build 2 model and why a 2018 model and not a 2014 model was used if the integrated market goes into effect 2014? Nathan McNeil stated that the 2018 model was used for representation after the implementation of the market and to make sure projects are captured and to account for possible delays of the market implementation. Reené asked if members would be issued NTCs as a result of the analysis performed on this CBA model. SPP explained that this is just a trial sensitivity analysis and NTCs will not be

issued due to the analysis results. Brandon stated that he would address unanswered questions off the call.

Agenda Item 11 - Closing Administrative Duties:

Next Meetings:

Face-to-Face: Little Rock, November 13, 2012

Upcoming Meetings Topics:

1. TBD

Adjourn Meeting

Reené Miranda motioned to adjourn the meeting, Jason Shook seconded the motion. With no further business to discuss, the MDWG adjourned at 3:14 p.m.

Respectfully submitted,

Anthony Cook
SPP Staff Secretary

**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP
October 2, 2012
Email Vote**

• M I N U T E S •

The 2012 Series MDWG Dynamic Cases Revision 2 were posted for comments on September 14, 2012. Outstanding concerns were submitted past the timeframe for comments to be posted. Anthony Cook solicited for a motion and second to finalize the 2012 Series MDWG Dynamic Cases Revision 2 on September 21, 2012. Mo Awad made a motion on September 24, 2012 to finalize the 2012 Series MDWG Dynamic Cases Revision based on the September 14, 2012 posting. Jason Shook seconded the motion on September 26, 2012. Anthony Cook asked the members to cast their votes by October 1, 2012. All members submitted their votes by October 2, 2012. Anthony sent an email to the group with the vote tally. There were 11 votes to approve and 1 to abstain. The models were approved to be finalized and SPP staff renamed the models and posted them as final.

Respectfully submitted,

Anthony Cook
SPP Staff Secretary

	Action Item	Responsible Parties	Date Originated	Date Updated	Progress	Notes
42	Review the new MOD standards approved by FERC and how they will apply to the MDWG and SPP planning modeling	SPP Staff	3/1/2010		In Progress	
50	Reformat the MDWG procedure manual and add hyperlinks for referenced documents	Anthony Cook	8/6/2010	10/16/2012	In Progress	
56	Discuss with Entergy about SPP members modeling load with zero impedance lines	SPP Staff	8/6/2010	10/31/2012	In Progress	Entergy prefer this method to reduce the amount of coordination and errors when creating the MMWG models. (5/8)Push to get rid of the ZILs. (5/24)Entergy is onboard to coordinate loads to remove ZILs. (10/31) Sent emails to members with regional ties as first step.
57	Determine the standards for stability load data	Scott Jordan	8/6/2010	5/8/2012	In Progress	Scott to give update of TSTF discussion at May 8, 2012 meeting
71	Staff to review previous meeting minutes for resolution of any language discrepancies in the SPP Tariff about Uniform Generation Modeling	Kelsey Allen	11/8/2011		In Progress	
72	Staff to provide background information on reasons for choosing 20 MVA for machines and aggregate plant capacity for Uniform Generation Modeling when modeling auxiliary load	Staff	11/8/2011	5/8/2012	In Progress	This has been pushed back to the MITF for justification per the 12/6 meeting.
76	Look for ways to shorten the Dynamic Build.	Scott Jordan	2/8/2012	5/8/2012	In Progress	Internal Build? When could that take effect?
83	Ask TWG to review Attachment AQ for special circumstances.	SPP Staff	5/8/2012		In Progress	Adding load to new substation due to load growth because existing substation is at capacity.
85	RTO/RE staff and MDWG to address data reporting requirements and enforceability for independently owned generation and transmission assets.	MDWG/Staff	8/29/2012	11/13/2013	In Progress	TWG action item: Who is responsible, When data exchange is required, How to enforce data exchange.

ID	Task Name	Project Task Phase	Duration	Start	Finish	Resource Names	Feb 3, '13					Feb 10, '13					Feb 17, '13										
							W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T
1	MDWG DYNAMICS MODELS (Currently Approved for 2013)		109 days	Thu 1/31/13	Tue 7/2/13																						
2	2013 Model Updates		109 days	Thu 1/31/13	Tue 7/2/13																						
3	Initial Data Update		35 days	Thu 1/31/13	Wed 3/20/13																						
4	Build and Post DYRE Files, Wind Farm Data, and Docureport		10 days	Thu 1/31/13	Wed 2/13/13	SPP																					
5	Members Submit Data Updates		20 days	Thu 2/14/13	Wed 3/13/13	Members																					
6	Member Data Due		0 days	Wed 3/13/13	Wed 3/13/13	Members																					
7	Deliver Model Corrections to DC		5 days	Thu 3/14/13	Wed 3/20/13	SPP																					
8	DC builds initial models and submits issues		20 days	Thu 3/21/13	Wed 4/17/13	Powertech																					
9	Final Data Update		23 days	Thu 4/18/13	Mon 5/20/13																						
10	Prepare and Post DC Issues		2 days	Thu 4/18/13	Fri 4/19/13	SPP																					
11	Members Submit Data Updates		15 days	Mon 4/22/13	Fri 5/10/13	Members																					
12	Member Data Due		0 days	Fri 5/10/13	Fri 5/10/13	Members																					
13	Model Corrections		5 days	Mon 5/13/13	Fri 5/17/13	SPP																					
14	Deliver Model Corrections to DC		1 day	Mon 5/20/13	Mon 5/20/13	SPP																					
15	DC builds and posts final models		10 days	Tue 5/21/13	Mon 6/3/13	Powertech																					
16	Build Final Models		10 days	Tue 6/4/13	Mon 6/17/13	SPP																					
17	Post Final Models		0 days	Tue 6/18/13	Tue 6/18/13	SPP																					
18	Member Review		10 days	Wed 6/19/13	Tue 7/2/13	Members																					
19																											
20																											
21	MDWG DYNAMICS MODELS (Modified)		109 days	Thu 1/31/13	Tue 7/2/13																						
22	2013 Model Updates		109 days	Thu 1/31/13	Tue 7/2/13																						
23	Initial Data Update		30 days	Thu 1/31/13	Wed 3/13/13																						
24	Build and Post DYRE Files, Wind Farm Data, and Docureport		10 days	Thu 1/31/13	Wed 2/13/13	SPP																					
25	Members Submit Data Updates		15 days	Thu 2/14/13	Wed 3/6/13	Members																					
26	Member Data Due		0 days	Wed 3/6/13	Wed 3/6/13	Members																					
27	Deliver Model Corrections to DC		5 days	Thu 3/7/13	Wed 3/13/13	SPP																					
28	DC builds initial models and submits issues		20 days	Thu 3/14/13	Wed 4/10/13	Powertech																					
29	Final Data Update		18 days	Thu 4/11/13	Mon 5/6/13																						
30	Prepare and Post DC Issues		2 days	Thu 4/11/13	Fri 4/12/13	SPP																					
31	Members Submit Data Updates		10 days	Mon 4/15/13	Fri 4/26/13	Members																					
32	Member Data Due		0 days	Fri 4/26/13	Fri 4/26/13	Members																					
33	Model Corrections		5 days	Mon 4/29/13	Fri 5/3/13	SPP																					
34	Deliver Model Corrections to DC		1 day	Mon 5/6/13	Mon 5/6/13	SPP																					
35	DC builds and posts final models		10 days	Tue 5/7/13	Mon 5/20/13	Powertech																					
36	Build Final Models		10 days	Tue 5/21/13	Mon 6/3/13	SPP																					
37	Post Final Models		0 days	Tue 6/4/13	Tue 6/4/13	SPP																					
38	Member Review		10 days	Wed 6/5/13	Tue 6/18/13	Members																					
39	Apply Corrections Due to Member Feedback		10 days	Wed 6/19/13	Tue 7/2/13	Scott Jordan																					

Project: 2013 MDWG Dynamics Model
Date: Thu 9/6/12

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			