

**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP
August 2, 2011
Embassy Suites – Downtown/Old Market
Omaha, Nebraska
8:00 A.M. – 5:00 P.M.**

• M I N U T E S •

Agenda Item 1 - Administrative

The meeting was called to order at 8:08 a.m. The following Model Development Working Group (MDWG) members were in attendance:

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

SPP Staff in attendance included Anthony Cook (Secretary), Kelsey Allen, Doug Bowman, Scott Jordan, Mitch Jackson, and Levi Lyons.

The following guests were also in attendance:

Julie Denton – City of Independence, Missouri (INDN)
Lloyd Kolb – Golden Spread Electric Cooperative, Inc. (GSEC)
John Shipman – Omaha Public Power District (OPPD)
Alan Burbach – Lincoln Electric System (LES)
Mike Hamlin – ITC Great Plains
Robby Michiels – Cleco Power (CLECO)
Matt Bordelon – Cleco Power (CLECO)
Deepthi Kasinadhuni – Grand River Dam Authority (GRDA)
Liam Stringham – Sunflower Electric Power Corporation (SEPC)

Meeting Agenda

The agenda was reviewed by the group. Scott Schichtl motioned to approve the agenda, Nate Morris seconded the motion. The motion passed unopposed (**Attachment 1 - MDWG Meeting Agenda 20110802.doc**).

Meeting Minutes

The January 18th meeting minutes were open for review. Mo Awad motioned to approve the previous meeting minutes as written; Scott Schichtl seconded the motion. The motion passed unopposed (**Attachment 2 - MDWG Minutes 20110118.doc**).

Agenda Item 2 – Review of Past Action Items

Kelsey Allen reviewed the recently completed and in progress action items. Anthony Cook is working on completing a draft of the Compliance and Participation Template to complete item #2. Staff needs to discuss in further details item # 56 with Entergy.

Agenda Item 3 – 2011 Short Circuit Models Discussion:

Anthony Cook has recently taken over the development of the Short Circuit model set. In reviewing the work that has been done, he found that the 2011 MDWG Build 2 Final model set had been posted as the initial Short Circuit model set. He has been working to get the current feedback given by modeling contacts from review of the set posted as the initial Short Circuit models incorporated into current development. He has found that there is still zero sequence data missing and went on to specifically mention work to be done on regional tie line to SERC. An updated set with recent submissions will be posted for review within the next few days.

Agenda Item 4 – 2012 MDWG Model Set:

The MDWG began reviewing the proposed model selection for the 2012 Series MDWG powerflow, dynamics, and short circuit sets. Anthony Cook brought the groups attention to the note at the bottom of the document which states that the MMWG has yet to finalize their model set but upon polling the members, it was expected that the model selection would simply translate all seasons by one year, just as the proposed MDWG sets have.

Reené Miranda expressed concern about the NERC proposed redefining of Year One and the impacts of that redefinition on our current selection. After intermittent discussion on this topic, it was noted that the MDWG would need to revisit impacts once the new language in TPL-001 of Project 2006-02 is approved.

Nate Morris asked the group to re-assess the need for all 19 seasons of the proposed set. Reené Miranda and Mo Awad defended the need for the current year seasons mentioning their operational planning groups utilize those seasons. Kelsey Allen mentioned that the horizon year winter peak model was developed for the more northern companies that have winter peaking systems. After more discussion it was decided that all 19 seasons were needed.

Lloyd Kolb with Golden Spread asked why SPP and the MDWG don't develop models that cover each year to better support the ITP process. Kelsey Allen explained that SPP feels the timing analysis done to support the gaps in seasons is accurate enough that the integrity of the study is not sacrificed and performing studies on a reduced set provides efficiency in the process.

Dustin Betz motioned to approve the 2012 MDWG Model Set for powerflow, dynamics, and short circuit as proposed. Jason Shook expressed concern regarding the possibility of the MMWG not approving their model set as expected. The motion was amended to include “pending finalization of the MMWG model set.” Mo Awad seconded the motion. The motion passed unopposed.

Agenda Item 5 – 2012 Series Schedule:

The group reviewed the proposed 2012 Series Schedule. Kelsey Allen stated that staff is currently going through testing of MOD v7.1.0.6 and PSS/E v32.1 on the MOD testing server and expects to have testing complete and the updates running on production in time to start the 2012 series model build. Julie Denton asked if staff had any plans to coordinate with operations on data submission. Kelsey said that operations has been very proactive about reviewing and collecting model data from submissions made to planning but right now there is not a good feedback loop. He also mentioned that modeling staff has been looking to integrate with the new project tracking database to be able to capture updates from that system. The major issue right now is these three systems are completely different data sets and it will take some time to map data and develop procedures for all groups to follow before we can implement more automation and cohesiveness.

The group asked staff to add Short Circuit model build and MOD lockdowns to the schedule. Staff took those additions as an action item.

Action Item – Staff to add the Short Circuit model build and MOD lockdowns to the 2012 Series Schedule.

Staff asked the group if they wanted to consider letting the members vote on calling the models final instead of just finishing per the number of passes in the schedule. Nate Morris advised against this as we may never finish the model build. It was suggested that staff have the MDWG vote to approve the final models, staff agreed. It was also suggested that the MDWG have a mechanism for members to submit post-processing idevs to TrueShare once the models are finalized. Staff was amenable to this but said that they would not be responsible for applying idevs and posting new models. It was mentioned that for compliance purposes, we need a group to call the models final.

John Boshears asked about the solution issues experienced with the 2011 series cases. Staff attributed much of the issues to the many 3-winding transformers that were added during development of that set for short circuit purposes, coupled with the solution methodology of PSS/E v30.3. Dustin Betz mentioned that much of the reason the models were solving in nearly 20 iterations was due to interaction of phase shifting transformers in New England. He said in the past SPP has locked many of these out of courtesy to the members. Staff took note of this for future builds.

Scott Jordan proposed adding a data-bank update for dynamics models in June, much like the December modeling meeting for powerflow. He stressed the need to mitigate major updates needed after the models are deemed final. The group settled on a conference call to discuss issues prior to finalizing the dynamics models.

Action Item – Staff to make the suggested updates to the 2012 series schedule and send it out to the group for an e-mail vote.

Agenda Item 6 – MOD Modeling Matrix:

The MOD Type/Status Matrix was brought before the group for review. Kelsey Allen explained the proposed changes. Attention was brought to the ATP status of projects coming out of the ITP process and that the inclusion of those projects in TS and GI models was still under stakeholder discussion. It was asked why the ATP projects were intended to not be included in MDWG models. Kelsey Allen explained that he had been asked that question internally but didn't have an answer. The group decided to update the matrix to leave the modeling of ATP projects in all model sets as still under discussion. The group agreed to revisit ATP project for the MOD Matrix at a later meeting.

Action Item – Staff to add ATP discussion to the December meeting agenda.

Nathan McNeil motioned to approve the MOD Matrix as updated. Reené Miranda questioned the Type/Status of Requested/Alternative. Kelsey Allen explained that the Type/Status was used as a repository for projects that will not be used in any model, but will not be deleted from the database for the possibility of future use. Brian Wilson seconded the motion. The motion passed unopposed.

Agenda Item 7 – MOD 7.1 Updates:

Kelsey Allen briefed the group on the improvements made in the upcoming version of MOD currently undergoing testing on SPP's testing environment server. This included the ability to batch import projects and profiles, the improvement of error logs, and application preferences. He explained that the application preferences, which included the option to bypass approval steps and the option to e-mail groups instead of the submitting user during the review stages, could only be configured for the whole system and not individual companies. This would need to be a change voted on by the MDWG. He also briefly covered some new features of PSS/E rev32 that could potentially impact the previous need for certain data requirements of the Model Development Procedure Manual.

Action Item – Staff to post the powerpoint presentation on MOD 7.1.0.6 features to SPP File Sharing (TrueShare).

Agenda Item 8 – MDWG Procedure Manuals:

Kelsey Allen reviewed the updates staff has been making to the MODWeb and Model Development procedure manuals. He asked the group to focus more on the major changes and the goals staff is trying to accomplish with the updates rather than the multitude of minor changes. The Model Development manual is being updated and many of the old requirements revisited. Kelsey mentioned that SPP staff is currently working on a data reporting procedure for all of Engineering Planning that will cover data requirements of NERC Standards, SPP Tariff, and SPP Criteria and hope to weave a lot of that information into the manual. The group briefly discussed some of the

requirements of the current manual that were implemented due to old methods and software limitations. Staff agreed that all of these should be re-visited and their need re-assessed. The MODWeb manual is being re-written and re-arranged for better clarity and updated for the new software versions. Staff stressed that there is still work to be done but that the group should be ready to begin review of the changes. The group discussed how best to tackle review and approval and suggested staff provide completed updates by section for review in order to begin the process early and not overwhelm the members.

Agenda Item 9 – MITF Updates:

The MITF recently met to discuss the TWG action item to revisit their recommendations for Uniform Generation Modeling in order to discuss the need to model generator gross or net P_{MAX} for better accuracy of stability studies. Kelsey Allen informed the MDWG of the discussion on the MITF call and asked for input from the MDWG. Scott Rainbolt stated AEP's response that auxiliary load should only be modeled with machines that are being studied. Nathan McNeil and Dustin Betz both suggested that if it is decided that gross P_{MAX} and auxiliary load should be modeled, that a MW cutoff is implemented so that small municipal units do not fall under the requirement.

Agenda Item 10 – Congestion Hedging Modeling Impacts on MDWG:

Kelsey Allen explained the Congestion Hedging group would be needing data inputs supplied by the MDWG. Transmission Congestion Rights (TCR) models would be developed by starting with an EMS model and building it out 1 year using MOD projects. Kelsey stressed the importance of accurate in-service dates for those projects expected to be energized within a year and that inaccuracy could have financial impacts. The group was very uneasy with this, arguing that project construction timelines slide all the time and it is very tough to get accurate in-service dates a year out. After some discussion, the group asked that Mak Nagle, Manager of Congestion Hedging, be brought on the call for more clarification. Mak was brought on the call after a break for lunch and explained the process in more detail. Congestion hedging gives market participants the ability to hedge against market congestion. OASIS customers with firm service for a given month will be given Annual Revenue Rights (ARR). Each ARR holder will decide whether they want TCR's for the amount of their ARR, more TCR's, or to sell the TCR's. The process will require 7 models annually: June, July, August, September, Fall, Winter, and Spring. The MDWG is needed to help bridge the gap between EMS and planning to build those 7 models. Annual auctions will be held in April of each year. Mak went on to stress the importance of accurate data and the financial impacts of inaccuracy. The group asked if there would be fines imposed on the transmission owners. Mak stressed that there are no fines, but that inaccurate modeling of outage data or transmission can cause revenue inadequacy and have financial impacts. In order to mitigate these uncertainties, the available system capacity will be de-rated during the annual auctions for rights sold on periods closer and closer to 1 year. The group asked staff to provide more information and documentation of the congestion hedging process.

Action Item – Staff to provide modeling contacts with documentation on the congestion hedging process.

Agenda Item 11 – NERC Model Validation Task Force (MVTF) Discussion:

Scott Jordan has been representing SPP on the NERC Model Validation Task Force and informed the group of their current activities and findings. NERC studied the frequency response of each interconnection, most likely in response to the Florida blackout. The Eastern Interconnect showed a response 3-4 times better than the actual system event. The MVTF is looking at revisiting dynamic data of generators across the interconnection with each generator owner reviewing and providing updates via test reports. The MVTF also looked at improving load modeling, adding a better distribution of different types of load and possibly adding 2-winding transformers. Scott went on to say that the effort staff is currently undertaking to map planning data to EMS data will help us better re-create system events.

Agenda Item 12 – Other:

TPL-004

The group asked staff if studies were being done in accordance with TPL-004 item D14 of Table 1, Impact of severe power swings or oscillation from Disturbances in another Regional Reliability Organization. Staff was unsure and the group was unclear about the specifics of this requirement. After discussion, staff was asked to determine clarification of a 'severe' event and 'another RRO.'

Action Item – Staff to determine clarification of TPL-004 item D14 of Table 1.

Scott Jordan also mentioned that he is currently looking at other tools to perform different kinds of stability studies.

Agenda Item 13 - Closing Administrative Duties:

Next Meetings:

Conference Call: As needed prior to model update meeting

Model Update Meeting: Little Rock, December 6-8 (unless otherwise noted in approved MDWG schedule).

Upcoming Meetings Topics:

1. MODWeb Procedure Manual
2. MDWG Model Development Procedure Manual
3. Model Updates
4. ATP Discussion Update

Summary of New Action Items

1. ***Staff to add the Short Circuit model build and MOD lockdowns to the 2012 Series Schedule***
2. ***Staff to make the suggested updates to the 2012 series schedule and send it out to the group for an e-mail vote***
3. ***Staff to add ATP discussion to the December meeting agenda***

4. **Staff to post the powerpoint presentation on MOD 7.1.0.6 features to SPP File Sharing (TrueShare)**
5. **Staff to provide modeling contacts with documentation on the congestion hedging process**
6. **Staff to determine clarification of TPL-004 item D14 of Table 1**
(Attachment 3 - SPP MDWG Action Items 20110802.xls)

Adjourn Meeting

Mo Awad motioned to adjourn the meeting, Scott Schichtl seconded the motion.
With no further business to discuss, the MDWG adjourned at 3:11 p.m.

Respectfully submitted,
Kelsey Allen
SPP Staff

Southwest Power Pool, Inc.

MODEL DEVELOPMENT WORKING GROUP MEETING

August 2, 2011

Embassy Suites Omaha/Omaha, NE

• ATTENDANCE LIST •

Name	Company
JASON SHOOK	GDS/E TEC
Dustin Betz	NPPD
Julie Denton	INDN
Lloyd Kolb	GSEC
Jon Shipman	OPPD
Alan Burbach	LES
Mike Hamlin	JTC
Nathan McNeil	MIOW
Robby Michiels	Cleco
Matt Bordelon	CLECO
Scott Rainbolt	AEP
Mo Awad	Westar
NATE MORRIS	EDE
Reene Miranda	SPS
Scott Schichtl	AECU
Brian Wilson	KCP+L

**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP
August 2, 2011
Embassy Suites – Downtown/Old Market
Omaha, Nebraska
8:00 A.M. – 5:00 P.M.**

• D R A F T A G E N D A •

1. AdministrativeScott Rainbolt
 - a. Call to order
 - b. Proxies
 - c. Approve agenda
 - d. Approve minutes of previous meetings
 - i. January 18, 2011
2. Review of Past Action Items Kelsey Allen
3. 2011 Short Circuit Models Discussion Doug Bowman
4. 2012 MDWG Model Set..... All
 - a. Power Flow
 - b. Dynamic
 - c. Short Circuit
5. 2012 Series Schedule All
 - a. Power Flow
 - b. Dynamic
 - c. Short Circuit
6. MOD Modeling Matrix Kelsey Allen
7. MOD 7.1 Updates Kelsey Allen
8. MDWG Procedure Manuals SPP Staff
 - a. Power Flow/Stability
 - b. MODWeb
 - c. Short Circuit
9. MITF Updates Kelsey Allen
10. Congestion Hedging Modeling Impacts on MDWG Kelsey Allen
11. NERC Model Validation Task Force (MVTf) Discussion Scott Jordan
12. Other All
13. Closing Administrative Duties.....Scott Rainbolt
 - a. Next meeting place and date
 - b. Next meeting topics
 - c. Review of Action Items
 - d. Adjourn meeting



**Southwest Power Pool
MODEL DEVELOPMENT WORKING GROUP**

January 18, 2011

Conference Call

2:00 P.M. – 4:00 P.M.

• M I N U T E S •

Agenda Item 1 - Administrative

The meeting was called to order at 2:05 p.m. The following Model Development Working Group (MDWG) members were in attendance:

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

SPP Staff in attendance included Anthony Cook (Secretary), Kelsey Allen, and Doug Bowman.

The following guests were also in attendance:

Julie Denton – City of Independence, Missouri (INDN)
Liam Stringham – Sunflower Electric Power Corporation (SEPC)
Deepthi Kasinadhuni – Grand River Dam Authority (GRDA)
Racheal Ren – Kansas City Power & Light (KCPL)
John Shipman – Omaha Public Power District (OPPD)
Ed Horgan – Southwestern Public Service (SPS)
Syed Ahmad – Federal Energy Regulatory Commission (FERC)

Meeting Agenda

The agenda was reviewed by the group. Anthony Cook suggested a change to item 7. Joe Fultz motioned to approve the agenda with change; Mo Awad seconded the motion. The motion passed unopposed (**Attachment 1 - MDWG Agenda 20110118.doc**).

Meeting Minutes

Reené Miranda wanted to discuss the “Normally Open Lines” paragraph in section 3 of the December 6, 2010 minutes. He asked to add something to the data submittal workbook that would contain line maintenance information such as start and stop dates. Reené will send data for maintenance lines and SPP will determine the “NO” lines. Joe Fultz motioned to approve the December 6, 2010 meeting minutes as is; Brian Wilson seconded the motion. The motion passed unopposed (**Attachment 2 - MDWG Minutes 20101206.doc**).

Agenda Item 2 – Review of Past Action Items

The action items were quickly reviewed. Items #1, #60, and #62 are to be discussed as agenda topics during the meeting.

Agenda Item 3 – Summer Shoulder:

Definition and Season Guideline Discussion

Many of the members stated that they are comfortable with the 85% of summer peak load value for the summer shoulder case. Dustin Betz expressed that 70% is consistent for the NPPD area. SPP is proposing changing the definition to the range of 70% - 85% of summer peak load for the summer shoulder model. Some concerns arose whether the off peak models would end up having the same load values as a shoulder model. It was stated that load values, for all seasonal models, would be submitted by the SPP members as normal. It was requested to add a statement into the MDWG Powerflow Procedure Manual to state that load levels for all models are based on a company specific methodology. Reené Miranda motioned to change the load value of the summer shoulder model from 85% to a range of 70%-85% of summer peak load. Mike Clifton seconded the motion. The motion passed unopposed.

Agenda Item 4 – Planning Reserve Recommendation for TWG:

Reené Miranda discussed the reserve sharing in the footprint and the agreement which is based on percentage of tie line capacity by a company. Kelsey Allen stated that in horizon year models, some companies don't have generation to hold a percentage of reserve. Julie Denton asked if this issue would be taken care of when planning for N-1. Kelsey answered that the concern is with system intact. John Boshears questioned if transfers not approved by SPP can go into the models. Kelsey answered that those unapproved transfers can go into the MDWG model set but generation without an IA and non-firm transactions are removed from the STEP/ITP models.

After lengthy discussion, Nathan McNeil stated that the TWG should make this decision and that it is the duty of the MDWG to implement the process. As decided in the previous meeting, the group provided the following options to take to the TWG.

1. Add non-firm transactions
2. Max out generation
3. Interrupt load

Scott Rainbolt will get with Anthony and Kelsey after the call to discuss presenting this to the TWG.

Agenda Item 5 – Modeling Data Ownership:

Recently, SPP has been working with the members to increase the granularity of the modeling data. Kelsey Allen suggested the members make sure ownership data for buses, loads, generators, and branches are in the models to help continue this effort. Each TO will need to review their area and SPP can make a mass update. Nathan McNeil stated there are generators within the MIDW footprint that MIDW doesn't own and expressed concern about being assigned MIDW ownership to those units. It was decided to leave the ownership for non-SPP member units as default or to assign a generic number to those units. The members will review the data and provide exceptions if needed. Kelsey will assign ownership to data and provide to the members for review.

Agenda Item 6 – Short Circuit Models/Data Update:

Doug Bowman discussed the sequence data being due March 1, 2011. He provided data that is missing in MOD to the members to help speed the process. Nate Morris asked about lines owned by non-SPP members. Doug stated that staff will try and work with those entities if the members will provide contact information.

Agenda Item 7 – Other:

Varflow for Line Reactor Additions

Reené Miranda discussed not having reactors in the models and the voltage problems that will occur in the stability models. He requested that this be addressed before the Build 1 models are finalized. SPP will run an AC contingency scan on the Build 1 Pass 2 Final Models to identify voltage issues to see where compensation will be needed. Staff will discuss the issue and provide feedback to the members.

Agenda Item 8 - Closing Administrative Duties:

Next Meetings:

Conference Call: March (TBD)

Face to Face: August, Omaha

Upcoming Meetings Topics:

1. Short Circuit Model Update
2. Additional TBD

Summary of New Action Items

No additional action items resulted from this meeting.

(Attachment 3 - SPP MDWG Action Items 20110118.xls)



Adjourn Meeting

Scott Schichtl motioned to adjourn the meeting; everyone seconded the motion.

With no further business to discuss, the MDWG meeting was adjourned at 4:01 p.m.

Respectfully submitted,
Anthony Cook
SPP Staff Secretary

	Action Item	Responsible Parties	Date Originated	Progress	Notes
2	SPP Staff will add the NERC TPL (Transmission Planning) and MOD (Modeling, Data, and Analysis) Standards that are applicable to each required item in the SPP Compliance Template Form	Anthony Cook	8/7/2009	In Progress	Staff still needs to update the template with Dynamics.
14	Staff will update the Web Based Power Flow Model Development Procedure Manual after MOD version 7 has been released and installed on the production server	SPP Staff	11/17/2009	In Progress	
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	In Progress	
56	Discuss with Entergy about SPP members modeling load with zero impedance lines	SPP Staff	8/6/2010	In Progress	Anthony Cook to follow up
57	Determine the standards for stability load data	Scott Jordan	8/6/2010	In Progress	
65	Staff to add the Short Circuit model build and MOD lockdowns to the 2012 Series Schedule	SPP Staff	8/2/2011	Complete	
66	Staff to make the suggested updates to the 2012 series schedule and send it out to the group for an e-mail vote	SPP Staff	8/2/2011	Complete	
67	Staff to add ATP discussion to the December meeting agenda	SPP Staff	8/2/2011	In Progress	
68	Staff to post the powerpoint presentation on MOD 7.1.0.6 features to SPP File Sharing (TrueShare)	SPP Staff	8/2/2011	Complete	
69	Staff to provide modeling contacts with documentation on the congestion hedging process	SPP Staff	8/2/2011	In Progress	
70	Staff to determine clarification of TPL-004 item D14 of Table 1	SPP Staff	8/2/2011	In Progress	