

**Approved MEETING MINUTES
MIDWEST RELIABILITY ORGANIZATION
Model Building Subcommittee**

Holiday Inn Select, Bloomington, MN
August 26th, 2009 – 9:00 AM – 4:00 PM

1. Call to Order

The meeting was called to order at 9:00 am.

2. Determination of Quorum

The following members and guests were in attendance:

Alan Burbach, LES (Chair)
Wayne Haidle, BEPC (Vice-Chair)
Adam Flink, MRO (Secretary)
Laura Elsenpeter, MRO (Alt. Secretary)
Gerry Lane, MH
Kerry Marinan, ATC
Kristian Samoila, SPC
Srinivas Vemuri, XEL
Jason Espeseth, XEL (Guest)
Luke Erichsen, MEC
Wayne Roelofs, GRE
Larry Brusseau, MAPP COR (Guest)
Loren Mayer, Midwest ISO (Guest)
Anita Woodroffe, CBPC (Guest, phone)

3. Standards of Conduct and Anti-Trust Guidelines

Chairman Burbach reviewed the Standards of Conduct and Anti-Trust Guidelines.

4. Consent Agenda

a. *Approve Meeting Minutes from May 21st, 2009*

Upon motion by Gerry Lane and seconded by Kerry Marinan, the minutes were approved, as amended.

5. Chairman's Report

Based on the decisions made by MRO and SPP, along with staff from LES, NPPD and OPPD, the Nebraska companies (LES, NPPD, and OPPD) will be submitting data through SPP's model building process and will not be submitting data to the MISO MOD. The Nebraska area model data will be part of the external data connected to the MRO models unless the MBS decides to extract the data from the SPP models and include it in the MRO models. The Nebraska data as part of the SPP models and not included in the MRO models creates many new and challenging coordination issues at the ERAG level.

Chairman Burbach reported that the Nebraska Data Reps recognized these coordination issues, and are willing to explore the approach of extracting their data from the SPP models and inserted this data into the MRO models. That would allow them to submit data to a

single Models On Demand database yet have reasonably accurate representations in each regional model series.

6. 2009 Series Development

a. *Wrap Up*

1) *Power flow models*

Power flow models have been posted (pre-dynamics updates). Power flow models with dynamics updates applied will be posted when available.

2) *Dynamic models*

MRO staff will check dynamics data when it is provided by MISO staff and post it with the final models. Any power flow dynamics updates will be applied and final power flow models will be posted.

i. *Generators without dynamics data*

Action item: MRO staff will check posted dynamics data for missing units.

3) *Model Documentation*

Export levels section of documentation will be left out for the 2009 series. Add Wind generation graph to 2009 series documentation. Export levels should be checked as a screening tool, but do not need to be included in the documentation.

Comments on area appraisals:

Tables vs. text

Include details such as bus numbers in descriptions

Action item: Srinivas Vemuri and Wayne Haidle to create a sample area appraisal to be reviewed by the MBS at its next meeting.

Action item: Dynamics documentation will be updated and posted (separate document from power flow documentation). Benchmarking could be included in this documentation.

4) *Should the Data Compliance table be posted for member's use on compliance?*

The MBS did not have any objections to continuing to post the compliance table for all data reps to view. MBS members indicated that they use emails as an official compliance record, rather than depending solely on the compliance table.

5) *Report on collection of generator reactive capability data [Attachment 6a5]*

Action item: Wording of the generator capability curve section will be reviewed based on Wayne Roelofs' data submission.

Action item: Adam Flink will assemble a master *.gcp file from the data submitted. This file will be checked against a model and posted with the power flow data.

6) *Report on wind data collection [Attachment 6a6]*

Wind data collection was completed earlier in the 2009 process.

Action item: Adam Flink to post wind data spreadsheet with model data and add wind graph to the 2009 series power flow documentation.

7. NERC Inquiry About Zero Impedance Lines in 2008 Series

a. *MRO Model Data Inquiry and Review Report [Attachment 7a]*

Adam Flink explained that MRO sent a model data inquiry to some companies to explain their modeling practices and how the zero impedance lines got inserted into the MRO 2008 series, and then into the MMWG 2008 series. MRO staff has prepared a report of these findings. An abridged version of the report was provided to the MBS.

The MBS discussed several approaches to preventing this issue in the future. Iplan and idevs scripts are available to perform some screening of ratings changes.

Action item: The MBS will collect the iplans and python scripts that could be used for screening ratings idevs and will decide at its next meeting which one to require for the 2010 series.

Upon motion by Kerry Marinan, seconded by Wayne Haidle, the MBS voted to adopt the practice from the MMWG manual of using $R = .0001 + X = .0002$ for valid zero-impedance lines, in order to distinguish them from PSSE zero-impedance lines which are likely invalid ($R = .0000 + X = .0001$).

8. 2010 Series Development

a. *MBS approval of PSS/E version.*

1. *MAPPCOR – prefers 2010 model building series be built on PSS/E 30.3.3 utilizing the newest Fortran Compiler for dynamics. PSS/E 30.3.2 uses the old Fortran compiler that is no longer available. PSS/E 30.3.3 has two version that is available for use with both old (Compaq) and the new (Intel) compilers.*

The ERAG MMWG has postponed their decision on whether to use PSSE version 30.3.2 or 32 for the MMWG 2010 series models until their November meeting. The decision will be based on whether or not PTI can finish updating the DC user models to be compatible with PSSE version 32 in time for the next series.

Kerry Marinan will send PTI PSSE version presentations to the MBS.

Action item: The MBS must decide whether to move to version 32 for the 2010 series once the MMWG has reached their decision. If the MMWG decides not to move to version 32, then the MBS must decide if it moves from version 30.3.2 to 30.3.3 in order to take advantage of the new compiler.

b. *Review Scope of Work [Attachment 8b]*

1. *Solution technique, MRO versus MMWG [Attachement 8b1]*

The Scope of Work document was modified to specify a solution from a flat start using a Fixed Slope Decoupled Newton Solution (PSS/E activity FDNS) followed by a Full Newton Raphson Solution (PSS/E activity FNSL).

2. *Status of Nebraska companies in the MRO 2010 Series.*

See item 5.

3. *Development of Dynamics Model*

MRO staff will be building the dynamics models for the 2010 series.

4. *Development of Short Circuit Model*

i. *TPL-01-1 requires a short circuit model*

The impetus behind development of a short circuit model will be a requirement specified in the NERC Reliability Standards. Currently there is no direct requirement to develop a short circuit model; however, the MBS will pick up this discussion at its October meeting after it reviews the existing NERC Reliability Standards.

Action item: Adam Flink will check on whether MRO believes that it should develop a short circuit model.

c. *MOD Base Case Update – schedule, approach, and fixing known errors [Attachment 8c]*

A listing of suspected modeling errors was briefly reviewed, but no action taken. Loren will provide feedback whether the MOD base case will be updated by using Project files or idev files. In the meantime, Data Reps will be contacted and ask to review the suspect modeling mostly focused on owner numbers, Load IDs, and load area numbers.

Action item: Alan Burbach and Adam Flink will contact data reps regarding the inconsistencies shown in the spreadsheet.

d. *Enhancements to Workbook*

1. *Specify slack bus generator, by model, to be incorporated into the DNI idevs.*

Action item: Adam Flink to modify spreadsheets to include a tab for specifying slack bus.

2. *Estimated system losses – a few estimates must be closer to calculated losses.*

a. *Use previous series data for estimates (SUBS,OPT)*

Action item: Alan Burbach and Adam Flink will contact data reps requesting they provide a more accurate estimate of losses based on results from a similar model taken from the prior series. The data rep from the BA will be expected to lead the coordination between the data reps.

3. *Inclusion of individual generators with note identifying remote generation.*

e. *Incorporation of Corn Belt into the WAPA BA.*

1. *Review MRO Numbering Scheme [Attachment 8e1]*

The MBS reviewed the MRO bus number range spreadsheet and made several changes to incorporate CBPC into the WAPA BA. The modified spreadsheet was approved by the MBS upon motion by Wayne Haidle, seconded by Luke Erichsen. CBPC will be owner number 656 with busses numbered from 656000 to 656999 and zone number 1616 and load ID 1(0-9). CBPC will be submitting data for NIMECA (municipal) which will use the same bus number range as CBPC but will have owner number 655, zone number 1617 and load ID 3(0-9).

f. *Review rating definitions per Gerry's comment. [Attachment 8f]*

At minimum, a change to the rating names in the MOD database would entail changes to the base ratings file and all project files with embedded ratings. A coordinated update to the database and these input files (heading names and order) would therefore be required to ensure a smooth transition to the new rating names.

Action item: Loren Mayer will check into changing MOD headers for ratings.

g. *Enhanced use of PSS/E Features*

1. *12 character bus names and continued use of the voltage code in the bus name.*

There was no decision to keep or drop the voltage code used as the last digit in the bus names.

2. *FERC Data Dictionary, English substation names can be applied in MOD*
Loren Mayer explained that full English bus names can be stored in MOD.

3. *Line length data (note that there is a decimal limit of 3 characters)*

The data request for the 2010 Series may highlight the benefits for including line mileage as part of the branch data. Currently many members line mileage is part of the MOD base case.

h. *Review model building process and consider enhancements [Attachment 8h]*

1. *Insert Desired Net Interchange values into Pass 1 models.*

Alan Burbach suggested that the Desired Net Interchange values be inserted in the Pass 1 models, and these models solved with the area control of "Tie lines and loads" enabled so the summary tables will provide a direct comparison between solved area interchange and desired area interchange. The slack buses in the MRO footprint would not be specified in the Pass 1 models to avoid wide swings in the slack bus generation. The slack buses would be specified in the Pass 2 solutions.

9. Other Business

a. *Modeling of Wind Generators*

1. *Modeling Responsibilities of Wind Generator Owners*

2. *Update on web cast held on July 16th*

Gerry Lane: Power flow dispatch affects dynamics... remind data reps to use self-initializing models.

- b. *Approve changes to the power flow manual (document organization changes from Laura Elsenpeter and Gerry Lane plus Wind Manual insertion from Gerry Lane) [Attachment 9b]*

Wind Addendum has been combined into the MBS manual and the MBS agreed that the Addendum does not need to be updated in the future.

Action items:

See item 6a5 regarding generator capability curve write-up.

Laura Elsenpeter will follow up with MRO compliance staff to obtain consensus on her associated additions to the manual and then distribute the latest draft with correct section numbering.

Gerry Lane will provide additional changes based on review of Laura's draft.

Alan Burbach will review the MOD standards and encouraged all MBS members to review these standards and the MRO modeling manual before the next meeting.

- 1. *Data Request Package [Attachment 9b1]*

The Data Request Package was not reviewed at this meeting.

- c. *Identify other changes to the power flow manual*

- d. *Report on PTI's effort to update the MRO DC User written models to PSSE Rev 31 (MH, GRE, WAPA, and MP)*

See item 8a and 10b.

- e. *Comments/Discussion on PTI Meeting (August 27, 2009)*

MISO will be hosting a meeting to collect and organize comments on PSSE issues, to be provided to PTI.

- f. *PAC Liaison?*

Action item: Laura will check on whether the position is specified in the MBS charter.

10. Reports

- a. *MRO Modeling Contractor Report – Loren Mayer*

- 1. *General review of MOD case create and process (reference process flow charts)*

The MBS briefly reviewed the flow chart.

- i. *How many test (Pass) postings are enough (two)?*

- b. *ERAG MMWG – Kerry Marinan*

MMWG will decide on PSSE version to use at fall meeting in November.

DS1 TR1 models posted with some errors. Adam will contact data reps to fix errors. DC models will be given back to regions when completed for testing.

They will require PSS/E versions 31 or 32 plus the new compiler for testing.

11. Next meeting

- a. MBS – October 27th.*
- b. RAC – September 2nd*

12. Adjourn

Upon motion by Gerry Lane and seconded by Wayne Haidle, the meeting was adjourned at 4:00 pm.