

**Final Minutes
ERAG Management Committee Meeting
RFC Offices—Fairlawn, Ohio**

Oct 29, 2007 (1:00 p.m. – 5:00 p.m.) Oct 30, 2007 (8:00 a.m. – noon)

Agenda

1. Introductions and logistics

ERAG MC Members

Jay Caspary (Vice-Chair SPP + proxy for Charles Yeung)
Carter Edge (SERC)
Mike Falvo (NPCC)
Bill Harm (RFC)
Jeff Mitchell (Chair-RFC)
John Odom (FRCC)
Vince Ordax (FRCC)
Paul Roman (NPCC)
Russ Schussler (SERC)
John Seidel (MRO)
Ed Weber (MRO)

Additional Attendees

John Andree (ITC--RFC-NPCC Steering Committee Chair 10/30)
Nelson Burks (RFC-SERC East Steering Committee Chair)
Dennis Chastain (RFC-SPP-SERC West-MRO Steering Committee Chair)
Bob Cummings (NERC 10/30)
Harvey Scribner (SPP-MMWG Chair)

1. ERAG Administrative Issues

A quorum was confirmed with all 12 votes available through attendance, or proxy. Jay Caspary indicated that Mak Nagle may replace Charles Yeung as an SPP representative. **Paul Roman will send the latest list of addresses on eragmc and eragmc-all mailing lists for review and additions. The Steering Committee chair addresses will be on both lists.**

Members with agenda items should try to get information to Jeff Mitchell at least one week in advance of each meeting to foster consensus building and better facilitate the meeting decisions.

2. Approval of August, 2007 Meeting Minutes

The draft minutes issued by Bill Harm were reviewed and approved.

3. MMWG issues:

Harvey Scribner reported on several MMWG issues. Key points on each issue are noted below.

a. Review 2007 Series

Harvey reviewed the schedule for the 2007 series of cases and how things have gone in the effort up to this time. The responses for data from regions so far has been better than it was for the 2006 series of cases. Dynamics cases to be built will be based on 2006 series cases. Issues discussed included:

- Preparation of the schedule for 2008.
- Jay Caspary discussed the Joint Operating Agreement now in place between MISO, SPP, PJM and TVA. There are plans among those entities to conduct a steady state study of year 2018 and conduct an economic analysis of year 2024 conditions.

b. Review draft base case and data release policy

Addressed below under item d.

c. Review 2007 Series power flow and dynamics activities and any case quality issues

- The compatibility issue previously reported between PSS/e versions has been resolved. All participants have confirmed that they are satisfied.
- The issue of providing a translation of the bus numbers from the previous series of cases to the new bus numbers was addressed. This is referred to as a “data dictionary”. Updating a data dictionary is not an established MMWG procedure. Furthermore, FERC or NERC do not have standards to maintain this data dictionary. There is a requirement to maintain a critical electric Information 2007-2008 series schedule.
- Data dictionary as part of FERC-715--This is related to Order 890 and is a transparency requirement. The MMWG has concerns with doing the extra work for data tracking of bus numbers for each series of cases. In the development of MMWG cases, some systems change bus numbers every year and others keep the same bus numbers year to year. Some regions have strongly encouraged keeping the same bus numbers. **The ERAG MC discussed this and recommends that the data dictionary be submitted by all with the MMWG data submittal. This should cross reference the previous year’s cases.**

- For future MMWG model development MMWG will conduct N-1 contingency testing to confirm the base cases do not have contingency overloads.

d. Approve base case and data release policy (power flow and dynamics)

Harvey Scribner reviewed MMWG Procedure Manual revisions suggested by the MMWG members. He highlighted some changes and other points of interest: A). In the MMWG Procedure Manual the addition was made of an N-1 confirmation requirement for each Region. This should be done for all Bulk Electric System facilities rather than just for the 100 kV and above cutoff. B). It was recommended that there be a requirement for a Chair and a Vice-Chair. Presently there is no requirement for an MMWG Vice-Chair. Based on the rotation, SERC is next and is seeking a volunteer. C). New language has been added to provide for a secretary. MMWG members have suggested that the secretary serve a 6 month term. NERC staff will no longer serve in this role. D). Model release procedure—most regions provided the region models for use in assessments as part of the FERC 715 filing. Since these models include the representations for all regions, each submittal really includes everything. The data release process for these models is a concern (i.e. how and to whom does FERC release these? Do the regions only release them to region members?) It's understood that FERC will release the first model to an entity for \$150 and to the second for \$100.

Regarding dynamics data, they are provided in FLECS code to those with PSS/e licenses.

e. Review RFP for power flow coordinator

MMWG will take action to renew the current power flow coordinator or hire a new one. The RFP is presently being drafted. MMWG will review the draft RFP at their November meeting. The 2008 Region budgets need to be examined to determine when funds would be available for this to occur. The technical expertise within the regions to perform the support work for MMWG must be considered while preparing the RFP.

f. Approve the list of 2008 Series base cases to be developed

Harvey Scribner reviewed the plans for the 2008 case series. The cases follow the same pattern as in previous years. There will be 12 steady state and 7 dynamics cases. It was suggested that a Fall 2009 case replace the 2010/11 Winter case in the 2008 series and the ERAG MC agreed.

g. Review budget for 2008 activities

The budget for the 2008 power flow models was reviewed and no changes are needed (budgeted amount is \$109,300). The ERAG MC must have a firm cost estimate for the 2009 models by February because the 2009 Regional budgets will be finalized by April 1, 2008. The Net Energy for Load (NEL) values are needed.

h. Status report on database work with Powertech Labs

This item will be discussed during the next ERAG MC conference call.

i. Generator data collection

This item will be discussed during the next ERAG MC conference call.

j. Discuss any other issues

Power Flow Data Considerations—Several factors should be considered: the need to handle PSLF as well as PSS/e format, Models on Demand (MOD) handling, use of Common Information Model (CIM), development of a method to estimate future annual maintenance charges. MOD compatibility is now done through raw data conversion, but true MOD compatibility would be more advanced and would be automatic.

k. August 4, 2007 Indiana System Disturbance

NERC recently made a request to the MMWG group for data from all Eastern Interconnection regions for system data at the time of the occurrence of this disturbance. The MMWG data contacts are generally planning representatives and needed to contact operations staff to obtain the data. The same would apply to any future requests for operating data. The ERAG MC agreed that a procedure needs to be established to facilitate supplying system data needed for system disturbance analysis work. It was suggested that future requests be made to the Eastern Interconnection regions and to ERAG MC. The regions would forward the request to the operations contacts at the Reliability Coordinators, who are the staff members that have direct access to the information. This was not agreed to by the ERAG MC. **Instead, NERC will send the request to the Reliability Coordinators (RCs) with a copy to the ERAG Management Committee.** That is the most direct way to make the event replication data request, as sending it to the MMWG, Regional Managers or ERAC MC would add a delay because those entities would need to forward the to the RCs anyway.

4. Reports / issues to be resolved from each forum (steering committee chairs), including study procedures and manpower issues:

a. Western (MRO-RFC-SERC west-SPP)

Dennis Chastain, MRO-RFC-SERC west-SPP Steering Committee Chair, reviewed the Working Group's 2007-2008 Winter study report results. He pointed out that east to west transfer limits (RFC/SERC west to MRO/SPP) were generally low with some incremental transfer capabilities even negative. For future assessments the Study Forum will conduct N-1 contingency testing on the ERAG study cases to confirm the base cases do not have contingency overloads that result in negative transfer capability. The target date for issuing the final report to the ERAG MC is November 16, 2007.

The heritage forum studies were conducted without rotation of certain study assignments (i.e., MAIN staff performed linear runs and report compilation), but the forum anticipates a regional rotation of the key study assignments going forward. The Steering Committee also expects a rotation of the Steering Committee / Working Group Chair assignments every two years. The former MAIN TASG manual is being converted to become the MRO-RFC-SERC west-SPP Study Procedure Manual. More work still remains with the conversion. That work will resume once 2007-2008 Winter Study work subsides. The accounting of base case inter-regional interchange has been complicated by the modeling of “market” transactions within multi-regional market footprints (e.g., MISO has BAs in the RFC, SERC, and MRO regions). Therefore, the focus of the MRO-RFC-SERC west-SPP analysis of results for the winter assessment was based on FCITCs, with a noting of base case net regional import/export quantities. The Working Group will continue this practice in the 2008 Summer Assessment.

b. Northeastern (NPCC-RFC)

John Andree, RFC-NPCC Steering Committee Chair, reviewed the Steering Committee’s 2007-2008 Winter study report results. He pointed out that the total transfer capabilities identified in the results generally showed increases and were at high levels, with several having no limit identified at the maximum simulated transfer levels. These limits were indicated as 5000+ MW. Analysis of the study results pointed to changes in generation dispatch at particular generators that were located near limiting facilities. The NPCC to PJM transfer was the only simulated transfer that showed no increase. The limit was at approximately the same level as 2006-2007 Winter. The 2007-2008 Winter Assessment Report is a final draft and it is anticipated it will be sent to the ERAG MC for comments during the first week in November.

Results for both Total Transfer Capability and Incremental Transfer Capability are indicated in the report, with most of the analyses focused on TTCs. The Steering Committee intends to continue with market to market transfers; however, in order to identify possible system limits, it will consider sensitivities to more localized dispatches in some of the market areas. In addition, information on limits from other studies or from real-time operation may be used to supplement the report results to identify critical areas. Confirmation through AC load flow testing of the identified transfer capabilities may not work well because the dispatch changes to simulate transfers are done using unit scaling and not the loss of units.

The Procedure Manual still needs updating.

c. Southeastern (SERC east-RFC)

Nelson Burks, SERC east-RFC Steering Committee Chair, reviewed the Steering Committee’s 2007-2008 Winter study report results. He pointed out that none of the PJM voltage limits identified in past assessments showed up in the 2007-2008 Winter Assessment. The addition of the AP Black Oak SVC has a large impact. No limits were found at the 5000 MW transfer levels for imports into PJM and MISO this winter. This is due in large measure to the imports being modeled across the entire RTOs. The SER Steering Committee agreed to perform a sensitivity

analysis in the 2008 Summer study looking at transfers into PJM West, PJM Classic, and PJM South to flag facilities that need to be watched closely by operators. The VEM manual has been updated and converted into the SERC east-RFC manual. The updated version will be submitted to the ERAG MC. The SERC east-RFC Study Forum has both seasonal and near/long term future working groups set up. With the staffing for the future working group they are in a good position to conduct future . assessments.

Common Issues Among the ERAG Study Forums

Transfer Dispatch—It was questioned whether dispatching into the full market or conducting dispatch sensitivities to more local areas provides useful results. RFC-SERC E is considering doing this (dispatch in focused areas such as PJM Classic, PJM West , etc.).

Future Studies—The TPL-005 standard requires the Regions to conduct near-term and longer-term assessments. The pertinent requirements from the standard are indicated below:

R1.2. Near-term planning horizons (years one through five). **Detailed assessments** shall be conducted.

R1.3. Longer-term planning horizons (years six through ten). **Assessment** shall focus on the analysis of trends in resources and transmission Adequacy, other industry trends and developments, and reliability concerns.

R1.4. Inter-Regional reliability assessments to demonstrate that the performance of these systems is in compliance with NERC Reliability Standards TPL-001-0, TPL-002-0, TPL-003-0, TPL-004-0 and respective Regional transmission and generation criteria. These assessments shall also identify key reliability issues and the risks and uncertainties affecting Adequacy and Security.

R2. The Regional Reliability Organization shall provide its Regional and Inter-Regional seasonal, near-term, and longer-term reliability assessments to NERC on an annual basis.

ERAG MC agreed that to fully satisfy the inter-Regional assessment requirements each of the Study Forums will need to conduct future studies. All Study Forums should conduct a near-term assessment for year 2013 during 2008. It will not need to be extensive and can address the typical transfer scenarios done in the seasonal assessments. During 2009 the longer-term assessment could be addressed. The type of analysis in that study will need to be discussed at a later time.

The RFC-SERC east study forum is in a good position to do this because a standing working group is in place. The RFC-NPCC study forum expects to have difficulty in staffing a separate working group to conduct the future studies and may need to skip the 2008-2009 Winter Assessment and do the 2013 Assessment in its place.

As a first step ERAG MC requested the Steering Committees to review existing future studies done in the Regions and determine whether enough information can be extracted

from those to satisfy the TPL-005 standard. All Steering Committees should conduct their 2008 Summer Assessment based on a normal schedule and concurrently do the future studies review. **The Steering Committees will report to the ERAG MC on their progress at the Spring ERAG MC meeting and that will provide more information to determine how to proceed.**

John Odom mentioned that the existing TPL-005 is expected to be retired soon. It will be replaced by an agreement between NERC and Regional Entities to ensure something is in place to cover the TPL content. There will need to be something included in the Regional Delegation Agreements or an Appendix will need to be added to the ERAG Agreement.

5. Approve MC Handbook (draft 4)

Jeff Mitchell asked if there were any additional revisions to Draft 4 of the ERAG MC Handbook. Jay Caspary pointed out revisions to the cover sheet and a map update. There is also a need to include something on data release procedures and the MMWG input is needed for that. With final revisions the Handbook will be adopted as the final approved version. It will be posted on the ERAG web page as the final version.

6. Review Administrative Items

a. Web site

Jeff Mitchell reported on the ERAG web page status. Past ERAG and Steering Committee minutes/meeting notes, reports and other files will be posted. MMWG meeting minutes and other files will be transferred from NERC. Bob Cummings also has other data that can be transferred and posted.

An ERAG/MMWG web FTP site is needed to enable the transfer of large files, such as those used for power flow and dynamics case development.

b. NEL for all REs needed for billing

The Net Energy for Load (NEL) values are needed as soon as possible. The Regions that have not submitted this information will send their information to Jeff Mitchell.

7. Update on August 4th Disturbance

Bob Cummings provided an update regarding the analysis of the August 4, 2007 Indiana disturbance. A dynamics case to simulate the event is being developed and a request for data had been sent out. Data was still needed so a second request is being sent.

Dynamics Event Replication Cases

Bob Cummings pointed out that the quality of the data representation in the dynamics cases is still a concern. During the August 2003 event replication work a lot of cleanup work was done to achieve a very high quality system representation, but since then not all of the dynamics base cases have the changes included that were made at that time and in many cases the old errors are present. Eric Allen at NERC had run a series of tests of the 2007 Summer dynamics case to prepare a case for the August 4 replication. **NERC will send a list of the error corrections and other changes made during the blackout simulation work to the RCs and ERAC MC.**

It was suggested that continually keeping a seasonal dynamics-ready case available would meet the need for event replication work, but that may require additional MMWG effort and may not be feasible. ERAG MC and MMWG will need to discuss this proposal further to determine what changes would be needed to accomplish it.

8. Future Conference Call and Meeting Schedule

a. Proposed 2008 meeting schedule

The Joint Steering Committee meetings will be held on April 30-May 2.

i. Feb./Mar. – location ? (review 2009 budget)

The next ERAG MC meeting will be held on February 26-27, 2008 in Charlotte, NC. It will be a full day on the 26th and a half day on the 27th. A portion of the meeting will be a joint session with the Multi-Regional Modeling Group.

Another meeting will be necessary in Spring 2008. That meeting will be held from noon on April 23 to noon and April 24 at the MRO Offices in Roseville, Minn. (Twin Cities).

ii. August, with SERC pig roast?

The summer meeting will be held prior to the SERC pig roast from noon on August 7 to noon on August 8. It is expected to be held in Birmingham, Alabama.

iii. Nov./Dec. – location ?

The Fall 2008 meeting will be held from noon on October 21 to noon on October 22 with the location to be determined later.

Conference call

It was determined that an ERAG MC conference call was needed. One was scheduled for Thursday, November 1 between 3 and 5 PM EDT. Topics for the conference call will include:

- Discuss any issues pertaining to the contract with Powertech for the MMWG database project

- Approve the MMWG base case and data release policy (power flow and dynamics) as presented at the Oct. 29-30 meeting
- Review issues related to the RFP for the MMWG power flow coordinator
- Discuss generator data collection in MMWG process
- Discuss GE involvement in MMWG base case building process regarding case solution in PSLF

Draft for Comment minutes issued by Paul Roman on December 20, 2007.
Final minutes issued on February 29, 2008.