PJM Interconnection
Resource Adequacy Analysis Subcommittee
Meeting Notes
Teleconference / Web Conference
September 5, 2013
9:30 AM

Participants:

Brandolisio, Frank    PECO Energy Company
Campbell, Bruce    EnergyConnect, Inc.
Carmean, Greg    OPSI, Inc.
Fernandes, John    RES Americas
Filomena, Guy    Customized Energy Solutions, Ltd.
Hoatson, Tom    Riverside Generating, LLC
Huntoon, Stephen    NextEra Energy Power Marketing, LLC
McDonald, Steve    Customized Energy Solutions, Ltd.
Norton, Chris    American Municipal Power, Inc.
Pakela, Greg    DTE Energy Trading, Inc.
Reif, Kenneth    PPL Electric Utilities Corp.
Snow, Robert    Federal Energy Regulatory Commission
Watson, Mark    Duquesne Light Company

Falin, Tom, Chair    PJM
Bhavaraju, Murty    PJM
Gledhill, Andrew    PJM
Mooney, Molly    PJM
Rocha, Patricio    PJM
Reynolds, John    PJM
Quevada, Jason, Secretary    PJM
1. **ADMINISTRATIVE ITEMS**

   The meeting started at 9:30 am and ended at 11:30 am. The Chair welcomed the group and solicited additional agenda items for the meeting. There were no additional agenda items suggested.

2. **APPROVAL OF MEETING NOTES**

   The Secretary reviewed the meeting notes for the July 3, 2013 meeting and solicited comments from the Subcommittee. The Subcommittee unanimously approved the amended meeting notes.

3. **2013 RRS PRELIMINARY RESULTS AND DISCUSSION**

   Messrs. Gledhill and Rocha led a discussion of the draft results of the 2013 Reserve Requirement Study (RRS) analysis. Mr. Gledhill noted that in general the Study is very similar in scope, base assumptions and model characteristics as the previous 2012 RRS report. Mr. Rocha showed several slides that detailed consistency of the 2012 and 2013 Study. The target date to review the draft 2013 Study report was the next RAAS meeting on October 3th, 2013.

   Results of 2013 and 2012 RRS are summarized below:

<table>
<thead>
<tr>
<th>RRS Year</th>
<th>Delivery Year Period</th>
<th>Calculated IRM</th>
<th>Recommended IRM</th>
<th>Average EFORD</th>
<th>Average XEFORD</th>
<th>World Peak*</th>
<th>Recommended FPR</th>
<th>Recommended DR Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>2014 / 2015</td>
<td>16.23%</td>
<td>16.2%</td>
<td>7.35%</td>
<td>5.97%</td>
<td>96.4%</td>
<td>1.0926</td>
<td>0.954</td>
</tr>
<tr>
<td>2013</td>
<td>2015 / 2016</td>
<td>15.68%</td>
<td>15.7%</td>
<td>6.91%</td>
<td>5.62%</td>
<td>96.4%</td>
<td>1.0920</td>
<td>0.954</td>
</tr>
<tr>
<td>2013</td>
<td>2016 / 2017</td>
<td>15.68%</td>
<td>15.7%</td>
<td>6.94%</td>
<td>5.64%</td>
<td>96.4%</td>
<td>1.0917</td>
<td>0.953</td>
</tr>
<tr>
<td>2013</td>
<td>2017 / 2018</td>
<td>15.69%</td>
<td>15.7%</td>
<td>6.95%</td>
<td>5.65%</td>
<td>96.4%</td>
<td>1.0916</td>
<td>0.953</td>
</tr>
</tbody>
</table>

   The results from the 2012 RRS Study are below:

<table>
<thead>
<tr>
<th>RRS Year</th>
<th>Delivery Year Period</th>
<th>Calculated IRM</th>
<th>Recommended IRM</th>
<th>Average EFORD</th>
<th>Average XEFORD</th>
<th>World Peak*</th>
<th>Recommended FPR</th>
<th>Recommended DR Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2013 / 2014</td>
<td>15.92%</td>
<td>15.9%</td>
<td>7.38%</td>
<td>6.05%</td>
<td>95.4%</td>
<td>1.0889</td>
<td>0.957</td>
</tr>
<tr>
<td>2012</td>
<td>2014 / 2015</td>
<td>15.88%</td>
<td>15.9%</td>
<td>7.36%</td>
<td>6.05%</td>
<td>95.4%</td>
<td>1.0889</td>
<td>0.956</td>
</tr>
<tr>
<td>2012</td>
<td>2015 / 2016</td>
<td>15.31%</td>
<td>15.3%</td>
<td>7.21%</td>
<td>5.91%</td>
<td>95.4%</td>
<td>1.0849</td>
<td>0.958</td>
</tr>
<tr>
<td>2012</td>
<td>2016 / 2017</td>
<td>15.56%</td>
<td>15.6%</td>
<td>6.97%</td>
<td>5.69%</td>
<td>95.4%</td>
<td>1.0902</td>
<td>0.955</td>
</tr>
</tbody>
</table>
4. **FUTURE MEETINGS**

The Subcommittee agreed to meet on October 3, 2013 from 9:30 pm – 11:30 am EPT via web-ex/tele-conference.

**2013 ACTION ITEMS**

1. Evaluate the modeling and analysis techniques used in CETO studies.
2. Developing a MARS model to determine impacts of modeling the World as a single entity vs. individual regions
3. Perform peak period generation performance analytical assessments for RTO and LDAs.

**COMPLETED ACTION ITEMS**

1. Identify scope and analysis efforts needed to determine generator performance at peak demand periods
2. Evaluation of current treatment of Demand Resources (DR)
3. Comparison of Modeling Parameters used for MARS and PRISM.
4. Evaluation of the PRISM load model (Comparison to historical peak load variability, Use of Non-normal distributions, Linkage to forecast etc.)

**PARKING LOT- OPEN ITEMS**

1. MARS assessments to use transition state matrix to replace two-state statistics used to represent generation performance
2. Examination of World reserve levels and deliverability of those reserves to PJM
3. Investigate the Total Transfer Capability (TTC) for the PJMRTO
4. Investigate the effects of common mode outages on generator forced outage rates and its effects on the IRM.
5. Output of 21 points in the load distribution and verify the impacts of greater granularity
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You may not discuss any topics that violate, or that might appear to violate, the antitrust laws including but not limited to agreements between or among competitors regarding prices, bid and offer practices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that might unreasonably restrain competition. If any of these items are discussed the chair will re-direct the conversation. If the conversation still persists, parties will be asked to leave the meeting or the meeting will be adjourned.

Code of Conduct:
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