RTOs/ISOs - Selected Posting Materials

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MIC Special Session: Price Transparency
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• **Commitment Process Related:**
  – Reliability Analysis Schedule MW (Markets Gateway)
    • Units logged by dispatch during the Reliability Assessment Commitment (RAC)
    • Categories: Reason, Aggregated Economic Max Total
    • Totals are for RTO by reason category
    • Totals = Daily Economic maximum of all units scheduled
    • Includes units logged from 14:15 (close of re-bid period) to midnight
    • Data is retained / displayed up to 10 days
  – Day-Ahead Schedule MW (Markets Gateway)
    • Units logged by Day-Ahead (DA)
    • Data is retained/displayed up to 10 days
    • Categories: Reason, Aggregated Economic Max MW Total
• **Uplift Related:**
  - **Energy Market Uplift Data**
    • Daily uplift credits by zone by day
    • Frequency: Monthly
  - **PJM Markets Report**
    • Monthly aggregated by categories: Day-Ahead Operating Reserve, Balancing Operating Reserve, Reactive, Black Start, Lost Opportunity Cost
    • Frequency: Monthly
• **Commitment Process Related:**
  – Operational Announcements
    • Dispatcher Notices, Committed for Reliability, 15 Minute Scheduling Disabled, Market Monitor Notices, Market Pricing Notices
    • Frequency: As updates occur

• **Uplift Related:**
  – Operations Performance Metrics
    • Monthly Power Supplier Uplift components
    • Frequency: Monthly
New York ISO Operational Announcements Example

<table>
<thead>
<tr>
<th>Dispatcher Notices</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-Dec-2016 06:07:05</td>
<td>ISO REQUESTS GILBOA__2 OUT OF MERIT. COMMITED FOR ISO RELIABILITY AT START TIME 12/20/2016 06:00 FOR SCHEDULED TRANSMISSION OUTAGE.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Committed for Reliability</th>
<th>Message</th>
</tr>
</thead>
</table>
• **Commitment Process Related:**
  – Real-Time Revenue Sufficiency Guarantee Commitments
    • Market Interval, Commitment Reason (Constraint name), Total Economic Max, Number of Resources
    • Frequency: Every five minutes

• **Uplift Related:**
  – Revenue Sufficiency Guarantee
    • Market-wide settlement results of Day Ahead (DA) and Real Time (RT) RSG Make Whole Payments
    • Frequency: Week lag and includes data from up to 13 months in history
MISO Real-Time RGD Example

<table>
<thead>
<tr>
<th>Market Interval</th>
<th>COMMIT REASON</th>
<th>TOTAL ECON MAX</th>
<th>NUM RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-02-14T09:40:00</td>
<td>Fncy_Pnt_500_230_AT 1_Xmfr_FLO_Wbre +++ EE50144</td>
<td>411</td>
<td>3 or less</td>
</tr>
</tbody>
</table>
• **Uplift Related:**
  – Net Commitment Period Compensation “Make Whole”
    • Day-Ahead and Real-Time categories with breakdown
    • Further breakdown of Real-Time is provided (RT Out of Merit, RT Cancelled Start, RT Hourly Shortfall, RT Posturing)
    • Reliability payments by Reliability Region
    • Frequency: One week lag
<table>
<thead>
<tr>
<th>Date</th>
<th>1st Contingency Reliability Cost Payments (Internal Locations)</th>
<th>1st Contingency Reliability Cost Payments (External Locations)</th>
<th>2nd Contingency Reliability Cost Payments</th>
<th>Voltage Reliability Cost Payments</th>
<th>Distribution Reliability Cost Payments</th>
<th>Generator Performance Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Jan-16</td>
<td>$10,163</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>N/A</td>
</tr>
<tr>
<td>2-Jan-16</td>
<td>$28,009</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>N/A</td>
</tr>
<tr>
<td>3-Jan-16</td>
<td>$10,912</td>
<td>$246</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>N/A</td>
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<tr>
<td>4-Jan-16</td>
<td>$76,501</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>N/A</td>
</tr>
</tbody>
</table>
• **Commitment Process Related:**
  – **Daily Exceptional Dispatch Report**
    • Provides Market Participants with data on the volume of exceptional dispatches initiated
    • Provides exceptional dispatch volume in Megawatt Hours (MWh) and the associated reason
    • Frequency: Three day lag
<table>
<thead>
<tr>
<th>TRADE_DATE</th>
<th>REASON</th>
<th>OTHER_REASON</th>
<th>MWH</th>
</tr>
</thead>
<tbody>
<tr>
<td>12FEB2017:00:00:00</td>
<td>Operating Procedure Number and Constraint</td>
<td>OP 6310 PATH 15 (MIDWAY-LOS BANOS)</td>
<td>89.57</td>
</tr>
<tr>
<td>12FEB2017:00:00:00</td>
<td>Operating Procedure Number and Constraint</td>
<td>OP 7110 (HUMBOLDT AREA)</td>
<td>127.08</td>
</tr>
<tr>
<td>12FEB2017:00:00:00</td>
<td>Planned Transmission Outage and Constraint</td>
<td>SYSTEM OPERATING LIMIT - PLANNED OMS WORK</td>
<td>40.18</td>
</tr>
<tr>
<td>12FEB2017:00:00:00</td>
<td>Software Limitation</td>
<td>N/A</td>
<td>251.92</td>
</tr>
<tr>
<td>12FEB2017:00:00:00</td>
<td>Unplanned Outage</td>
<td>N/A</td>
<td>1.79</td>
</tr>
<tr>
<td>12FEB2017:00:00:00</td>
<td>Voltage Support</td>
<td>N/A</td>
<td>1507.96</td>
</tr>
</tbody>
</table>
Appendix

- PJM – Uplift Data
- PJM – PJM Markets Report
  - [http://www.pjm.com/~/media/committees-groups/committees/mc/20170123-webinar/20170123-item-10a-markets-report.ashx](http://www.pjm.com/~/media/committees-groups/committees/mc/20170123-webinar/20170123-item-10a-markets-report.ashx)
- NYISO – Operational Announcements
- NYISO – Management Committee
• MSO- Real-Time RSG Commitments
  o https://www.misoenergy.org/MarketsOperations/RealTimeMarketData/Pages/Real-TimeRSGCommitments.aspx
• MISO - Revenue Sufficiency Guarantee
  o https://www.misoenergy.org/Library/MarketReports/Pages/MarketReports.aspx
• ISO NE - Net Commitment Period Compensation
  o https://www.iso-ne.com/markets-operations/market-performance/performance-reports
• CAISO – Daily Exceptional Dispatch Report
• CAISO – Operating procedures guide rules and policy implementation