OPERATIONS MONTHLY REPORT

May 2005

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ERCOT System Operations

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Market Operations Support
### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>AS</td>
<td>Ancillary Service</td>
</tr>
<tr>
<td>BES</td>
<td>Balancing Energy Service</td>
</tr>
<tr>
<td>DBES</td>
<td>Down Balancing Energy Service</td>
</tr>
<tr>
<td>DRS</td>
<td>Down Regulation Service</td>
</tr>
<tr>
<td>LBE</td>
<td>Local Balancing Energy</td>
</tr>
<tr>
<td>MCPC</td>
<td>Market Clearing Price for Capacity</td>
</tr>
<tr>
<td>MCPE</td>
<td>Market Clearing Price for Energy</td>
</tr>
<tr>
<td>NSRS</td>
<td>Non-Spinning Reserve Service</td>
</tr>
<tr>
<td>OOMC</td>
<td>Out of Merit Capacity</td>
</tr>
<tr>
<td>OOME</td>
<td>Out of Merit Energy</td>
</tr>
<tr>
<td>QSE</td>
<td>Qualified Scheduling Entity</td>
</tr>
<tr>
<td>RMR</td>
<td>Reliability Must Run</td>
</tr>
<tr>
<td>RPRS</td>
<td>Replacement Reserve Service</td>
</tr>
<tr>
<td>RRS</td>
<td>Responsive Reserve Service</td>
</tr>
<tr>
<td>UBES</td>
<td>Up Balancing Energy Service</td>
</tr>
<tr>
<td>URS</td>
<td>Up Regulation Service</td>
</tr>
</tbody>
</table>
Daily Peak Demand

Peak Demand for the Month: 5/24/05  17:45  52001

13 Month Review of Peak Demand

Peak Demand is Peak Interval Demand
Trend of Temperature in Five Congestion Management Zones

Relative Activity Capacity Purchases – OOMC & RMR

Note: 1 Unit-Day = 1 unit procured during any time period within one trade day.
Total Number of Days of Local Congestion Management

Note: 1 day= units procured during any time period within one trade day. Total numbers of 1 day or less of local congestion management are not shown in the graph. Occurrences of 1 day or less are not listed in table but are totaled in graph.

Green fonts indicates congestion affected by outages  Blue fonts indicates a Remedial action plan has been developed for the element
Instances of CSC Congestion

Number of intervals

EN  SN  NH  SH  WN  NW

0  5  10  15  20  25  30  35  40  45  50

Notable Events

New Procedures/ Forms/ Operations Bulletins
- 05/03/05 Ercot Market Operations Bulletin 26 Clarification of RPRS Bid Requirements
- 05/17/05 Ercot Power Operations Bulletin 168 Mitigation Plans
- 05/17/05 Ercot Power Operations Bulletin 167 Procedure for canceling OOME

Security Alert Stage/ Threatcon/ Related issues
- None/Yellow

EECP Occurrence
- None

Major Weather Related Power System Problems
- 05/08/05 Thunderstorms in the Coast Zone interrupted service to 100,000+ customers
- 05/14/05 00:30 Severe weather in West Texas forced out five 69kV lines and two 138kV lines.
- 05/29-30/05 Thunderstorms in the Coast Zone interrupted service to 100,00+ customers
- 05/31/05 22:30 Severe weather in West Texas forced out 2 345kV busses and multiple 345kV lines.

Major system Voltage problems
- None

Significant Communication Problems
- 05/20/05 Held 16:45 deployments and resumed with 17:30 deployments. Hour Ahead study failed to solve.
- 05/23/05 Portal Inoperable

Load Shed incidences
- None

OCN, Advisory, Alert, Emergency Notice and Major Disturbances
- 05/03/05 10:30-20:35 Transmission Alert - Sandow 345/138kV Tr loading
- 05/09/05 14:54-18:00 Transmission Alert - Post Contingency loading of Denton Avenue-Handley 69kV Tr & Saginaw 138/69kV Tr
- 05/12/05 15:03-23:00 Transmission Alert - Loss of Gibbons-East/Bryan-Greens Prairie loads Dansby-TAM
- 05/13/05 20:00-24:00 OCN - Severe weather in the North West Texas area
- 05/14/05 12:00-21:05 Transmission Alert - Post contingency loading of Pearsall-Derby 69 Kv, Dilley 138/69 Tr, Derby Sub-Dilley Sub 69 Kv, Dilley Sub-Dilley Switch 69 Kv, Asherton-North Laredo 138 Kv. **Laredo 3 forced out**
- 05/14/05 5:30-15:00 OCN - OCN issued for capacity insufficiency for hours 1600 – 2100
- 05/14/05 03:30-5:30 OCN - OCN issued for capacity insufficiency for hours 1600 – 1900
- 05/14/05 03:12-5:30 OCN - OCN issued for Central and North Texas for severe weather
- 05/15/05 9:15-11:00 OCN - OCN - Possible Capacity shortage for hours 1700 – 2000
- 05/17/05 13:00-17:00 Alert - Real-time Ancillary Service shortage. Market opened to procure RRS and URS services
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/17/05</td>
<td>14:01-16:25</td>
<td>Transmission Alert - Post contingency loading of Johnson Switch-Montague 69Kv</td>
</tr>
<tr>
<td>05/17/05</td>
<td>11:21-13:00</td>
<td>Transmission Alert - Post contingency loading of Chillicothe-Vernon 69 Kv</td>
</tr>
<tr>
<td>05/17/05</td>
<td>11:25-14:01</td>
<td>Transmission Alert - Post contingency loading of Seguin 138/69 Kv Tr</td>
</tr>
<tr>
<td>05/18/05</td>
<td>11:57-17:20</td>
<td>Transmission Alert - Loss of Denton Tr 1 loads North Denton 138/69 Kv Tr and North Sanger - Spring 138 Kv.</td>
</tr>
<tr>
<td>05/20/05</td>
<td>13:43-14:40</td>
<td>Advisory - Loss of EMS controls</td>
</tr>
<tr>
<td>05/20/05</td>
<td></td>
<td>Venus SPS Activation(s)</td>
</tr>
<tr>
<td>05/20/05</td>
<td>08:01-09:48</td>
<td>Alert - Capacity Insufficiency for intervals 16:00 -18:00</td>
</tr>
<tr>
<td>05/20/05</td>
<td>11:20-16:00</td>
<td>OCN - Capacity Insufficiency for intervals 16:00 -18:00</td>
</tr>
<tr>
<td>05/20/05</td>
<td>04:00-09:48</td>
<td>OCN - Capacity Insufficiency for intervals 16:00 -18:00</td>
</tr>
<tr>
<td>05/21/05</td>
<td>13:50-21:00</td>
<td>Transmission Alert - Loss of Gibbons-East/Bryan-Greens Prairie loads Dansby-TAM</td>
</tr>
<tr>
<td>05/22/05</td>
<td>15:45-22:00</td>
<td>Transmission Alert - Loss of Dilley - San Miguel loads Derby - Pearsall</td>
</tr>
<tr>
<td>05/23/05</td>
<td>10:00-13:30</td>
<td>Alert - Capacity Insufficiency for intervals 16:00 -18:00</td>
</tr>
<tr>
<td>05/23/05</td>
<td>04:22-13:30</td>
<td>OCN - Capacity Insufficiency for intervals 16:00 -19:00</td>
</tr>
<tr>
<td>05/24/05</td>
<td>08:30-12:30</td>
<td>OCN - Capacity Insufficiency for intervals 16:00 -18:00</td>
</tr>
<tr>
<td>05/31/05</td>
<td>15:30-22:37</td>
<td>Transmission Alert - Actual overload on Bates-Palmhurst 69 Kv</td>
</tr>
<tr>
<td>05/31/05</td>
<td>16:30-18:10</td>
<td>Transmission Alert - Loss of Euless-Liggett 138kv overloads Roanoke-McPherson 138Kv</td>
</tr>
<tr>
<td>05/31/05</td>
<td>11:00-12:15</td>
<td>Transmission Alert - Loss of Euless-Liggett Switch 138kv overloads Saginaw-Haltom 138Kv</td>
</tr>
<tr>
<td>05/31/05</td>
<td>15:10-19:30</td>
<td>Transmission Alert - Loss of Laredo Plant 138/69kv Tr 1 loads Laredo 138/69 Tr 2</td>
</tr>
</tbody>
</table>

**New SPS & RAP’s**

None

**Major Computer System Problems/Enhancements/Fixes**

05/18/05  AGC software enhancement installed to correct occurrences of irregular regulation deployments.

**Update on New Generation**

05/4/05  70 MW unit in the Coast Zone commercially available.

**Max / Min Temperature**

| Max: 107°F FW | Min: 42.8°F W |
Ancillary Services
Average Hourly Procurement by Ancillary Service

13 Month Review of Average Hourly Procurement by Ancillary Service
Average MCPC by Ancillary Service

13 Month Review of Average MCPC by Ancillary Service
Balancing Energy

Average Balancing Energy Deployed
Average UBES Deployment in Five Zones

Average DBES Deployment in Five Zones
13 Month Review of UBES Deployment

13 Month Review of DBES Deployment
Balancing Energy
Energy Purchased Through ERCOT

(PRR404: Any Balancing Energy scheduled through the ERCOT Scheduling process)
Balancing Energy
% of Total ERCOT Energy Requirement
Balancing Energy
Average MCPE
Average MCPE in Five Zones

Average MCPE at Each Interval for Five Zones
Balancing Energy
Average Shadow Price
Note: There is not a price for self-arranged Ancillary Services. MCPC is used to calculate the cost for self-arrangement.
13 Month Review of OOMC Cost At Final Settlement and True Up

- Start-Up Payment (Total: $1.06 Million)
- Total OOMC Payment (Total: $4.78 Million)

Totals are for time range of the chart.
RMR Cost (Initial Settlement)

-1.5 -1.0 -0.5 0.0 0.5 1.0 1.5


RMR Net Cost (Initial Settlement)

Total Net Cost $7.74 Million

Million $
Verified Actual RMR Cost*

RMR Net Cost: $116.97 Million

*Note:

1. Trade dates 3/21/05 thru 5/1/05 complete with Initial Settlement data, using estimated eligible costs.

2. Trade date thru 3/20/05 complete with Final Settlement data, using verifiable actual cost data provided by the RMR Unit owner.
Total Local Congestion Costs by Area

Total: $16.42 Million

- CENTEX: $4.77
- SOUTH: $3.46
- VALLEY: $0.04
- DFW: $2.00
- NORTH: $3.09
- HOUSTON: $2.40
- WEST: $0.59
- MCCAMEY: $0.04
- Total Local Congestion Costs by Instruction Type (in Million $)

- LBE-operate at or below a level: $6.09
- LBE-operate at above a level: $4.78
- LBE-hold at a level: $1.08
- Manual OOME DN: $0.69
- Manual OOME UP: $3.59
- OOMC: $0.17
## Top Ten Local Congestion Constraints

<table>
<thead>
<tr>
<th>Contingency</th>
<th>Overloaded Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC2</td>
<td>Salem LCRA Transformer 345/138</td>
</tr>
<tr>
<td>*</td>
<td>Fayette Plant-Fayetteville 345</td>
</tr>
<tr>
<td>Austrop Sandow (Austrop AT1 or AT2)</td>
<td>Fayette Plant-Fayetteville 138</td>
</tr>
<tr>
<td>OC2</td>
<td>Salem LCRA Transformer 345/138</td>
</tr>
<tr>
<td>**</td>
<td>Duck Creek Tap-Forney Switch 345</td>
</tr>
<tr>
<td>Lytton Springs-Zorn &amp; Austrop-Zorn (Zorn T1)</td>
<td>Tricorner-Watermill 345</td>
</tr>
<tr>
<td>**</td>
<td>Marion-Skyline 345</td>
</tr>
<tr>
<td>Lytton Springs-Zorn &amp; Austrop-Zorn (Zorn T1)</td>
<td>Texas AM-Dansby 138</td>
</tr>
<tr>
<td>OC2</td>
<td>Hill Country-Marion 345</td>
</tr>
<tr>
<td>**</td>
<td>Gibbons Creek-Bryan Greens Prairie 138</td>
</tr>
<tr>
<td></td>
<td>Vernon-Lake Pualine 138</td>
</tr>
<tr>
<td></td>
<td>Allen Switch-Royse 345</td>
</tr>
<tr>
<td>Total: $10.05 Million</td>
<td>Centerville Rd Switch-Garland Road 138</td>
</tr>
</tbody>
</table>

Note: OC2s have several possible contingency and overloaded element pairs

* 1. Loss of Austrop -Sandow SES 345Kv line overloads Austrop Auto Transformer 1 345kv/138kv  
   2. Loss of Austrop Auto Transformer 1 overloads Austrop Auto Transformer 2 345kv/138kv

** 1. Loss of Lytton Spring-Zorn & Austrop-Zorn 345kv overloads Luling-Zorn 138kv  
   2. Loss of Lytton Spring-Zorn & Austrop-Zorn 345kv overloads Lockhart Auto Transformer 138/69kv  
Cost Summary

Total with DBES: $106.98
Total without DBES: $120.95

13 Month Review of Cost Summary

Total with DBES (Total: $1,144.95 Million)
Total Without DBES (Total: $1,368.03 Million)

Totals are for time range of the chart.
Note:

1. DBES cost is a credit to system costs and therefore is shown as a negative number here to differentiate it from the other types of Reliability Costs.

2. BES deployment costs include two parts: the cost for Power Balance and the cost for CSC Congestion. Due to Relaxed Balanced Schedule, the cost paid for Power Balance covers both the difference between ERCOT load forecast and QSE's schedule and the amount of energy that QSEs intend to buy from Real-Time Energy market.

Please contact Shuye Teng at 512-248-3998 or email at steng@ercot.com should you have any questions.
Addendum: Map of Local Congestion Areas (charts on page 35 and 36)