ERCOT System Operations

Kent Saathoff, Director
Joel Mickey, Manager
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Grid Operation
Daily Peak Demand
July 2004

Peak Demand for the Month: 7/15/04 16:45 56488

Monthly Peak Demand
July 2003 - July 2004

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

[Chart showing temperature trends in five zones from 7/1 to 7/31, with different colors for each zone (Houston, North, South, West, NorthEast)].
OOMC and RMR Activity

Relative Activity Capacity Purchases - OOMC & RMR
July 2004

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

Total Number of Days of Local Congestion Management

Note: Graph
<table>
<thead>
<tr>
<th>Contingency</th>
<th>Congestion Element</th>
<th>Number of Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>N McAllen - N Edinburg</td>
<td>Polk - Hall Acres</td>
<td>25</td>
</tr>
<tr>
<td>Austrop - Sandow</td>
<td>Austrop Tr</td>
<td>25</td>
</tr>
<tr>
<td>Marion - Hill Country/Skyline</td>
<td>Cibolo - Schertz</td>
<td>16</td>
</tr>
<tr>
<td>Gibbons Creek - East</td>
<td>Gibbons Creek - Greens Prairie</td>
<td>15</td>
</tr>
<tr>
<td>West Levee Tr</td>
<td>Compton Road - Industrial Blvd</td>
<td>14</td>
</tr>
<tr>
<td>N McAllen - N Edinburg</td>
<td>Pharr - Pharr MVEC</td>
<td>14</td>
</tr>
<tr>
<td>La Palma - Rio Honda</td>
<td>La Palma - Rio Hondo</td>
<td>12</td>
</tr>
<tr>
<td>Gibbons Creek - Twin Oaks Switch</td>
<td>Jewet - Watsons Chapel</td>
<td>11</td>
</tr>
<tr>
<td>Frontera - S McAllen</td>
<td>Polk - Hall Acres</td>
<td>11</td>
</tr>
<tr>
<td>Clear Springs - Marion/Zorn</td>
<td>SMI - McQueeney</td>
<td>11</td>
</tr>
<tr>
<td>Big Lake - N McCamey</td>
<td>Fort Lancaster - Illinois 4</td>
<td>11</td>
</tr>
<tr>
<td>Valley Tr 1</td>
<td>Paris Sw - Kimberly Clark</td>
<td>8</td>
</tr>
<tr>
<td>Uvalde - Hamilton</td>
<td>Asherton - West Conoco</td>
<td>8</td>
</tr>
<tr>
<td><strong>Buda - Turnerville</strong></td>
<td><strong>Marshall Ford - Hicross</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>SA Red Creek Tr 2</td>
<td>SA Red Creek Tr 1</td>
<td>5</td>
</tr>
<tr>
<td>Mulberry Creek W Tr.</td>
<td>Mulberry Creek E Tr.</td>
<td>5</td>
</tr>
<tr>
<td><strong>Temple - Lake Creek/Tradinghouse</strong></td>
<td><strong>Robertson - Milano</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>N McAllen - N Edinburg</td>
<td>Polk - Pharr</td>
<td>4</td>
</tr>
<tr>
<td><strong>Comanche Peak - Decordova/Wolf Hollow –</strong></td>
<td><strong>Johnson Switch - Venus Switch</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Rocky Creek</td>
<td><strong>Medical Center - Bandera</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Cagnon - Marbach</td>
<td><strong>Robertson - Milano</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Big Lake Tr</td>
<td>Fort Lancaster - Illinois 4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Sandow Tr.</strong></td>
<td><strong>Robertson - Milano</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Mt Enterprise - Trinidad / Martin Lake - Stryker Creek</td>
<td>Nacogdoches - N Herty</td>
<td>3</td>
</tr>
<tr>
<td>West Levee - Watermill</td>
<td>Cedar Hill - Watermill</td>
<td>2</td>
</tr>
<tr>
<td>Temple - Lake Creek/Tradinghouse</td>
<td>Lake Creek - Temple</td>
<td>2</td>
</tr>
<tr>
<td>San Angelo - San Angelo North</td>
<td>San Angelo Concho Tr</td>
<td>2</td>
</tr>
<tr>
<td>San Angelo - Menard</td>
<td>Ballinger - Paint Rock</td>
<td>2</td>
</tr>
<tr>
<td>Roanoke Sw Tr</td>
<td>Bedford - Euleless</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Polk - Hall Acres</td>
<td>2</td>
</tr>
<tr>
<td>N Denton - W Denton</td>
<td>N Sanger - Spring</td>
<td>2</td>
</tr>
<tr>
<td>Morgan Creek - Odessa</td>
<td>Big Spring Switch - Big Spring West</td>
<td>2</td>
</tr>
<tr>
<td>Lon Hill Tr 2</td>
<td>Lon Hill Tr 1</td>
<td>2</td>
</tr>
<tr>
<td>Live Oak - Sonora</td>
<td>El Dorado</td>
<td>2</td>
</tr>
<tr>
<td>Lapalma 38/69 1</td>
<td>Lapalma 38/69 2</td>
<td>2</td>
</tr>
<tr>
<td>Cagnon - Marbach</td>
<td>Five Points - West Side</td>
<td>2</td>
</tr>
<tr>
<td>Big Lake - N McCamey</td>
<td>McCamey - Rankin</td>
<td>2</td>
</tr>
<tr>
<td>Big Brown - Richland Chambers</td>
<td>Tricomer - Watermill</td>
<td>2</td>
</tr>
<tr>
<td>Bates - Garza</td>
<td>Freer - San Diego</td>
<td>2</td>
</tr>
</tbody>
</table>

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. Indicates a Remedial action plan has been developed for the element.
CSC Congestion Management

Instances of CSC congestion

Number of intervals

0 5 10 15 20 25 30 35 40

7/1 7/2 7/3 7/4 7/5 7/6 7/7 7/8 7/9 7/10 7/11 7/12 7/13 7/14 7/15 7/16 7/17 7/18 7/19 7/20 7/21 7/22 7/23 7/24 7/25 7/26 7/27 7/28 7/29 7/30 7/31

EN SN NH SH WN
Notable Events

New Procedures/ Forms/ Operations Bulletins

<table>
<thead>
<tr>
<th>Date</th>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/04</td>
<td>Ercot Power Operations Bulletin 95</td>
<td>Shift Supervisor V2R8 –CN#132  - Placing units in test mode</td>
</tr>
<tr>
<td>07/01/04</td>
<td>Ercot Power Operations Bulletin 96</td>
<td>Transmission &amp; Security Desk V2R23 –CN#134  - Placing units in test mode</td>
</tr>
<tr>
<td>07/01/04</td>
<td>Ercot Power Operations Bulletin 97</td>
<td>Shift Supervisor V2R8 – CN#135  - NERC/DOE disturbance reporting</td>
</tr>
<tr>
<td>07/01/04</td>
<td>Ercot Power Operations Bulletin 99</td>
<td>Verbal Dispatch Exception – Transmission &amp; Security Desk – Issued VDE for intervals where the OOME instruction was not included in the MCE execution.</td>
</tr>
<tr>
<td>07/01/04</td>
<td>Ercot Power Operations Bulletin 100</td>
<td>Verbal Dispatch Exception – Frequency Control Desk – Issued VDE for intervals where the OOME instruction was not included in the MCE execution.</td>
</tr>
<tr>
<td>07/12/04</td>
<td>Ercot Power Operations Bulletin 101</td>
<td>Day Ahead Desk  V2R14-CN#141 – Clarifications to the Day Ahead process</td>
</tr>
<tr>
<td>07/12/04</td>
<td>Ercot Power Operations Bulletin 102</td>
<td>Shift Supervisor V2R8 – CN#140 – Placing units in test mode</td>
</tr>
<tr>
<td>07/27/04</td>
<td>Ercot Power Operations Bulletin 104</td>
<td>Frequency Control Desk V2R13 – CN#143 – Actions when frequency telemetry is incorrect</td>
</tr>
</tbody>
</table>

Security Alert Stage/ Threatcon/ Related issues
Security Threat Alert Yellow (Elevated) maintained through July.

EECP Occurrence
None

Major Weather Related Power System Problems
None

Major system Voltage problems
None

Significant Communication Problems

<table>
<thead>
<tr>
<th>Date</th>
<th>Time Interval</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/10</td>
<td>14:45 interval</td>
<td>Incorrect Constraint Limit entered in the MOI</td>
</tr>
<tr>
<td></td>
<td>12:14 – 12:35</td>
<td></td>
</tr>
<tr>
<td>7/23</td>
<td>15:08 – 15:17</td>
<td>POS system not available during intervals listed. Deployed regulation froze at current levels.</td>
</tr>
<tr>
<td></td>
<td>16:52 – 17:03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17:15 – 17:56</td>
<td></td>
</tr>
</tbody>
</table>
Major Computer System Problems/Fixes

7/19  Held 14:45 interval Incorrect Constraint Limit entered in the MOI
POS system unavailable intermittently causing ERCOT to lose frequency
control and system monitoring. A larger set of dynamic limits exceeded the
capability of the SCADA system causing it to freeze. The new dynamic limit
set has been removed from production.

7/21  10:37 – 7/23  17:54

Load Shed incidences

7/19  16:00 – 19:00  75 -100 MW load reduction at the Sandow station to relieve loading on Sandow 345/138 kV Tr.
Robertson-Milano 138 kV line and Jewet-Watsons Chapel 138 kV line.

New SPS & RAP’s

07/01/04  Medical Center - Bandera Road Pre-Contingency Action Plan
07/12/04  Hicross – Marshall Ford Pre-Contingency Action Plan
07/14/04 Milano Robertson Pre-Contingency Action Plan
The above have been generated due to transmission outages or maintenance in the area.
07/28/04  Lake Creek – Jewet Mitigation Plan.

OCN, Advisory, Alert, Emergency Notice and Major Disturbances

7/1  16:00-22:30 Transmission Alert issued. Loss of double Austrop - Sandow loads Hicross - Marshall Ford 138 kV.
16:00-22:30 Transmission Alert issued. Loss of Glidden (LCRA) - Glidden (CSW) loads Blessing - Midfield 69 kV.
7/2  13:40 -23:55 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
13:53 -18:00 Transmission Alert issued. Loss of Glidden (LCRA) - Glidden (CSW) loads Blessing - Midfield 69 kV.
7/3  14:00 -21:00 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/5  17:25-22:35 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/6  14:30 - 20:45 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/7  15:30 - 23:40 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/8  16:30 - 24:00 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/9  12:00 -24:00 Transmission Alert issued. Loss of Dilley - San Miguel loads Pleasanton - Jourdanton 69 kV.
13:45-24:00 Transmission Alert issued. Loss of Lon Hill 138/69 kV Tr 2 loads Lon Hill 138/69 kV Tr 1
7/10 13:00-24:00 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
17:30-18:30  Transmission Alert issued.  Loss of Gibbons Creek - Greens Prairie loads Gibbons Creek - East 138 kV.
7/12  14:00-23:00  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/13  13:00-24:00  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
15:40-24:00  Transmission Alert issued.  Loss of Gibbons Creek - Greens Prairie loads Gibbons Creek - East 138 kV.
7/14  11:50-22:40  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
15:00-22:00  Transmission Alert issued.  Loss of Gibbons Creek - Greens Prairie loads Gibbons Creek - East 138 kV.
15:45-22:00  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
15:45-22:00  Transmission Alert issued.  Loss of San Angelo Red Creek 345/138 kV Tr. 2 loads San Angelo Red Creek 345/138 kV Tr. 1
7/15  13:15-23:45  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
15:15-23:00  Transmission Alert issued.  Loss of Gibbons Creek - Greens Prairie loads Gibbons Creek - East 138 kV.
15:15-23:00  Transmission Alert issued.  Post contingency loading on the Live Oak - El Dorado 69 kV line.
15:15-23:00  Transmission Alert issued.  Post contingency loading on the San Angelo Concho-San Angelo Lake Nasworthy 69 kV line.
15:15-23:00  Transmission Alert issued.  Loss of San Angelo Red Creek 345/138 kV Tr. 2 loads San Angelo Red Creek 345/138 kV Tr. 1
7/16  11:30-24:00  Transmission Alert issued.  Post contingency loading in the Laredo Area
16:00-21:15  Transmission Alert issued.  Post contingency loading on the San Angelo Concho-San Angelo Lake Nasworthy 69 kV line.
7/17  13:30-23:30  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/19  12:00-24:00  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
14:05-24:00  Transmission Alert issued.  Post contingency loading in the San Angelo Area.
15:10-24:00  Transmission Alert issued.  Loading on Sandow Transformer
16:00-19:00  Transmission Emergency declared  Loading on Sandow Transformer and local 138 kV lines
7/20  11:15-24:00  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
14:00-24:00  Transmission Alert issued.  Loss of Dilley - San Miguel loads Pleasanton - Jourdanton 69 kV.
15:00-24:00  Transmission Alert issued.  Post contingency loading in the San Angelo Area.
15:00-24:00  Transmission Alert issued.  Loss of Lon Hill 138/69 kV Tr 2 loads Lon Hill 138/69 kV Tr 1
7/21  11:45-23:00  Transmission Alert issued.  Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
13:30-23:00 Transmission Alert issued. Loss of Dilley - San Miguel loads Pleasanton - Jourdanton 69 kV.
14:00-23:00 Transmission Alert issued. Post contingency loading in the San Angelo Area.
16:00-23:00 Transmission Alert issued. Loss of Uvalde - Hamilton loads Asherton - West Conaco
12:30-23:00 Transmission Alert issued. Loss of Uvalde - Hamilton loads Asherton - West Conaco
12:30-23:00 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
7/22 15:15:23:00 Transmission Alert issued. Loss of Dilley - San Miguel loads Pleasanton - Jourdanton 69 kV.
15:15:23:00 Transmission Alert issued. Post contingency loading in the San Angelo Area.
7/23 14:30-24:00 Transmission Alert issued. Loss of San Angelo Red Creek - San Angelo North loads San Angelo Concho 138/69 kV Tr.
14:30-24:00 Transmission Alert issued. Post contingency loading in the San Angelo Area.
7/28 12:00-24:00 Transmission Alert issued. Post contingency loading in the San Angelo Area.
15:30-16:15 Transmission Alert issued. Loss of Cagnon - Marbach loads Bandera - Medical Center
16:00-16:15 Transmission Alert issued. Loss of Lake Creek - Jewett loads Navarro - Richland Chambers
7/29 11:10-23:00 Transmission Alert issued. Post contingency loading in the San Angelo Area.
14:30-21:00 Transmission Alert issued. Loss of Dilley - San Miguel loads Pleasanton - Jourdanton 69 kV.
7/31 13:00-24:00 Transmission Alert issued. Post contingency loading in the San Angelo Area.

Update on New Generation
None

Max / Min Temperature
Max: 103.5°F FW
Min: 62.5°F FW

Other
None
Market Operation

Ancillary Services
Balancing Energy
Average Balancing Energy Deployed
Balancing Energy

% of Total ERCOT Energy Requirement
Average BES Deployed: as A Percentage of Total Energy Requirement
July 2004

July 2003 - July 2004
Balancing Energy

Average MCPE
MCPE: Rolling 12 Month Records
July 2003 - July 2004

Trend of Average Fuel Index
July 2003 - July 2004
Balancing Energy

Average Shadow Price
Cost Summary
Note: There is not a price for self-arranged Ancillary Services. MCPC is used to calculate the cost for self-arrangement.
Estimated OOMC Cost At Final Settlement
July 2004

Start-Up Payment (Total: $4.06 Million)
Total OOMC Payment (Total: $13.31 Million)

Note:
All OOMC’d units are paid Generic Start-Up Cost and Generic Operational Cost in Initial Settlement. The Start-Up payment for some units will be taken back in Final Settlement if those units did not have an actual startup.

OOMC Cost provided in this chart is an estimation because of the potential of disputes before Final Settlement. This chart will be updated after Final Settlement is completed.
Total Net Cost $14.10 Million

RMR Net Cost (Initial Settlement)
July 2004

RMR Cost (Initial Settlement)
July 2004

Energy  Stand By  Start Up  BENA Credit
RMR Net Cost: $74.33 Million

*Note:

1. Trade dates 1/1/04 thru 6/22/04 complete with Final Resettlement data, using verifiable actual cost data provided by the RMR Unit owner.

2. Trade date 6/23/04 thru 7/31/04 complete with Initial Resettlement data, using estimated eligible costs.
Total Local Congestion Costs by Area
July 2004

DFW $11.32
Austin $0.23
Corpus $0.01
Houston $0.03
San Antonio $0.27
South $2.34
Valley $1.92
West $0.12
Wind $0.22

Total: $18.83 Million

Total Local Congestion Costs by Instruction Type (in Million $)
July 2004

- LBE-operate at or below a level: $5.20
- LBE-operate at or above a level: $11.03
- LBE-hold at a level: $0.75
- Manual OOME DN: $0.70
- Manual OOME UP: $0.31
- OOMC: $0.84
Note: On 7/29, 75% of “DN Payment for LBE deployment without Market Solution” attributed to congestion relief for post-contingency overload of Jewett to Watson Chapel 138kV line.
Cost Summary
(Total w DBES: $ 55.45  Total w/o DBES: $ 90.91)

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 difference between QSE's Relaxed scheduled load and the load it would schedule should RBS were not allowed. The cost for Power Balance is not further divided accordingly because currently we do not have a way to differentiate these two types of Power Balance costs.
Please contact Shuye Teng at 512-248-3998 or email at steng@ercot.com should you have any questions.