



Actions Resulting from April 17, 2006 EECF Event

ERCOT Board of Directors

September 19, 2006



Issues Raised by April 17

- **ERCOT Load Forecast Accuracy**
- **Need for Changes to EECF Procedures**
- **Sufficiency of Operating Reserve Requirements**
- **Should there be incentives for more Interruptible Load**
- **Transmission Operator Firm Load shedding Procedures**
- **Need for improved communication procedures with PUCT, Legislature and Public**

Load Forecast Actions

- **Replaced “new” model in use 4/17 with “old” model in May**
 - Day ahead forecast error improved from ~5% January – April to ~3% May-July
 - Temporarily added 1 standard deviation (1500-1800 MW) to forecast May – July until confidence gained in forecast
- **Conducted Load Forecast Forum with Market participants May 31**
- **Determined main issue with “new” model was corrupted historical data on wind chill**
- **Started project to make additional enhancements to model**
- **Contracted with an independent load forecasting service to have another forecast for comparison going forward**

EECP Procedure Changes

- **Worked with ROS to develop OGRR and PRR up for Board approval today**
 - Bases Notices, Advisories, Alerts and initiation of Steps 1 and 2 of EECP on discounted real-time reserves based on past experience
 - Moves public appeal for conservation up to Step 1 of EECP from Step 3
- **New Procedures already in place for purposes of external communications**



External Communications

| ERCOT Event Stage | ERCOT action/ communication | Triggering event |
|--------------------------------|--|---|
| 1. Alert* | Tight capacity; conditions are being watched closely | Adjusted physical responsive reserves below 2500 MW |
| 2. EECF Step 1 | All available generation dispatched; DC Ties enabled; Media appeal for public conservation | Adjusted physical responsive reserves below 2300 MW |
| 3. EECF Step 2 | Interruptible loads (LaaRs) deployed | Adjusted physical responsive reserves below 1750 MW |
| 4. EECF Step 3 | Rotating firm load shed | Frequency below 59.8 Hz |
| 5. Cancellation of EECF Step 3 | All firm load restored | Frequency restoration |
| 6. Cancellation of EECF | | Grid conditions normal |

** Alerts issued on 6 days between April 17 and Sept. 10*



Operating Reserve Requirement

- **EECP revision changes how reserves are monitored in real time and base notices and EECP implementation on discounted value**
- **ERCOT did study in 2004 that confirmed 2,300 MW Responsive Reserve was still reasonable**
- **Reviewing criteria for Non-Spinning Reserve procurement**
- **While higher reserves might have helped on 4/17**
 - Events of that day were multiple contingency
 - Load exceeded day ahead forecast by ~10%
 - Multiple units tripped within 10 minutes during peak
 - Annual maintenance greatly reduced amount of available capacity
 - Not prudent to increase reserves at all times to protect against low probability multiple events



Interruptible Load Incentives

- **Being considered at the PUCT**
- **Workshop held on September 15**



Firm Load Shedding Procedure

- **ERCOT sets the amount (MW) of load shed for each Transmission Operator (TO)**
- **Protocols only have general requirement for TOs to keep in mind “the need to protect the safety and health of the community and the essential human needs of the citizens.”**
- **ERCOT Staff is conducting a survey of specific load shed procedures used by TOs**
- **Will summarize and report for Subcommittee/TAC consideration**



Communication Procedures

- **New procedures developed with PUCT and State Operations Center (SOC)**
- **Twice daily reports (1100 and 1500) on grid conditions widely distributed to PUCT and ROS and Others**
- **If Alert or EECP is declared, in addition to above, notice sent to SOC and other state officials**



Communications: Pre-EECP and EECP

Alerts & All EECP Stages



PUC

- Commissioners
- Exec. Director
- Media relations
- Infrastructure/Reliability
- Govt. Relations

Legislative Leadership

Governor's Office

SOC Hotline

ERCOT Officers, Board, & Client Services

Market Participants

- Subscriber list screened by ERCOT

All EECP Stages



All of the above PLUS.....

- News media
- All legislators
- All market participants & other interested parties
- Activate ERCOT.com web page for public updates