



# ERCOT Presentation to Joint Senate Committees

February 2, 2011 Grid Emergency Events

Trip Doggett, CEO

February 15, 2011

# ERCOT Region: 22 Million Texans

**75% of Texas land area**  
**200,000 square miles**

**85% of Texas load**

**65,776 MW peak demand**  
**Set Aug. 23, 2010**

**57,282 MW winter peak demand**  
**Set Feb. 10, 2011**

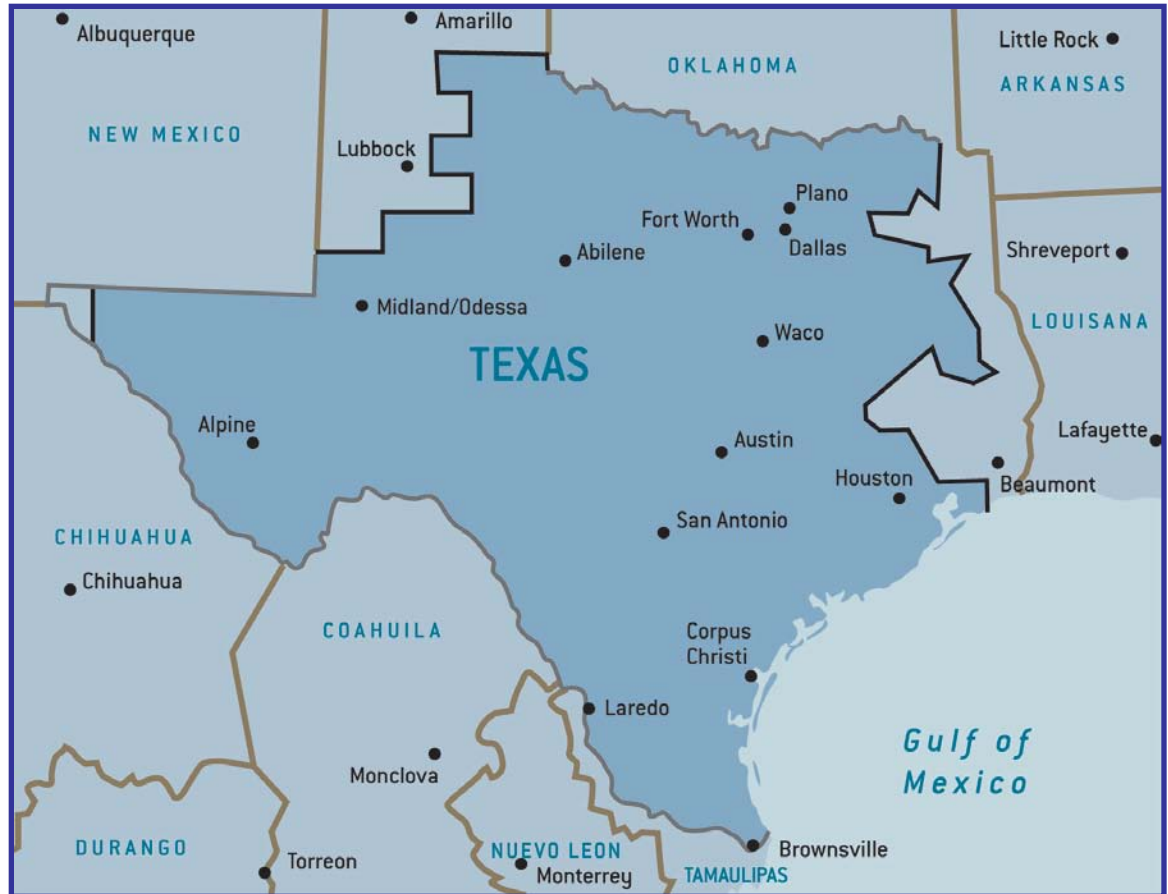
**319 billion kilowatt-hours energy produced, 2010**

**\$32 billion market**

**22 million Texans served**  
**~6.5 million households in competitive choice areas**

## ERCOT does not include:

- El Paso area
- Texas Panhandle
- Northeast Texas
  - Longview, Marshall and Texarkana
- Southeast Texas
  - Beaumont, Port Arthur, and the Woodlands



## Extremely Cold Weather Grips Texas

February 1, 2011

**Major Winter Storm Expected to Develop Over Texas**

February 2, 2011

**Winter Returns with Fury**

February 1, 2011

**The Coldest Week for North Texas in 22 Years**

February 1, 2011

**A Strong Arctic Cold Front Will Move Through Deep South Texas on Tuesday**

February 2, 2011

**Deep Arctic Air Entrenched Across Texas**

# ERCOT's Pre-Event Preparation

**Jan 28-31: Transmission outages – cancelled, withdrawn or delayed**

10-345 kV lines  
27-138 kV lines  
3-69 kV lines  
2-345/138 kV autotransformer  
1-138/69 kV autotransformer

**Jan 31 at 6:30am:**

Operating Condition Notice issued, “A cold front is approaching with temperatures anticipated to be in mid to low 18 degree range and maximum temperature expected to remain near or below freezing impacting 50% of more of major metropolitan areas. Estimated starting time Tuesday 2/1/11 09:00”.

**Feb 1 at 4:00pm:**

13 Generating Resources were committed in the Reliability Unit Commitment process.

JAN 28

FEB 1

**Jan 31 at 4:25am:**

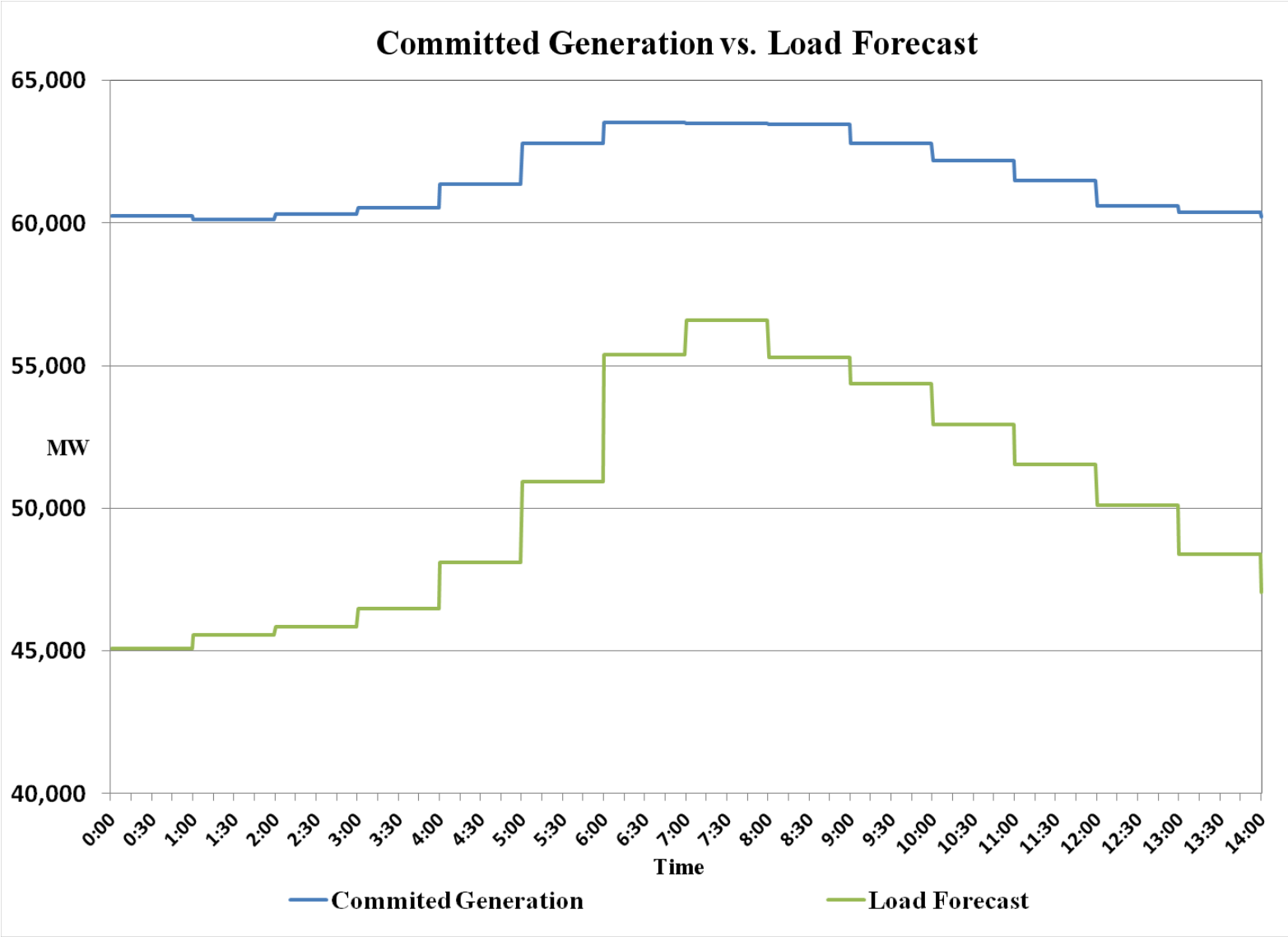
Requested MCSES 8 to be on-line by 10:00 on Feb 1; this generator has a long start-up lead time.

**Jan 31 at 10:30am:**

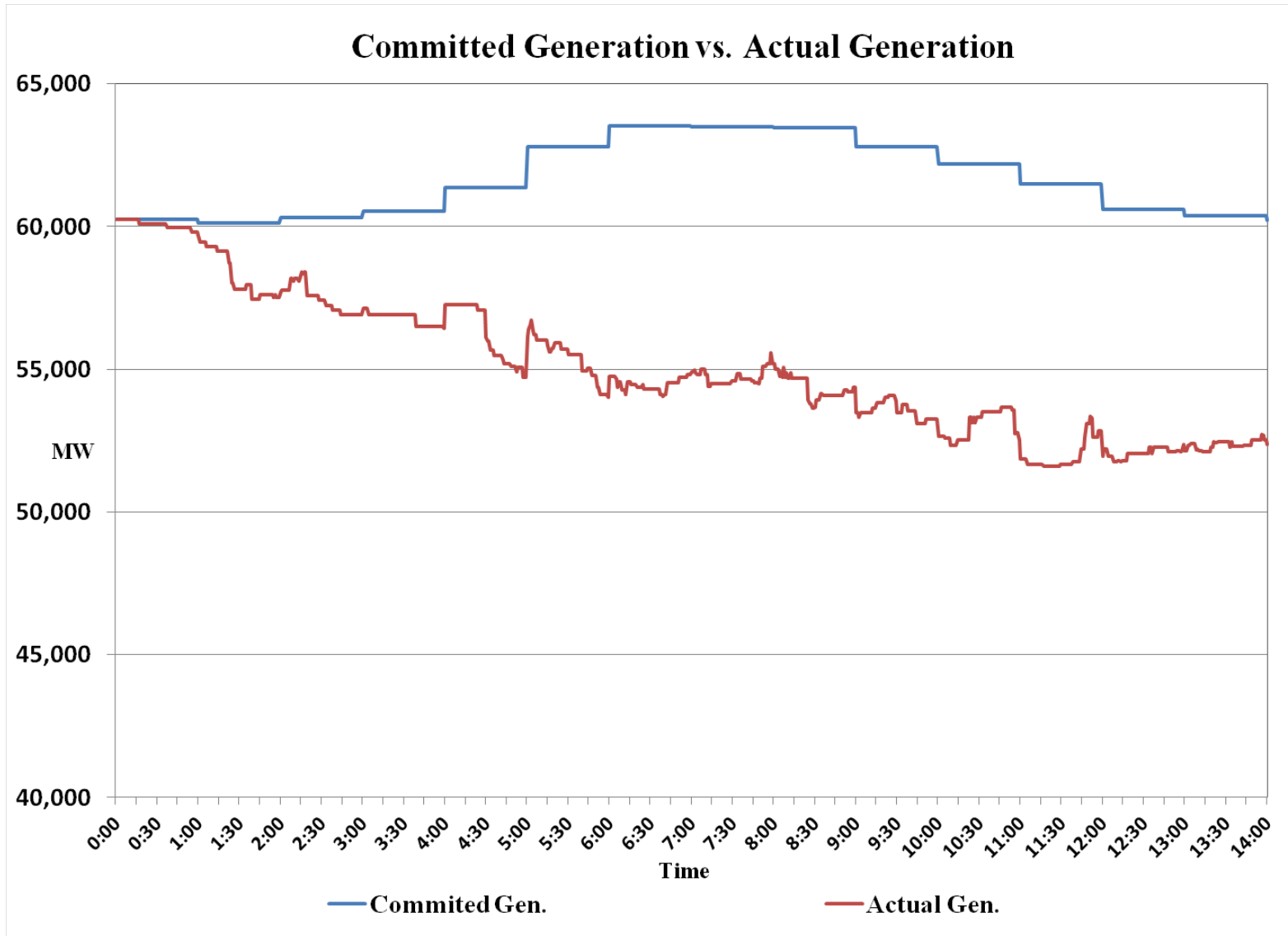
Requested LHSES 1 on-line burning oil.

**Feb 1 at 09:05am:**

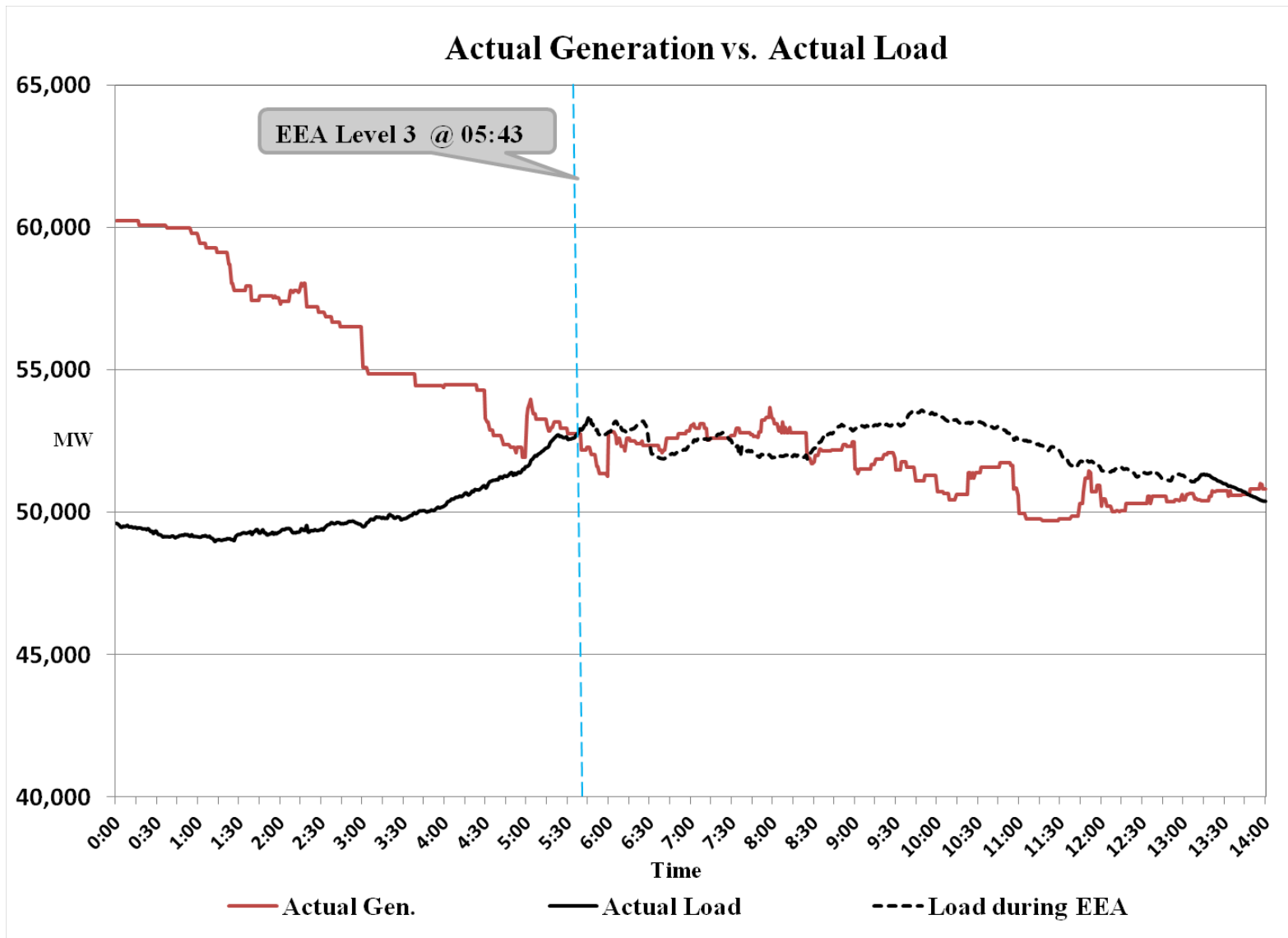
Advisory issued, expecting temperatures in teens to low 20F; maximum temperatures near or below freezing impacting 50% or more of major metro areas.



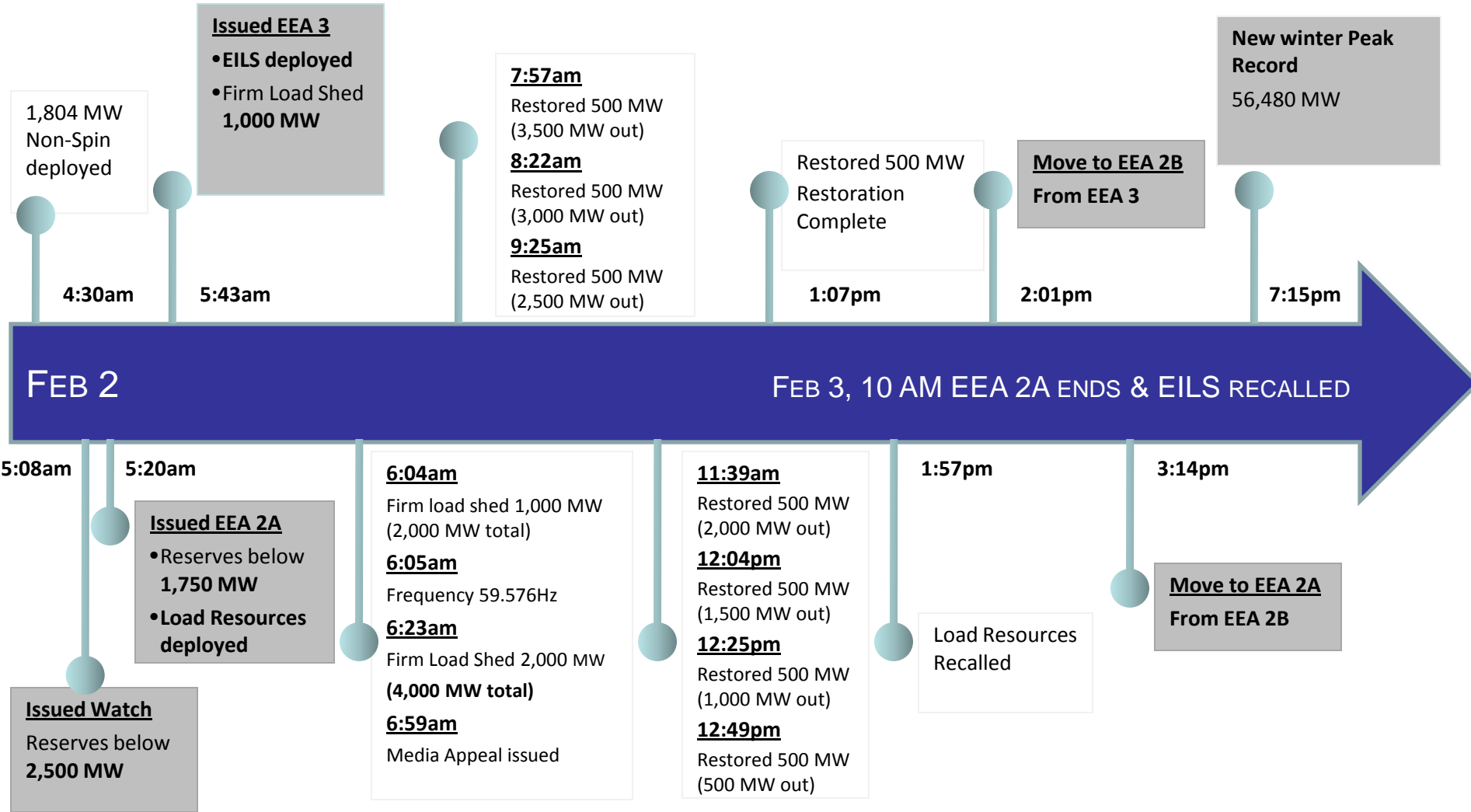
# More than 8,000 megawatts (MW) of generation unexpectedly dropped offline overnight



# ERCOT implemented emergency procedures when available generation was no longer sufficient to serve the load



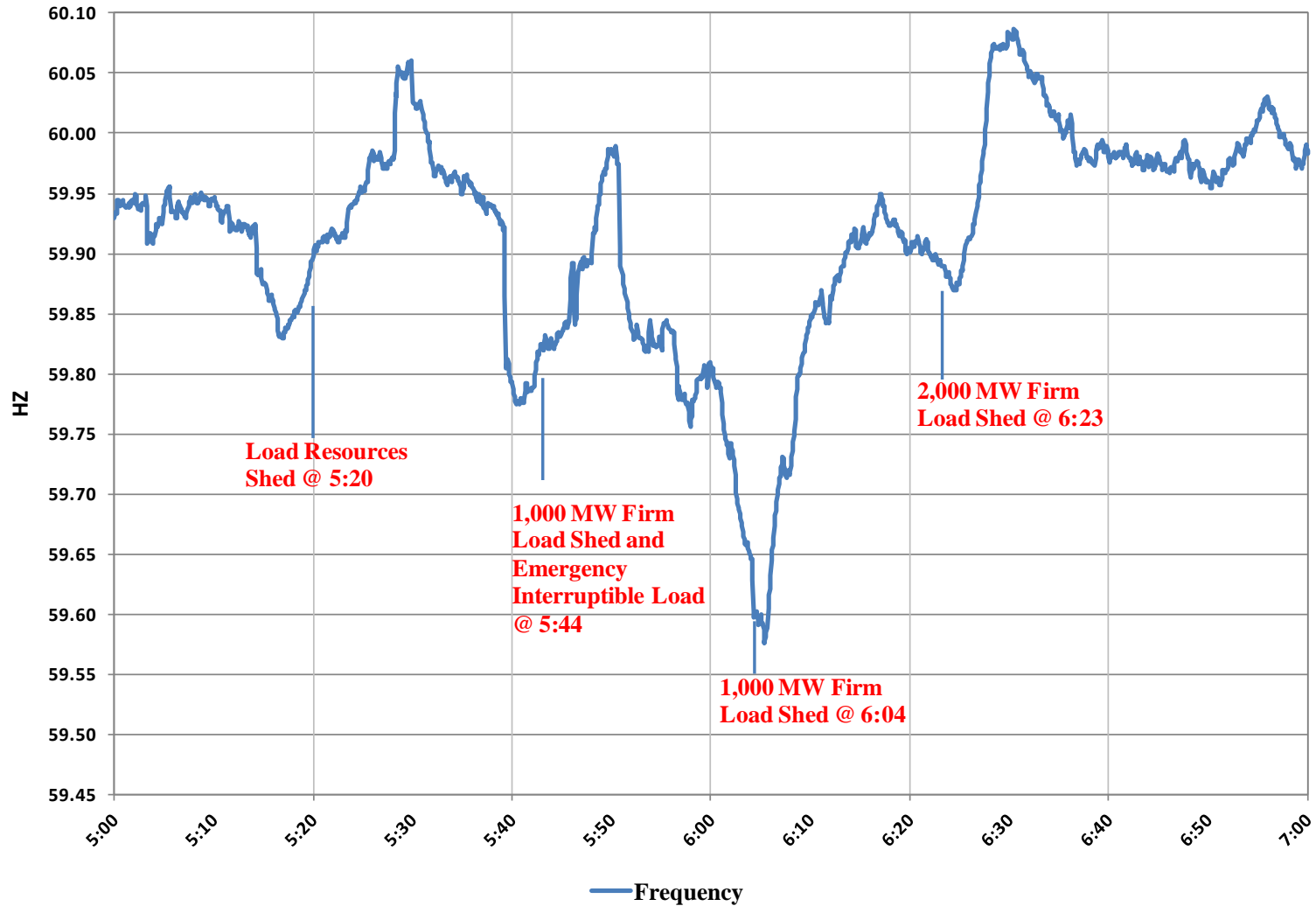
# A timeline of the emergency steps that were taken leading to rotating outages in ERCOT



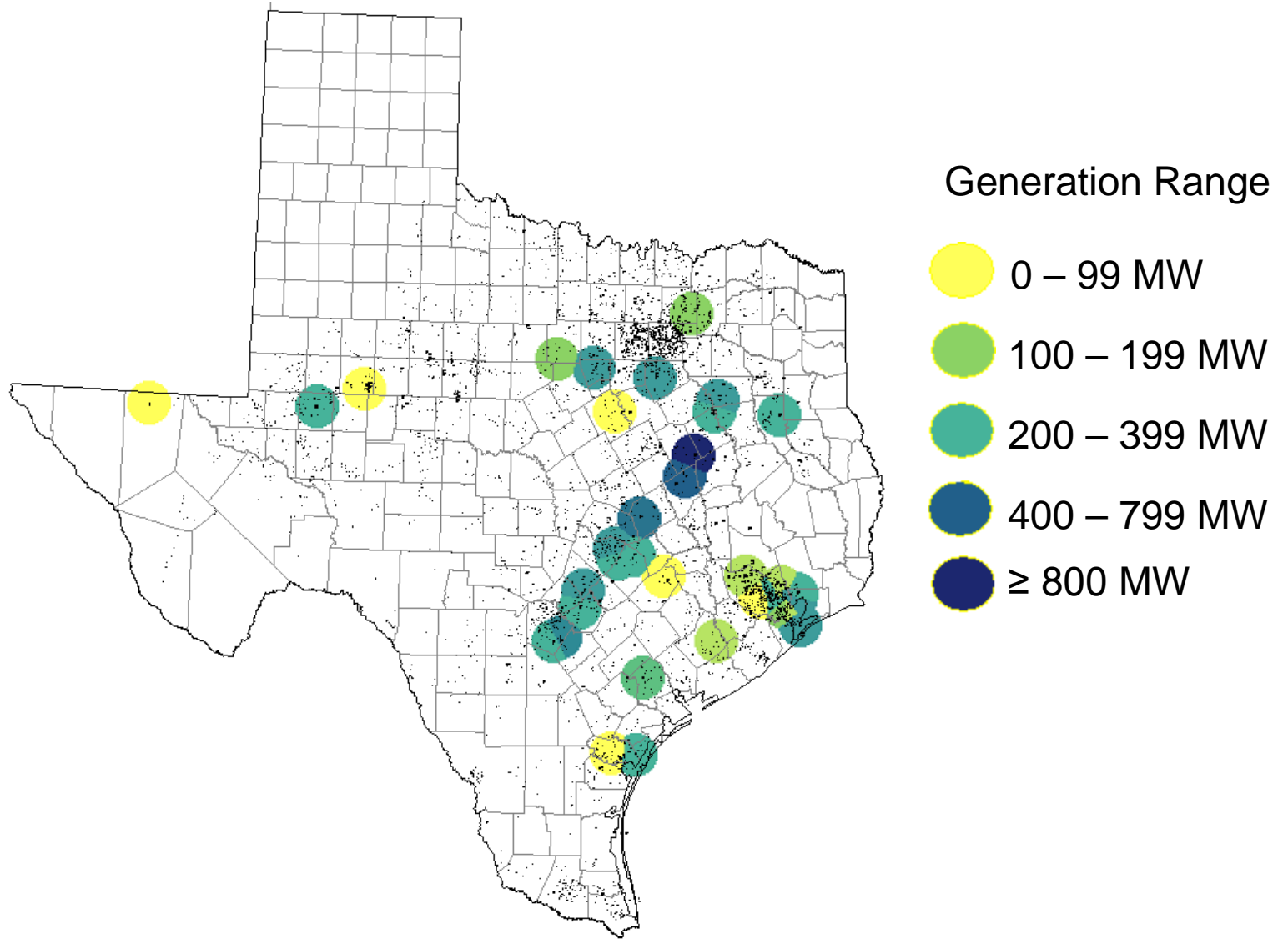


# The ERCOT System responded as expected

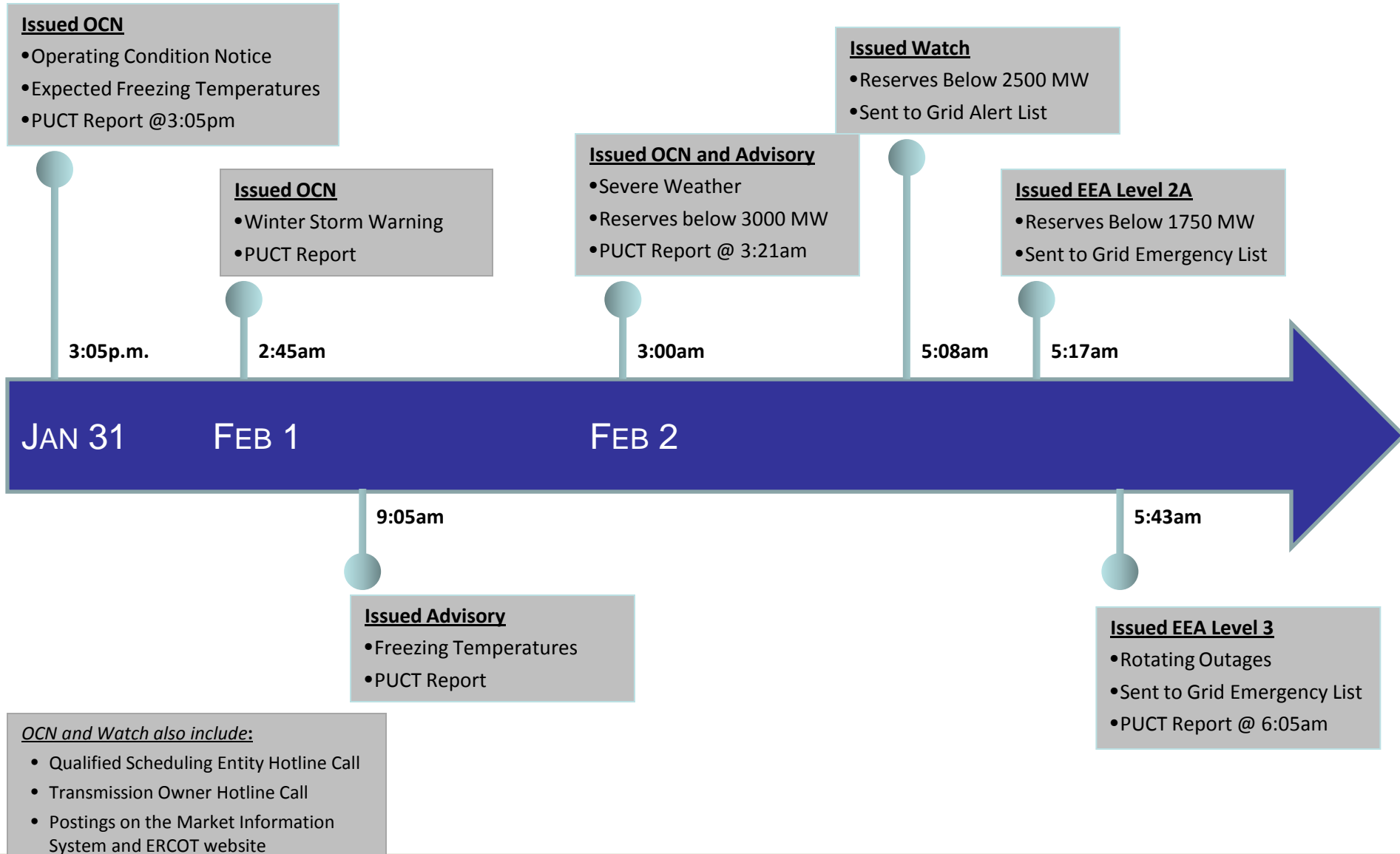
## Frequency vs. Load Shed



# The generation loss was system-wide and covered units of all ages and multiple types of fuel



# ERCOT experienced communications challenges due to the rapidly-unfolding events



- ERCOT was advised that some units could generate more power if additional natural gas became available to the unit or if generators could temporarily surpass air emissions limits.
- PUC and RRC Commissioners and Staff worked cooperatively to assess specific situations and work with industry on natural gas issues.
- PUC and TCEQ Commissioners and Staff worked with ERCOT to develop a plan for encouraging addition of available generation resources to the ERCOT electric grid.

**ERCOT will continue to review the actions leading up to this event and the handling of event itself.**

- ERCOT is providing information to assist in the investigations currently underway.
- ERCOT will be an active participant in the discussion related to the adequate weatherization of generation units.
- ERCOT will work with transmission providers to study the potential use of advanced meters in selective load reduction.
- ERCOT is reviewing all communications policies related to grid emergencies.
  - ERCOT has already implemented changes that will provide automated notice to the State Operations Center (SOC) and the PUC.
  - ERCOT will implement a “phone bank” that will temporarily increase staff during emergency situations to respond to incoming calls.