



EXTREME WEATHER PREPARATIONS

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National Association of Regulatory Utility Commissioners
February 5, 2012

ERCOT OVERVIEW

The Texas Legislature restructured the Texas electric market in 1999 by unbundling the investor-owned utilities and creating retail customer choice in those areas, and assigned ERCOT four primary responsibilities:

- System reliability – planning and operations
- Open access to transmission
- Retail switching process for customer choice
- Wholesale market settlement for electricity production and delivery.



- 75% of Texas land
- 85% of Texas load
- More than 40,000 miles of transmission lines
- 550+ generation units
- 68,379 MW peak demand (set August 3, 2011)
- Physical assets are owned by transmission providers and generators

2011 WAS A RECORD SETTING YEAR

New Peak Demand Record: 68,379 megawatts

- 68,379 megawatts (MW), Aug. 3, 2011
- The 2010 peak demand – 65,776 MW, Aug. 23, 2010 – was broken 3 consecutive days:
 - Aug. 1, 2011 66,867 MW
 - Aug. 2, 2011 67,929 MW
 - Aug. 3, 2011 68,379 MW

New Weekend Record

- 65,159 MW, Sunday, Aug. 28
 - 5 percent increase over 2010 previous record – 62,320 MW

Winter Peak Record

- 57,282 MW (February 10, 2011)
 - 3 percent increase over 2010 previous record - 55,878 MW

Wind Record

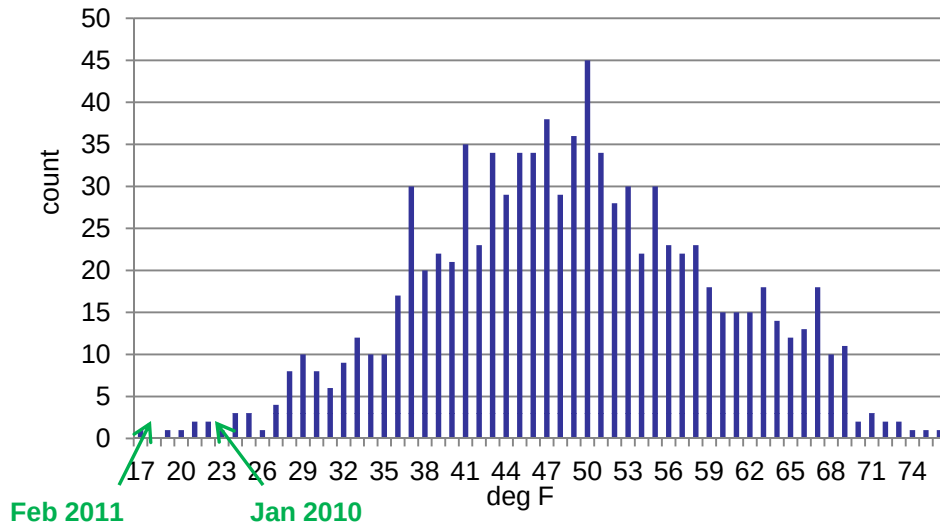
- A new wind record of 7,400 MW occurred on Oct. 7, 2011 at 15:06. This instantaneous value surpassed the previous value of 7,355 MW from June 19, 2011.
 - Wind was supplying 15.18% of the 48,733 MW load

EXTREME WEATHER IN TEXAS

- Extreme cold weather – February 2011
- Extreme hot weather – Summer 2011
- Extreme drought conditions – 2010, 2011, 2012(?)

AVERAGE DAILY TEMPERATURES - JANUARY & FEBRUARY, 1996 THRU FEB 2, 2011

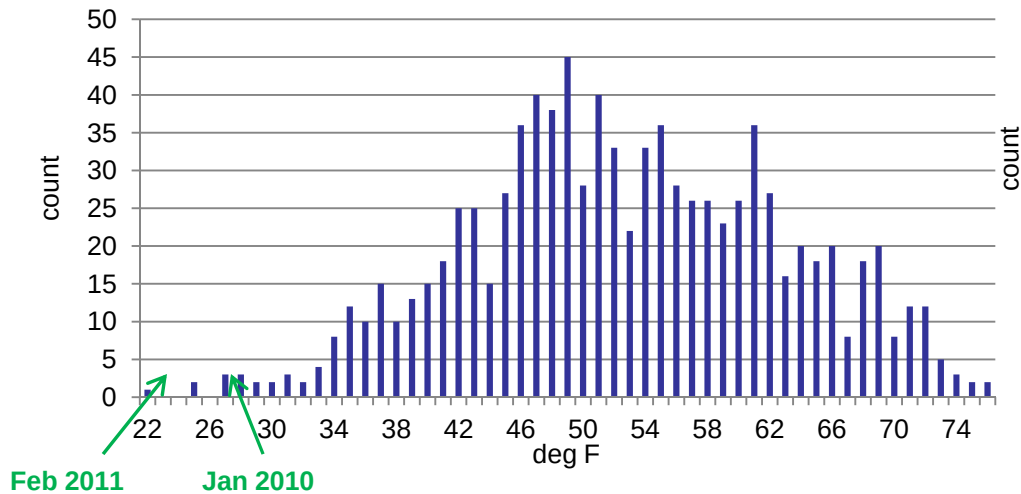
Dallas



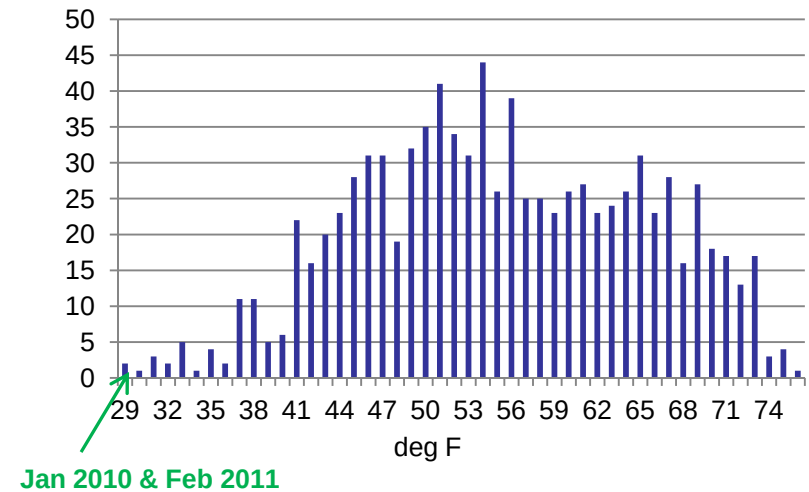
ERCOT Winter Peak Day

	<u>2010</u>		<u>2011</u>	
	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>
Austin	15°F	35°F	18°F	28°F
Dallas	16°F	30°F	13°F	20°F
Houston	25°F	32°F	21°F	37°F

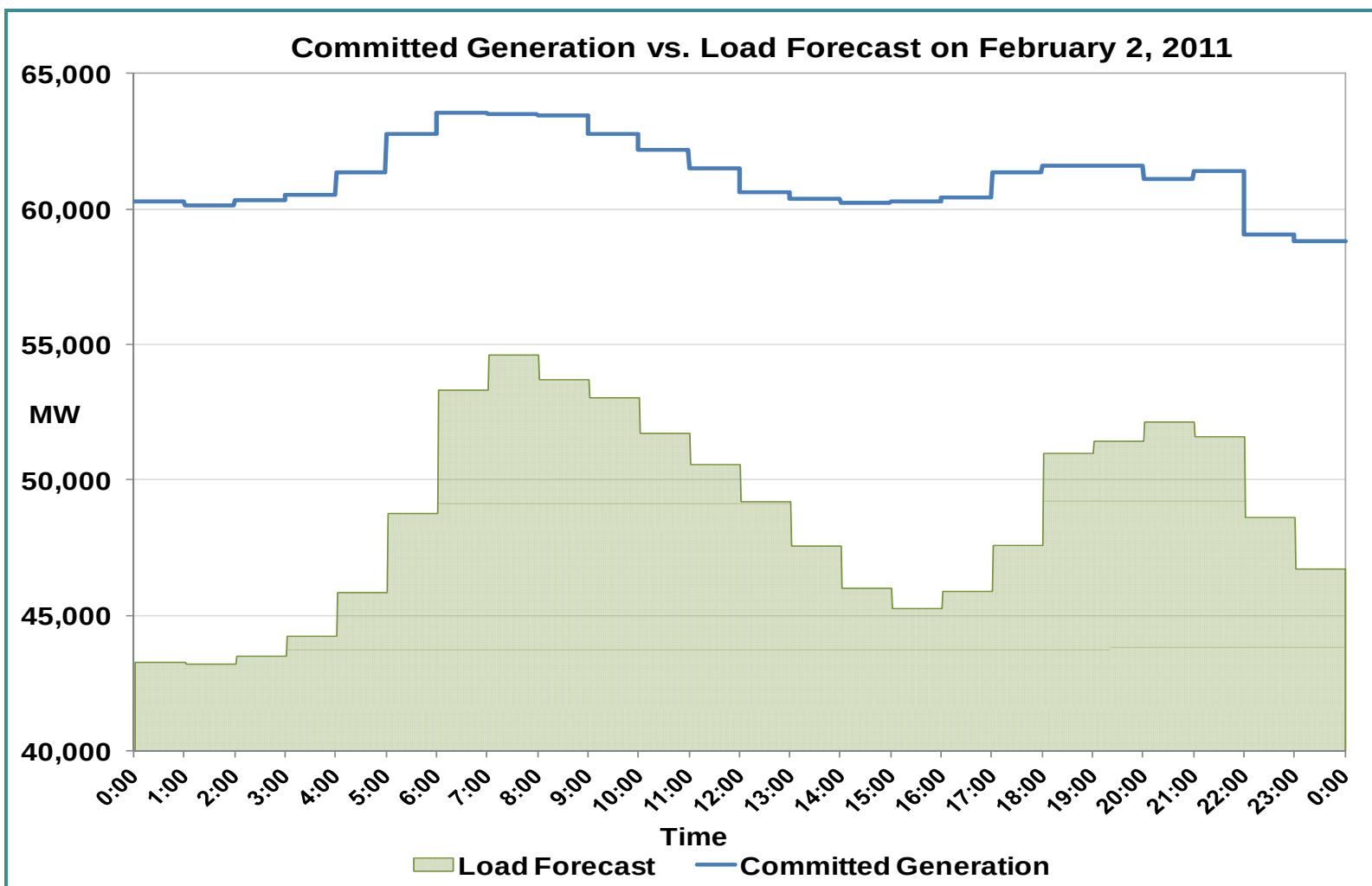
Austin



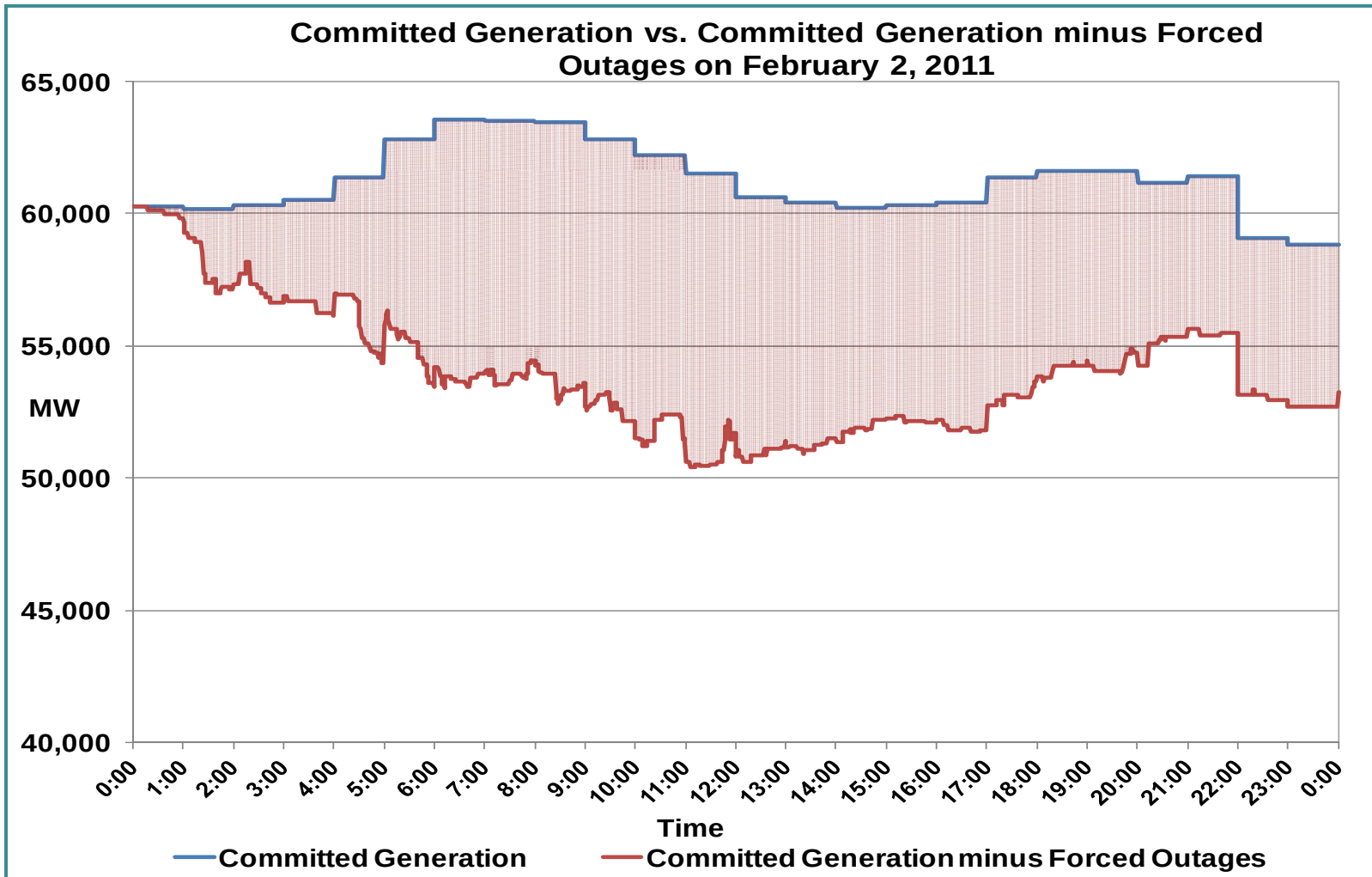
Houston



ERCOT PREPARATIONS



MORE THAN 8,000 MW OF GENERATION UNEXPECTEDLY DROPPED OFFLINE OVERNIGHT



COMMUNICATIONS IMPROVEMENTS

- The process to notify the State Operations Center (SOC) and the Public Utility Commission (PUC) of entry into emergency grid situations is automated and direct.
- Utilizing Twitter and Facebook for outreach during grid emergencies as well as to disseminate useful resource information throughout the year.
- Implemented a phone bank during grid emergencies to ensure the public, media, market participants and others can get information related to a grid emergency in a timely manner.
- Changes to the media response policy to include real-time interviews with radio/TV during grid emergencies.
- Additions to www.ercot.com, including real-time grid information on the homepage, so that audiences can keep themselves apprised of the grid's status easily

FEBRUARY 2, 2011 – OTHER LESSONS LEARNED

Generation

- Enhanced staffing and management staffing 24X7 during winter weather events
- Ensure adequate quantities of winter weather commodities and equipment
- Freeze protection guidelines and design criteria must be implemented consistently
- Develop plant specific emergency operating plans for winter weather
- Operator and maintenance training must support winter weather guidelines
- Monitor heat tracing on critical lines and pipes throughout winter weather events
- Install secondary wind barriers as deemed appropriate to protect critical instrument cabinets, heat tracing and sensing lines
- Monitor instrument air dew points year-round to ensure air is moisture free
- Be prepared for impact of low lake temperatures on fish

FEBRUARY 2, 2011 – OTHER LESSONS LEARNED

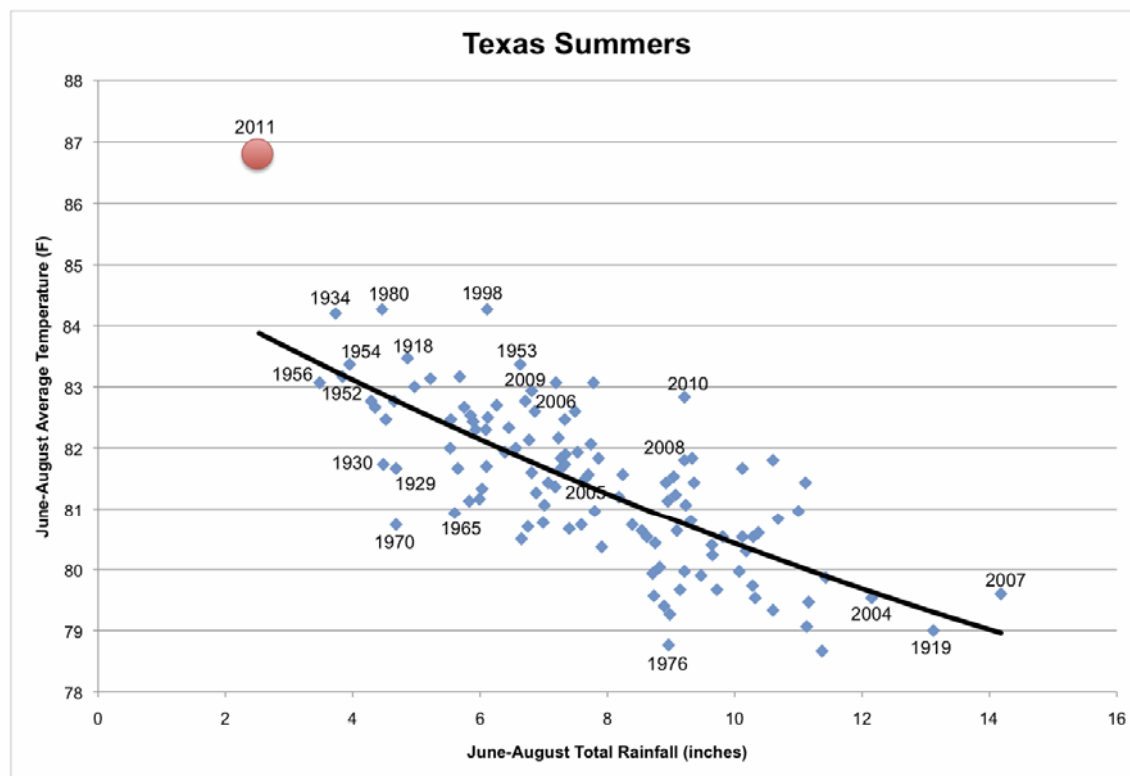
ERCOT Inc.

- Improve coordination and reporting of generation outages
- More frequent updates on generation situation with Transmission Operators
- Audit generator readiness for extreme conditions
- Periodic demonstration of fuel switching capabilities
- Ensure performance of black start resources during extreme conditions
- Coordination of Gas & Electric operational impacts
 - Analysis of gas availability to electric generation under extreme conditions
 - Coordination with Railroad and Public Utility Commission Staff

Transmission & Distribution

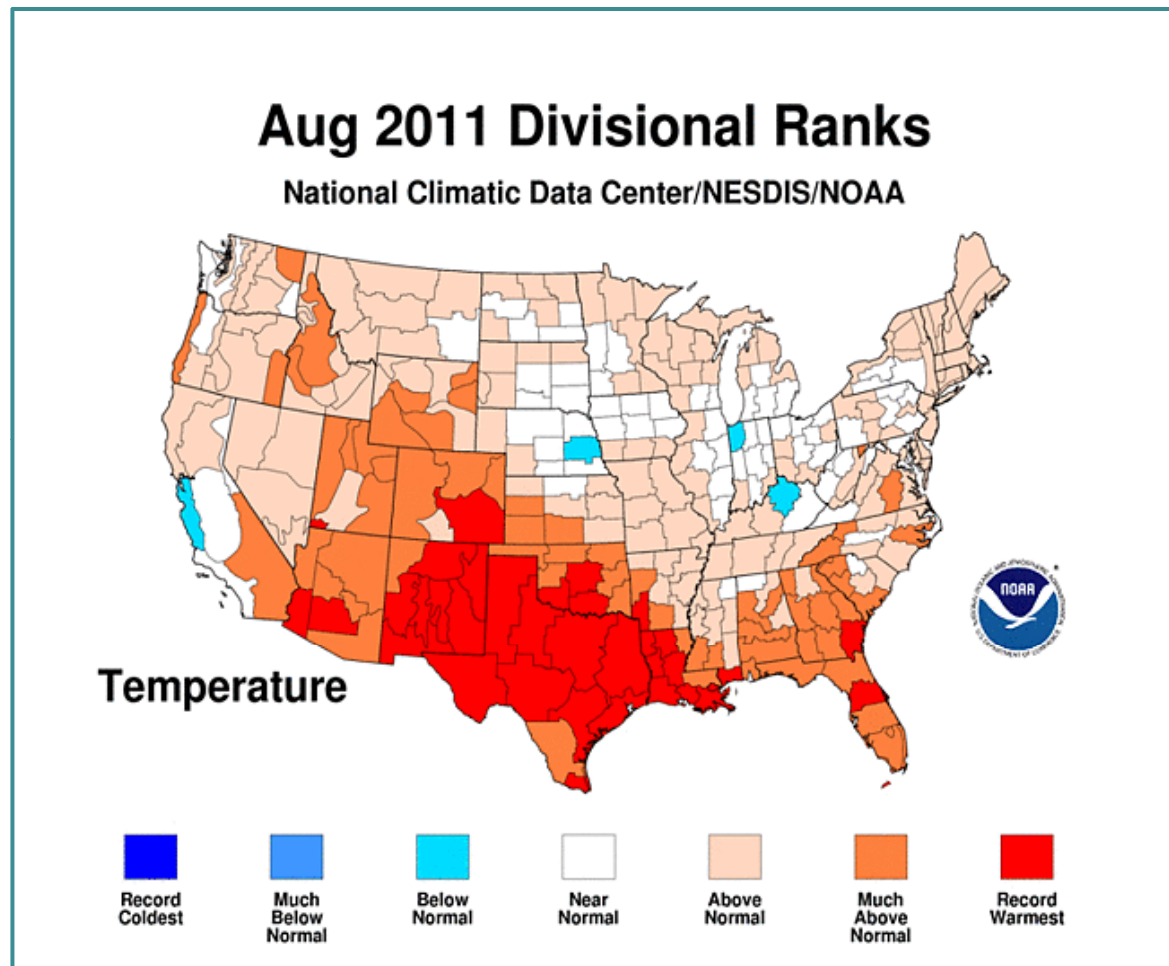
- Load shed plans should consider those loads that support electric generation facilities, gas wellheads and gas pipeline compression

TEXAS SUMMERS (1895 – 2011)



Source: John Nielsen-Gammon, Texas State Climatologist

THE 2011 TEXAS DROUGHT



Texas statewide tree-ring records dating back to 1550 indicate that the summer 2011 drought in Texas is matched by only one summer (1789)

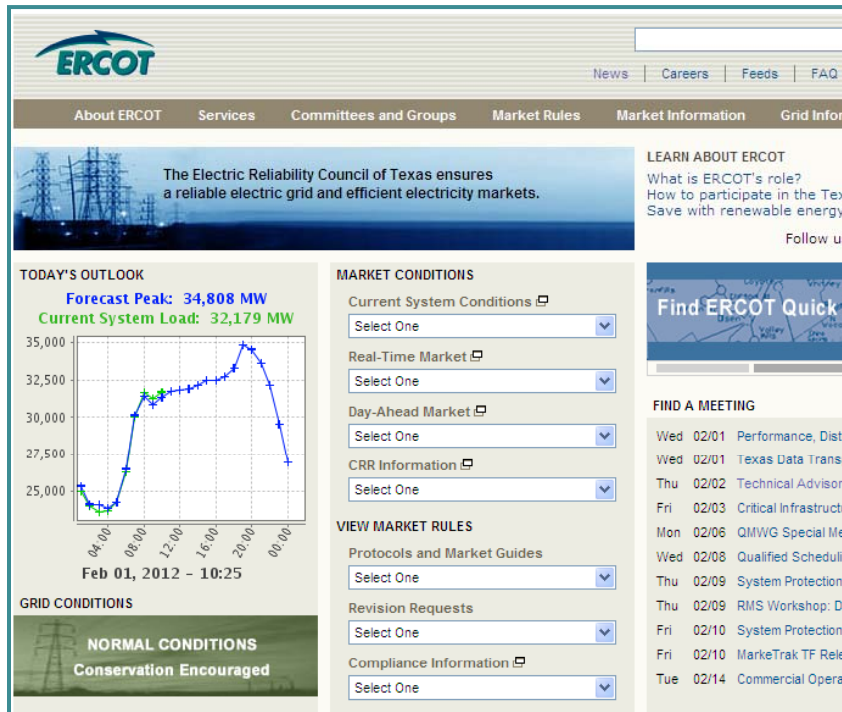
T & D ACTIONS TO MANAGE DROUGHT IMPACT

- Daytime corona camera inspections
- Proactive energized and de-energized insulator washing program
- Insulators designed for heavy salt contamination
- Travelling wave based fault location
- Transmission line insulator leakage current monitoring system (R&D stage)
- Be alert to wildfire potential

ERCOT ACTIONS TO MANAGE DROUGHT IMPACT

- Surveyed generation entities in the state and reviewed drought concerns and possible mitigations
- Identified water resources used by electric generation that are at historically low levels
- Reviewed public sources regarding state and regional water plans
- Coordinated plans and activities with Texas Commission on Environmental Quality and State drought response teams
- Working with generation and transmission entities to conduct a workshop on 27 February 2012 to share best practices relevant to drought conditions

CONSERVATION MESSAGES – ERCOT & PUCT



POWER WATCH
Conservation Needed

POWER WARNING
Conservation Critical
Risk of Rotating Outages

POWER EMERGENCY
Rotating Outages in Progress
Conservation Critical



Commissioners

- » Donna L. Nelson Chairman
- » Kenneth W. Anderson, Jr. Commissioner
- » Rolando Pablos Commissioner

Agency Information

- » File an Informal Complaint
- » Assistance Paying Your Bill
- » Open Meetings
- » Procurement
- » Join Our Team
- » PUC News Feeds

Conservation Alerts

Normal Conditions



Watch here for important updates.

Conservation Needed Power Watch

On YELLOW days, extra conservation measures are urged during the peak usage hours. A YELLOW Alert will be declared for extremely hot, leading to record or near-record electricity demand and unexpected power plant outages can expected or actual declaration of Level 1 of ERCOT's Energy additional generation. An inability to obtain additional generation deployment of interruptible loads such as large industrial use as much as possible during the peak electricity usage hours.

- Turn off all unnecessary lights, appliances, and electronics
- When at home, close blinds and drapes that get direct fans in occupied rooms to make it feel cooler.
- When away from home, set air conditioning thermostats closing blinds or drapes on windows that will get direct
- Do not use your dishwasher, laundry equipment, hair curlers
- hours of 3 p.m. to 7 p.m.
- Avoid opening refrigerators or freezers more than necessary
- Cook in the microwave instead of the electric range
- Set your pool pump to run in the early morning or late afternoon
- Check out other no- or low-cost conservation tips and by clicking on the links to the right.
- Go to www.powertochoose.org to see if you can save choice of electric provider does not affect the reliability, the time it will take to have your electric service restored.

Conservation Critical Power Warning

On RED days, conservation is critical to avoid Electricity Emergency blackouts. Red alerts are declared when all interruptible loads usage as much as possible to avoid outages. During a RED Alert (EEA) which includes the deployment of emergency in

PLUS

- News release
- Automated emergency notification message to major media