



TDU Curtailment Procedures and Service Restoration Priorities Plan - PUC Workshop

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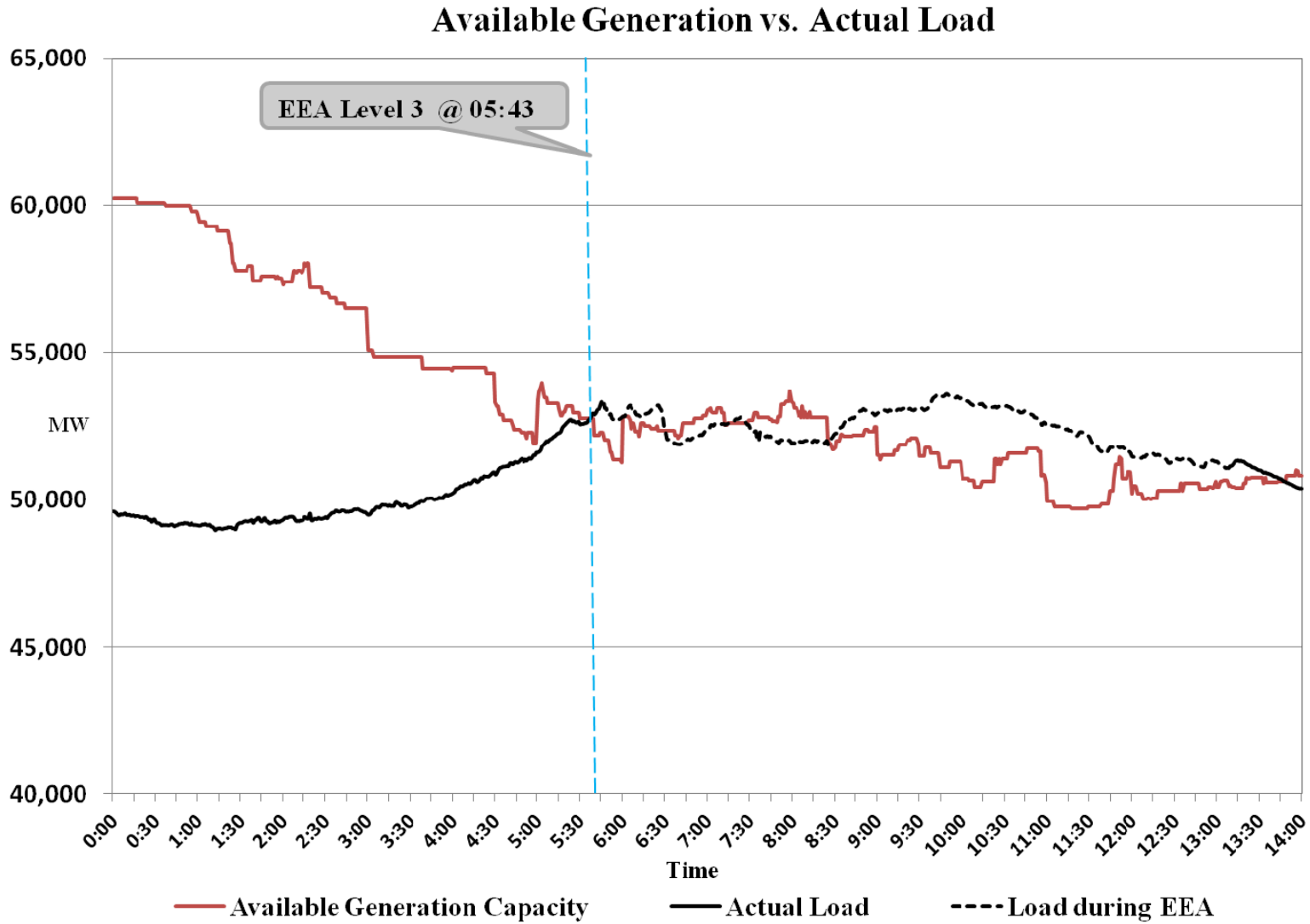
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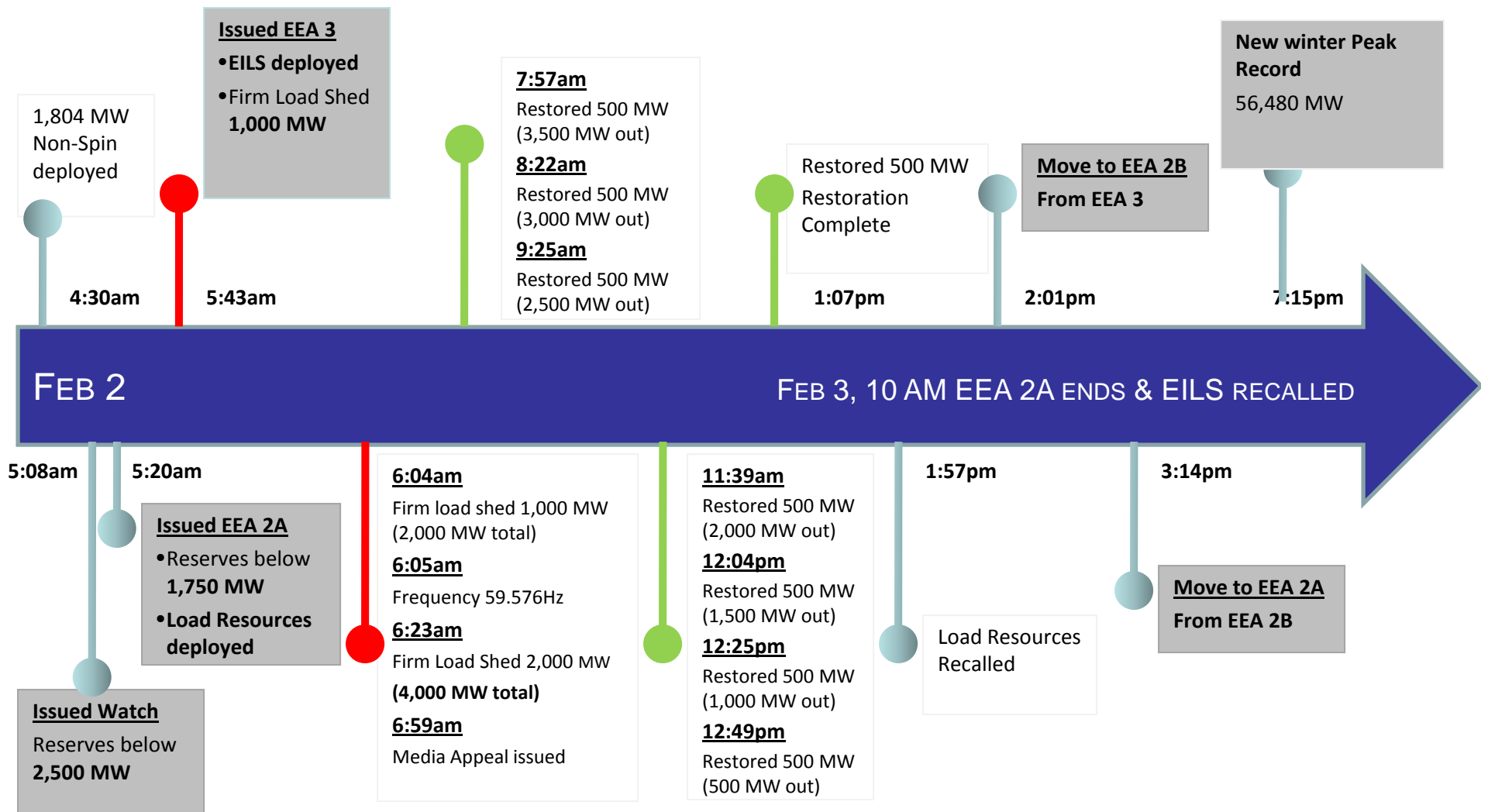


February 2, 2011 Load Shed Event

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

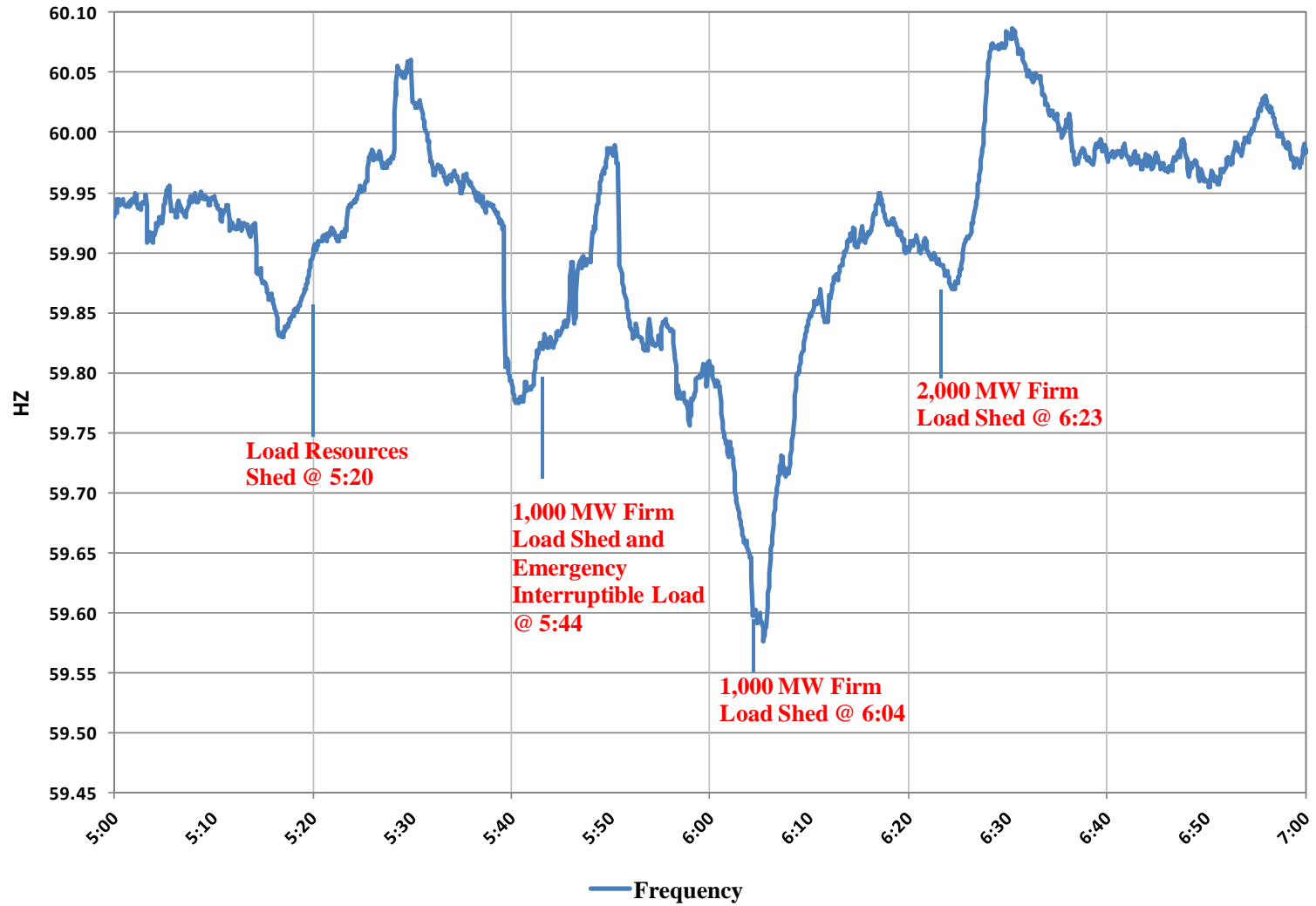


A timeline of the emergency steps that were taken leading to rotating outages in ERCOT



The ERCOT System responded as expected

Frequency vs. Load Shed





Execution of Energy Emergency Alert (EEA) Plan

An orderly plan to reduce load during a shortage of generation

- Procedures for reducing System Demand in emergency situations
- Provides for maximum possible continuity of service while maintaining the integrity of the ERCOT System
- Reduces the chance of cascading outages
- Outlines when and how demand (load) can be curtailed

EEA procedure in the ERCOT Protocols defined by levels

- 1** Maintain 2,300 MW of on-line reserves
- 2** Maintain 1,750 MW of on-line reserves. Interrupt loads providing Responsive Reserve Service. Interrupt loads providing Emergency Interruptible Load Service (EILS).
- 3** Maintain System frequency at or above 59.8 Hz and instruct TSPs and DSPs to shed firm load in rotating blocks.

Load Shed Responsibility by Transmission Operator

Transmission Operator	2010 Total Transmission Operator Load (MW)
American Electric Power	9.00
Austin Energy	3.96
Brazos Electric Power Cooperative	4.67
CenterPoint Energy	24.55
City of Bryan	0.61
City of College Station	0.31
City of Denton	0.51
City of Garland	0.76
CPS Energy	7.29
Greenville Electric Utility Service	0.18
Lower Colorado River Authority	5.47
Oncor	37.55
Public Utility Board of Brownsville	0.41
Rayburn Country Electric Cooperative	1.08
South Texas Electric Coop	1.28
Texas-New Mexico Power	2.37
ERCOT Total	100.00

Responsibility is based on the TO's load ratio share.

Megawatts ordered shed by each of the TOs per every 100 MW instructed by ERCOT

Location of specific load shed and rotation sequence is determined by the TO.

Energy Emergency Alert (EEA) Communications Matrix

Emergency Levels	Operating Reserves	Grid Operators' Actions	Automated Emergency Notifications	Follow-up Communications from External Affairs	Media/Public Notifications
Normal Conditions	Reserves > 3,000 MW	Normal operations			
Control Room Advisory	Reserves < 3,000 MW	Issue "Advisory" to utilities -- informational only -- no additional authority for operators' actions.	Public Utility Commission (PUC) and NERC regional entity (TRE) notified via grid report daily emails		
Control Room Watch	Reserves < 2,500 MW	Use quick-start capacity and non-spinning reserves (available within 30 minutes).	Automated Emergency Notification System phone call and email to PUC, the independent market monitor (IMM), TRE, and FERC	If potential emergency situation, additional information sent to the GridEmergency email list (SOC, PUC, OPC, Board, Govmt/Lege, IMM, TRE, FERC, and Market Participants' media contacts/PIOs)	
Energy Emergency Level 1 POWER WATCH - Conservation Needed (appeal optional if situation short- lived)	Reserves < 2,300 MW	Use capacity available from other grids (via asynchronous connections; 500 MW on average) and dispatch all available units.	Above plus State Operations Center (notifies city, county officials & law enforcement), Office of Public Utility Counsel, govmt/lege staff and ERCOT Board	Notify GridEmergency list with additional information	News release, if appropriate; Twitter and Facebook
Energy Emergency Level 2 POWER WARNING - Conservation Critical	Reserves < 1,750 MW	Deploy demand response resources: Load Resources under contract (1,000 MW on average) and/or Emergency Interruptible Load Service (400-500 MW on average), in either order. Begin block load transfers of load to other grids if appropriate.	Above plus major news services and media contacts for utilities	Same as above	News release, if appropriate; Twitter and Facebook
Energy Emergency Level 3 POWER EMERGENCY - Rotating Outages	Reserves continuing to trend downward or frequency at or below 59.8 Hz	Instruct transmission operators to implement rotating outages. Areas affected are at the discretion of the utilities.	Same as above	Same as above	News release; Twitter and Facebook