



IMPACT OF DROUGHT CONDITIONS ON ELECTRIC GENERATION

**SENATE BUSINESS & COMMERCE COMMITTEE HEARING
JANUARY 10, 2012**

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WINTER SARA* & DECEMBER UPDATE OF CDR*

SARA (Winter 2011-12)

Simultaneous extreme weather, extreme planned outages & extreme forced outages

- SARA concepts based on discussions with GATF* & RPG*
- Facilitates understanding of near-term risks
- Normal Conditions – No concerns
- Extreme Conditions – Potential for outages
- Monitoring drought impact on reserves

December Update of CDR (2012-22)

- 5% reduction in reserves for 2012 & 2013
- Significant reserve shortages in 2014 and beyond
- Requires definitive actions to address supply shortfalls
- Demand Response initiatives become progressively more attractive

1% due to increased Load
4% due to reduced Resources

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SARA – Seasonal Assessment of Resource Adequacy
CDR – Capacity Demand & Reserves
GATF – Generation Adequacy Task Force
RPG – Resource Planning Group

ERCOT ACTIONS TO MANAGE DROUGHT IMPACT

- Surveyed generation entities in the state and reviewed drought concerns and possible mitigations
- Identified surface water most impacted and projected impacts to generation for 2012
- Reviewed public sources regarding state and regional water plans
- Met with TCEQ staff and drought response teams
- Working with generation and transmission entities to conduct a workshop in February 2012 to share best practices relevant to drought conditions

2012 DROUGHT IMPACT ASSESSMENT

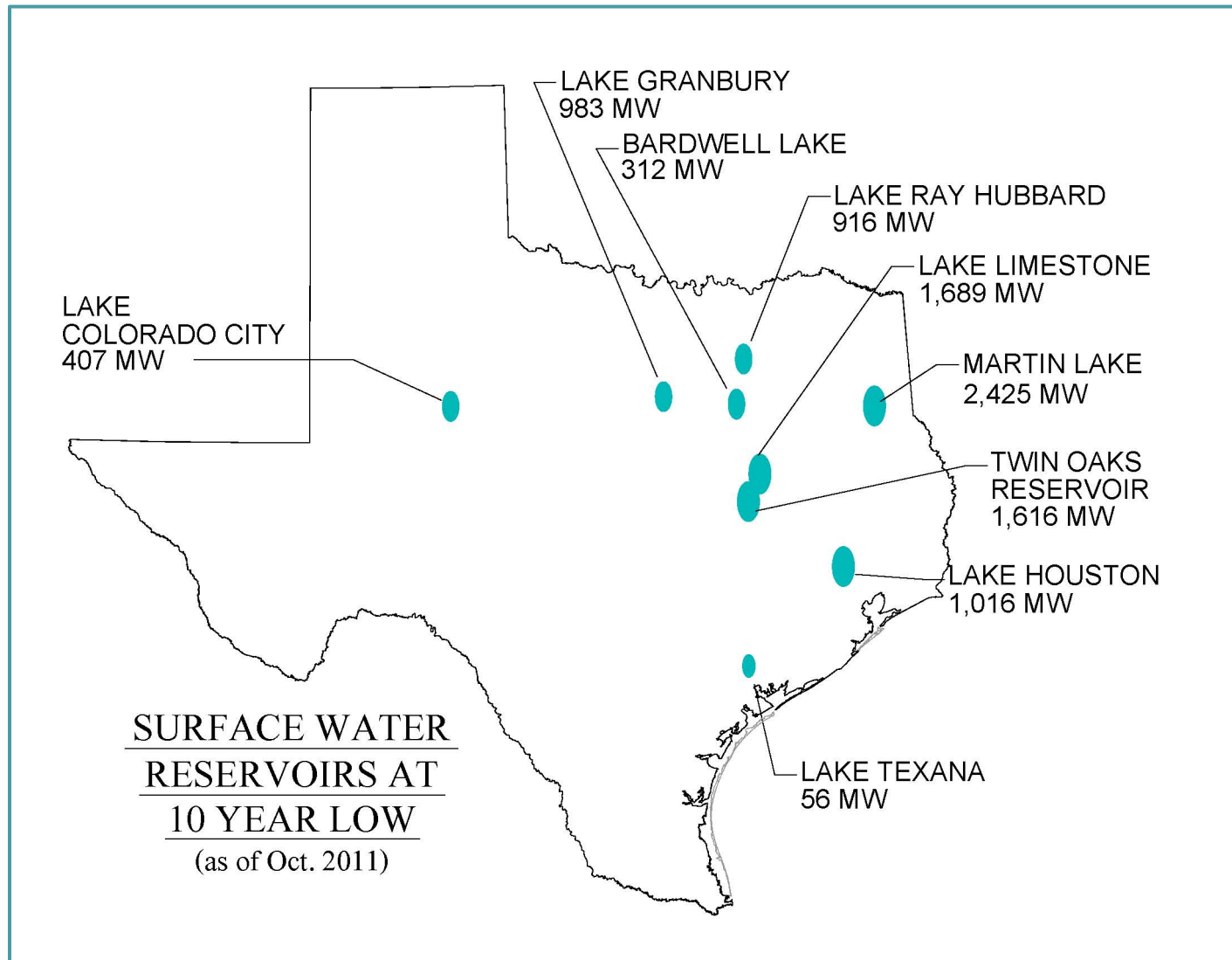
Completed Assessment

- Identified water sources used by electric generation that are at historically low levels
- Estimated the risk to electric generation by comparing minimum intake level with projected minimum level of water source

Assessment In Progress

- Surveying all thermal generation facilities regarding water use conditions so that other potential risks are identified
- Analyze survey results, identify risks, develop and implement applicable mitigating actions

SURFACE WATER SUPPLIES AT 10 YEAR LOWS (OCT 2011)



MANAGING DROUGHT IMPACT – GENERATION SECTOR ACTIONS INCLUDE ...

- Generators are designed to
 - Conserve – minimize water usage
 - Reuse – Reuse water from one process for another
 - Recycle – Return clean water to the source after usage
- Generators regularly account for all water withdrawn to regulatory authorities
- Many generators utilize salt water or effluent, where practical
- Generators regularly maintain equipment to avoid water leakage/wastage
- A couple of generators have installed pipelines to access accumulated (from rain & seepage) water at mine sites
- Most generators recycle a majority of withdrawals back into the watershed for reuse
- Some generator resources are re-engineering their water intake structures to allow for deeper intake level conditions

MANAGING DROUGHT IMPACT – TRANSMISSION SECTOR CONCERNS INCLUDE ...

- Increased insulator contamination incidents (salt, smoke, bird excrement, etc.)
- Fires, smoke implications, vegetation management, and risks to wooden h-frame infrastructure
- Potential issues associated with transmission system planning if there are significant generator de-ratings
- Coordination with the local authorities (police, fire, etc.) requesting de-energizing of transmission facilities for safety to allow for aerial firefighting.

CONCLUSIONS

- Persistent drought conditions are impacting electric generation resources, but are unlikely to cause significant generation shortfalls in 2012
- If the drought continues into 2013, consequences to electric generation availability are likely to become more severe
- ERCOT will continue to analyze survey results and will continue to keep regulatory authorities well-informed
- In February 2012, ERCOT will host an open drought workshop with generation and transmission entities to coordinate “best practices” in the electric sector