IMPACT OF DROUGHT CONDITIONS ON ELECTRIC GENERATION

SENATE BUSINESS & COMMERCE COMMITTEE HEARING
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WINTER SARA* & DECEMBER UPDATE OF CDR*

SARA (Winter 2011-12)

- 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
  - 1% due to increased Load
  - 4% due to reduced Resources
- Significant reserve shortages in 2014 and beyond
- Requires definitive actions to address supply shortfalls
- Demand Response initiatives become progressively more attractive

* 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)

SURFACE WATER RESERVOIRS AT 10 YEAR LOW
(as of 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- Generators regularly account for all water withdrawn to regulatory authorities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-rations
- 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