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**SOUTHWESTERN
POWER
ADMINISTRATION**

Frequently Asked Questions – Lake Texoma Hydropower Generation

Question. Why is Southwestern generating at Lake Texoma when the lake is so low?

Answer. Southwestern is generating only a minimal amount to meet short-term peaking and critical power needs. The year 2013 marked the lowest generation year in the 70 year history of Lake Texoma and Denison Dam. The year 2011 was the second lowest. In fact, SWPA has been operating in drought mode since January 2011, generating only 25% of average. Since May 2012, generation has been even less, about 19% of average.

Question. What gives Southwestern the right to generate at all?

Answer. Southwestern is one of two project users which pay into the U.S. Treasury for water storage in Lake Texoma. The other is Municipal & Industrial (M&I) water supply. As an authorized user of the project with designated water storage, Southwestern has the right to use the water storage for which it has paid. That said, however, Southwestern and its customers have voluntarily reduced generation to save storage during the drought responsible for the low Lake Texoma elevations.

Question. Who are Southwestern's customers at Denison?

Answer. The entire output of the project is marketed to Rayburn Country Electric Cooperative and Tex-La Electric Cooperative, both of which are not-for-profit rural electric cooperatives serving electrical load mainly in the Electric Reliability Council of Texas (ERCOT) region.

Question. What is ERCOT?

Answer. ERCOT is one of nine Independent System Operators (ISO) in the United States. As the ISO for most of Texas, ERCOT dispatches power on an electric grid that connects 40,500 miles of transmission lines and more than 550 generation units. ERCOT also oversees an electricity market where it performs financial settlements for the competitive wholesale bulk-power transactions and administers retail switching for 6.7 million premises in competitive choice areas.

ERCOT is also an "Interconnection" according to the North American Electric Reliability Corporation (NERC). It is known as the ERCOT Interconnection and is sometimes called the Texas or Texan Interconnection. The other two Interconnections within the contiguous United States are the Eastern Interconnection and the Western Interconnection. The three Interconnections operate independently of each other, with electric utilities within each electrically tied together during normal system conditions and operating at a synchronized frequency at an average of 60 Hz. Electricity cannot be imported and exported between the Interconnections without synchronizing the oscillations of the alternating current waves, which typically requires an Alternating Current to Direct Current to Alternating Current tie (DC Tie).

Question. What is the relationship between Lake Texoma and ERCOT?

Answer. Power and energy generated at Lake Texoma and Denison Dam are delivered into the ERCOT Interconnection.

Frequently Asked Questions – Lake Texoma Hydropower Generation

Question. Why can't the Rayburn Country and Tex-La Electric Cooperatives just buy electricity from somewhere else when Lake Texoma is low?

Answer. They generally have been doing just that the last couple of years. In 2013, they spent \$5,000,000 to replace the additional electricity normally generated out of Lake Texoma and Denison Dam so that storage could be preserved. There are also price considerations. Typically, mild fall weather results in less electricity demand. In the fall of 2013, however, the ERCOT North Hub, where Rayburn Country and Tex-La's electrical load and Denison Dam are located, experienced significant maintenance outages of transmission lines and generating units. These outages caused the price of electricity to spike to over \$1,000/megawatt-hour several times in September and October of 2013. Avoiding these kinds of costs makes good business sense for Rayburn Country and Tex-La. There may also be reliability reasons to generate. If called on by ERCOT to help in an energy emergency, Denison is required to generate.

Question. Why can't Southwestern use its other projects to supply the Rayburn Country and Tex-La Electric Cooperatives?

Answer. Denison is electrically isolated from Southwestern's main system, although it is financially integrated from a rate-making perspective. The differences between the Eastern Interconnection and the ERCOT Interconnection make it impossible to move electricity back and forth without an expensive converter facility. Additionally, all capacity from the main system is already contractually obligated, so it would not be available to the Denison customers.

Question. Wouldn't the flexibility gained from being able to move electricity back and forth between Interconnections make the cost of converter equipment worth it?

Answer. Possibly. There are many stakeholders when it comes to moving electricity between the Eastern Interconnection and the ERCOT Interconnection. It may turn out that such a project is now viable, but a major study would be necessary. A previous study of a DC Tie between the two systems located near Denison showed the proposed project was not economically feasible.

Question. Why not just conduct a new study and find out if a DC-Tie is feasible?

Answer. Such a study would cost money that Southwestern has not been authorized by Congress to spend, and even if Congress did authorize money to be spent for the study, Southwestern would be resistant to expending funds that cause upward pressure on our customers' rates with no sound business need to do so.

Question. It has been reported that the turbines at the Denison powerhouse are being rehabilitated in the next few years. Does that mean that more water will be needed for generation?

Answer: Rehabilitation at Denison is expected to be complete by 2019. While the electrical capacity of each hydropower unit should increase, the efficiency of the power plant will also increase, meaning more electricity can be made with the same amount of water.

Question. Are funds from the local communities around Lake Texoma or the State of Oklahoma being used for the rehabilitation?

Answer: No. Funds in the amount of \$36,160,000 have been provided by a funding arrangement with Southwestern's customers and will be recovered in Southwestern's customers' rates. In fact, rehabilitations such as the one scheduled at Denison create local jobs and value in the local economy. For example, the ongoing rehabilitation at Ozark Dam in Ozark, Arkansas, is estimated to have had a positive economic impact of nearly \$4,000,000 per year since its start in 2008.