

Oklaunion Interconnecting grids



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Enable more efficient power exchanges and power flow control.

American Electric Power (AEP) has chosen ABB to replace a 30-year-old HVDC back-to-back converter station in the wind-energy rich state of Texas. The new converter station, which is a critical part of the Oklaunion HVDC transmission link between the Texas (ERCOT) and Oklahoma (SPP) power grids, enables more efficient power exchanges and power flow control at this essential power interconnection, enhancing both grid reliability and power stability.

The scope included engineering, supply, installation and commissioning of an HVDC back-to-back transmission system capable of delivering 220 MW of power in either direction. The new system has black-start capability, which enables fast grid restoration in the event of a power outage, allowing power to be used from the other end of the link.

This is an important feature as the converter station is an integral part of the Oklaunion HVDC transmission link - an asynchronous interconnection between the Texas (ERCOT) and Oklahoma (SPP) power grids.

Other key components as part of the turnkey solution included converter valves and ABB's MACH advanced control and protection system, which helps meet stringent system performance requirements. The replaced HVDC tie was originally built in 1984 by General Electric, and worked with a voltage of 82 kV with a transfer rate of 200 MW. It remained in operation during the construction of the new station in order to minimize the impact on customers of replacing the system.

The new station went into operation in 2014, after only 22 months delivery time.



Main data:

Commissioning year:	2014
Power rating:	220 MW
No. of poles	2
AC voltage:	Both sides: 345 kV
DC voltage:	± 31 kV
Type of link:	Back-to-back station
Main reason for choosing HVDC:	Interconnection of asynchronous networks.
Application:	Interconnecting grids