

## **Purpose and Need for AEP Uvalde-to-CPS Energy Project**

The American Electric Power Texas Central Company (AEP TCC) Western Region is bounded by Del Rio, Eagle Pass, and Laredo to the west and southwest and by Dilley, Uvalde, and Pearsall to the east and northeast. In the AEP TCC Western Region border area, which includes the towns of Del Rio, Eagle Pass, and Laredo, the area is experiencing approximately five percent annual load growth. The remaining Western Region is experiencing approximately two percent annual load growth. The Electric Reliability Council of Texas (ERCOT) determined that the current transmission system supporting the AEP TCC Western Region, including load and transmission facilities for Medina Electric Cooperative, Inc. (MEC), is not sufficient to meet the reliability needs of the area. Transmission planning studies indicate that numerous single contingency events cause thermal overloading of transmission facilities and unacceptable voltage levels in the area. ERCOT recommended several transmission projects in the area to improve reliability by relieving the overload and under-voltage problems of the transmission system. In addition, these improvements will increase the power transfer capability from generation located south and east of San Antonio to the moderate and high load growth areas within the AEP TCC Western Region.

One of the improvements recommended by ERCOT is the construction of a new 138 kV transmission line from the AEP TCC Uvalde substation to the CPS Energy system (either the Castroville substation or the Texas Research substation). This transmission line will relieve thermal overloading of a San Miguel 345/138 kV autotransformer, the San Miguel bus tie, the MEC Moore to MEC Downie 138 kV transmission line, the MEC Pearson 138/69 kV autotransformer, and the MEC Hondo Creek 138/69 kV autotransformer.

AEP TCC and MEC submitted the “Western Region Transmission and Distribution Study” (Western Region Study) for review to the ERCOT South Regional Planning Group (South RPG) on January 18, 2006. The Western Region Study identified numerous single contingency events within the AEP TCC Western Region that result in transmission facility overloads and under-voltage conditions. Specific to the need for this project, the study indicated that the 138 kV transmission facilities from the MEC Moore substation to the AEP TCC Uvalde substation experience thermal overloading in the majority of the single contingency events. The MEC Moore to MEC Downie to AEP TCC Uvalde 138 kV transmission line is part of the original AEP TCC Pleasanton to AEP TCC Uvalde 138 kV transmission line constructed in 1951 with 336 ACSR. This transmission line is the primary transmission path for power transfer from the San Antonio area to Uvalde.

The AEP TCC Pleasanton to AEP TCC Uvalde 138 kV transmission line also supports the underlying 69 kV transmission system between Pleasanton and Uvalde. The Western Region Study identified several single contingency events that cause the transmission facilities from MEC Moore to MEC Downie to experience thermal overloading as high as 134% of emergency line capacity. The same single contingency events also cause considerable underlying 69 kV transmission facilities to experience thermal overloading as high as 191% of emergency line capacity.

The ERCOT independent review of the Western Region Study was completed on June 2, 2006. ERCOT’s review implemented necessary transmission facility additions in a staged

approach to address each problem found in the previously mentioned AEP TCC and MEC submitted study.

Results of the ERCOT independent review after several of the other improvements necessary were modeled indicated that the proposed 138 kV line from the AEP TCC Uvalde substation to the CPS Energy system is specifically required to relieve thermal overloading of five transmission facilities due to single contingency events. The five overloaded transmission facilities are the MEC Moore to MEC Downie 138 kV transmission line, a San Miguel 345/138 kV autotransformer, the San Miguel bus tie, the MEC Pearson 138/69 kV autotransformer, and the MEC Hondo Creek 138/69 kV autotransformer. ERCOT concluded from its independent review that the 138 kV line from the AEP TCC Uvalde substation to the CPS Energy system was one of several improvements in the area necessary for the reliability of the ERCOT bulk electric system. On August 14, 2006, ERCOT issued a letter to AEP TCC and MEC indicating that the ERCOT Board of Directors recommended the AEP TCC Uvalde to CPS Energy 138 kV transmission line. The letter stated that this project, in addition to several other transmission improvements, is “needed to support the safety and reliability of the ERCOT Region transmission system.”

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