



April 8, 2003

**Re: ERCOT Staff Support for McCamey Area Transmission Improvement Plan**

ERCOT endeavors to achieve a coordinated transmission planning process through the regional planning efforts. This process ensures that the ERCOT and NERC planning standards are met, that the proposed project addresses TDSP planning criteria requirements, and that all areas of concern are addressed with the good of the overall region in mind. With the limited capital resources to build new transmission projects and recognizing that these costs will ultimately be borne by the transmission customers, ERCOT staff believes due diligence must be exercised in choosing the best possible plan.

At the January 30, 2003 open meeting of the West Regional Planning Group, representatives from the Lower Colorado River Authority (LCRA) and American Electric Power (AEP) presented a recommendation for transmission system improvements to be completed by year 2008 capable of accommodating up to 2,000 MW of renewable generation in the McCamey area. The scope of this plan includes the following:

- Provide transmission capacity up to 1,000 MW by upgrading existing 138 kV system and utilizing special protection schemes at an estimated cost of \$157,095,000. This effort is already underway.
- Increase transmission capacity from 1,000 MW to 1,500 MW by constructing a McCamey-Twin Buttes 345 kV line and related facilities at an estimated incremental cost of \$90,300,000 (total \$247,395,000).
- Increase transmission capacity from 1,500 MW to 2,000 MW by constructing a McCamey-Odessa 345 kV line and related facilities at an estimated incremental cost of \$65,400,000 (total \$312,795,000).

These cost estimates reflect the benefit of further review and updating since the January meeting. They are functional estimates based on typical project costs, which are subject to change and should not be presumed to capture the exact amount or timing of projected transmission capital expenditures.

The West Regional Planning Group requested written comments from interested parties on the alternatives above by February 21, 2003 several comments made direct reference to the cost estimates presented at the January meeting. ERCOT staff has reviewed the studies and provides herewith a recommendation on the expansion of the McCamey area transmission system.

**Request for Comments**

ERCOT staff has reviewed the transmission needs in the McCamey area and believes additional transmission to support the increasing levels of renewable resource interconnection requests in the area justifies additional transmission capacity. Specific steps on incremental additions are outlined in the recommendation section below.

ERCOT staff is requesting written comments from interested parties on their recommendation by April 17, 2003. Please submit them in electronic format via email to [kdonohoo@ercot.com](mailto:kdonohoo@ercot.com) and [bbojorquez@ercot.com](mailto:bbojorquez@ercot.com).

## **Background**

The McCamey area has two 138 kV paths that provide generation an interconnection to the bulk 345 kV transmission system. One path is north through Crane to the Odessa area and the other is east through Big Lake to San Angelo. At present, only one 138 kV line connecting the Rio Pecos substation to the Crane substation exists, and this circuit is currently the limiting element during export of wind generation from the McCamey area. There is also only one existing 138 kV line that connects the North McCamey substation to the Big Lake substation, which would otherwise constrain the export of wind energy. In order to accommodate existing wind farms, proposed projects with interconnection agreements, and potential projects without interconnection agreements, the West Regional Planning Group has studied several alternatives for transmission improvements and bulk transmission paths necessary to transport the surplus generation from the local network to the two 345 kV corridors at Odessa and at San Angelo. The study findings meet the requirements in the Transmission Planning Reliability Criteria and Standards set forth by AEP Texas North Company (TNC – the local transmission service provider), Electric Reliability Council of Texas (ERCOT), and the North American Electric Reliability Council (NERC).

## **Summary of Interconnection Requests**

ERCOT has established a three step process for generation interconnection requests. The first step is the ‘**Security Screening Study**’ where ERCOT staff performs steady state power flow and system security screening studies for the requested project. Once the generator owner is comfortable with the location, a ‘**Full Interconnection Study**’ is requested to be performed by the TDSP and ERCOT staff. Full interconnection studies involve detailed steady state and dynamic transfer analyses, system protection analysis and a study of the necessary interconnection facilities. The final step before any interconnection construction starts is the signing of the ‘**Interconnection Agreement**’ between the generator owner and the TDSP. The following renewable generation projects have completed interconnection agreements with transmission owners in the McCamey area:

Southwest Mesa	1999	75 MW
Indian Mesa	2001	80 MW
Woodward Mt.	2001	160 MW
King Mt.	2001	280 MW
Desert Sky	2001	160 MW
<b>TOTAL</b>	<b>2003</b>	<b>755 MW</b>

## **Recommendation:**

ERCOT staff recognizes the demand for transmission capacity has not exceeded the 1,000 MW threshold for signed interconnection agreements required to build new 345 kV circuits; however, a high level of interest in siting additional wind generation in this area has been documented and discussed. The addition of the new 345 kV circuits to this area would give generation owners a clear signal as to the best location to build (with respect to available transmission). We can expect more generation to be built in this area because the market has already proven it to be a viable area for wind development notwithstanding the lack of existing transmission. Therefore, ERCOT staff has determined the best plan is to continue with 138 kV upgrades needed to provide 1,000 MW of transmission capacity, but do so in a way that preserves the ability to shift to the 345 kV additions in the McCamey area if additional generation completes generation interconnection agreements. Generation additions in this area will be limited until additional transmission is constructed. Specifically:

- Transmission providers should complete the additions to provide transmission capacity up to 1,000 MW by upgrading the existing 138 kV system and utilizing special protection schemes at an estimated cost of \$157,095,000. At the same time, transmission providers should perform routing analysis and conduct open houses to prepare for a new McCamey-Twin Buttes 345 kV line. This work will be completed within six to nine months. Executed interconnect agreements will be needed to proceed with line certification and construction.
- When generation interconnect agreements are 10% greater than 1,000 MW, transmission providers should increase transmission capacity up to 1,500 MW by constructing the McCamey-Twin Buttes 345 kV line and related facilities at an estimated incremental cost of \$90,300,000 (total \$247,395,000). Following the notice to build to the 1,500 MW capacity level, transmission providers should perform routing analysis and conduct open houses to prepare for a new McCamey-Odessa 345 kV line. This work will be completed within six to nine months. Again, executed interconnect agreements will be needed to proceed with line certification and construction.
- When generation interconnect agreements are 10% greater than 1,500 MW, increase transmission capacity up to 2,000 MW by constructing a McCamey-Odessa 345 kV line and related facilities at an estimated incremental cost of \$65,400,000 (total \$312,795,000).

### **Next Steps**

These projects are vital to the continued reliability of the bulk electric system in West Texas and accommodation of the increasing renewable generation supply in ERCOT. ERCOT staff looks forward to parties' comments on this recommendation. We will summarize all of the feedback received and provide a final report to TAC and the Board of Directors at their May meeting.

Should you have any questions please call me at any time.

Sincerely,

William Bojorquez, P.E.