



Texas Genco

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December 2, 2005

Ms. Karen Hill, MC-206
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Subject: Comments on TCEQ's East Texas Utility Concepts
(Rule Project No. 2006-002-117-EN)
Texas Genco II, LP

Dear Ms. Hill:

Texas Genco II, LP, (Texas Genco) based in Houston, Texas, is one of the largest wholesale electric power generating companies in the United States, providing safe, reliable and competitively priced electricity. Texas Genco sells electric generation capacity, energy and ancillary services in the ERCOT market, which is the largest power market in the State of Texas. We own in excess of 10,000 MW of gross operating generation capacity from 8 electric generating stations in Southeast Texas. Texas Genco facilities could be significantly impacted by potential NOx reduction requirements that develop from the East Texas Electric Generating Facilities (ETXEGF) process (Rule Project No. 2006-002-117-EN). Consequently, Texas Genco offers the following comments:

Texas Genco has been a leader in improving air quality in the region. Texas Genco has a long history of NOx reduction programs, dating back to the early 1970s. More recently, we have installed approximately \$700 million in NOx controls on our facilities in the Houston/Galveston/Brazoria (HGB) and East Texas areas. Since 1998, we have reduced our overall NOx emissions by approximately 75%, including nearly 90% in the HGB area. We have installed selective catalytic reduction (SCR) systems on 7 electric generating units in the HGB area and our W. A. Parish Units 5-8 are the lowest NOx emitting coal-fired units in the country. Our generating fleet also includes the lignite-fired Limestone Electric Generating Station located in Limestone County. The Limestone Station was retrofitted with advanced low-NOx burner and overfire-air systems between 2000 and 2002, resulting in a 50% reduction in NOx emissions, equivalent to approximately 11,000 tpy. Even though emissions from the Limestone Station have been reduced dramatically, this facility would be most affected by revisions to Chapter 117 rules.

The TCEQ has developed several emission control concepts for Electric Generating Units (EGUs) in the East Texas attainment area. Option 1 applies the emission specifications for the originally adopted HGB 90% NOx Reduction rules. Option 2 applies the emission specifications for the existing HGB 80% NOx Reduction rules. Option 3 would implement NOx reductions through a cap and trade system. Texas Genco is concerned that the TCEQ has initiated the Dallas-Fort Worth (DFW) attainment demonstration planning process considering only reductions from EGUs and has not included reductions from other source categories in the East Texas areas, some of which have not made the significant reductions that EGUs have already achieved. In addition, it does not appear that the TCEQ has considered more extensive ozone precursor reductions from within the DFW

nonattainment area. Such reductions are likely to be much more effective in lowering ozone levels in the DFW area than NO_x reductions by distant East Texas power plants.

Texas Genco is also concerned that the TCEQ's proposal inverts the normal SIP control strategy evaluation process. TCEQ's proposal has singled out some of the better-controlled NO_x sources for even further reductions, without consideration of any contributions from other source categories that have not yet been effectively controlled. By modeling an ozone effect of these unrealistic EGU reductions in complete isolation from a larger control strategy, the proposal likely portrays a more dramatic outcome than that which would otherwise be shown. The TCEQ's demonstration planning process should begin with, and include, less dramatic NO_x reduction scenarios for EGUs. Such scenarios should be evaluated for air quality benefits and cost impacts, together with similar stepwise reductions in other segments of the inventory, prior to consideration of extreme control strategies such as Options 1 and 2. The Option 1 level controls originally adopted for the HGB area were ultimately determined not to be an effective control strategy after significant, additional air quality studies were performed. As was firmly established in the legal and regulatory process that followed the initial HGB rule adoption in 2000, the TCEQ must expend the time and resources necessary to insure that scientifically sound and cost-effective alternatives are identified and thoroughly evaluated.

Option 1 and 2 reduction levels will require SCR technology on virtually all EGUs in the East Texas attainment area. As the many TCEQ staff that have periodically toured our W. A. Parish Station are undoubtedly aware, SCR systems of this magnitude present a significant engineering challenge on gas- and coal-fired EGUs. SCRs are unproven on lignite-fired units, and we have serious concerns regarding the long-term performance of SCR on high-ash fuels such as Texas lignite. It is important to note that the SCRs operating on our W. A. Parish coal-fired units have experienced significant and unexpected ash deposition that has impacted SCR performance. While we have implemented extensive design and operational improvements to reduce ash deposition in the SCRs, we do not know whether our efforts will prove entirely successful. Lignite, which has an ash loading approximately 3-5 times greater than the western coal used at W. A. Parish, will be a much more difficult fuel for effective NO_x control using SCR. Consequently, we do not believe the NO_x specifications included in Options 1 and 2 are achievable with lignite.

As was learned in 2000, TCEQ should not arbitrarily impose capital-intensive controls purely for the sake of logging and crediting precursor reductions. The capital and operating cost of the SCRs required by Options 1 and 2 would be dramatic, both on an absolute basis and relative to the costs of precursor reductions elsewhere. As mentioned previously, Texas Genco has installed SCR on 7 gas and coal-fired units during the 2000-2005 time frame. Our actual SCR installation costs averaged \$63/kW for gas-fired units and \$153/kW for coal-fired units. The SCR on one of the coal-fired units, W. A. Parish Unit 8, had an installed cost of \$200/kW, due to the difficulty of the retrofit. We anticipate that retrofitting SCRs on Limestone Units 1 and 2 would cost in excess of this value, or greater than \$360 million for the 1800MW plant. The higher costs at Limestone are attributed to the greater furnace and flue gas volumes and ash loading associated with lignite, the difficulty of the retrofit, and the escalation of material and labor costs since the W. A. Parish project. The TCEQ needs to base any studies on the cost-effectiveness of emission controls for EGUs on recent, representative control costs such as those provided above. Furthermore, the TCEQ should consider evaluating the cost-effectiveness of emission controls on a \$/ppb ozone reduced (in DFW) basis, rather than the customary \$/ton NO_x removed. Such an evaluation is reasonable due the relative inefficiency of rural power plant NO_x plumes in forming ozone.

Several years ago, the TCEQ used aircraft measurements to assess the ozone forming potential of NO_x plumes in several areas in Houston. Specifically, plumes were studied from the relatively rural

W. A. Parish Station in Fort Bend County, as well as urban and Houston Ship Channel locations. The TCEQ ultimately determined that NOx emissions from rural power plant NOx sources have relatively low ozone formation potential compared to urban sources of NOx. Given this fact, it does not seem reasonable to consider additional controls for distant East Texas power plants until all reduction options for ozone precursors from within the DFW nonattainment area, as well as less well-controlled sources in East Texas, have been thoroughly explored.

Another issue that needs to be considered by the TCEQ is the schedule for attainment in DFW. Assuming additional NOx controls for EGUs are deemed necessary, there is simply insufficient time to design and install SCR controls on all units in East Texas following rule adoption tentatively scheduled for Fall 2006 and the controls implementation deadline of Spring 2009. Furthermore, this situation will likely be aggravated by the anticipated shortage of skilled labor to construct SCRs on all the EGUs in East Texas; in part due to the simultaneous labor demands caused by implementation of the federal CAIR rules.

In summary, Texas Genco will gladly work with the TCEQ to review and, if appropriate, refine the existing NOx control rules for the East Texas region. However, Texas Genco is concerned that TCEQ has focused on an EGU NOx control strategy that does not effectively advance the air quality goals for the DFW ozone nonattainment areas, may not be achievable, particularly for lignite-fired units, and will result in dramatic capital expenditures without commensurate ozone benefits.

Texas Genco appreciates the opportunity to provide input on the TCEQ's concepts and we welcome further dialog on these issues. If you have any questions or desire additional information, please give me a call at (713) 795-6024 or email me at bcarmine@txgenco.com.

Sincerely,



Ben C. Carmine, P.E.
Director, Environmental Operations
Texas Genco II, LP