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December 2, 2005

Ms. Karen Hill  
Air Quality Planning and Implementation Division  
Texas Commission on Environmental Quality  
MC - 206  
P. O. Box 13087  
Austin, Texas 78711

Re: Comments Regarding the East Texas Electric Generating Facility Rules (Rule Log No. 2006-002-117-EN)

Dear Ms. Hill:

The Gulf Coast Lignite Coalition (GCLC) submits this letter to provide comments on TCEQ's conceptual proposal to require further NO<sub>x</sub> reductions from East Texas Electric Generating Units (EGUs). The GCLC appreciates the opportunity to provide input in this early stage of the process, so that the TCEQ can be made aware of the significant legal and technical problems associated with the contemplated requirements.

We are hopeful that we can reach consensus on a number of the issues raised below, so the agency can move away from this conceptual strategy and make the best use of its resources focusing on other control strategies that have a more realistic potential to bring the DFW and Houston-Galveston areas into attainment for ozone. The GCLC supports the letters of the Texas Mining and Reclamation Association (TMRA); and the Association of Electric Companies of Texas (AECT).

## **INTRODUCTION**

The GCLC is comprised of owners and operators of lignite and coal-fired power plants and surface mines within the states of Texas, Louisiana and Mississippi. Coalition members include: American Electric Power Company, Texas Westmoreland Coal Company, Texas Genco, The North American Coal Corporation, San Miguel Electric Cooperative, Inc., TXU, Walnut Creek Mining Company, Westmoreland Coal Company, and others. The GCLC represents the vast majority of the lignite mining and lignite-based power generation industry in Texas, Louisiana and Mississippi.

GCLC Members and legal counsel attended the Electric Generating Facility Stakeholder Meeting that was held on Friday, November 18, 2005, and alerted the TCEQ to the GCLC's concern that the Staff's conceptual proposal would present a direct threat to the continued use of lignite fuel. The comments set out below follow-up on the comments made at the stakeholder meeting and provide the details necessary to put the TCEQ on notice that the GCLC does not believe the TCEQ will have the legal, technical, or economic justification to support a rule that seeks NOx emission reductions from East Texas EGUs beyond the reductions that have already been accomplished and those that are required by federal law.

### SUMMARY OF COMMENTS

1. There is insufficient technical information to support TCEQ's claims of benefits, in terms of ozone reduction in DFW, from further reducing EGU NOx emissions below reductions already contemplated by federal law.
2. Even if additional EGU NOx reductions could provide some marginal benefit to the DFW area, East Texas EGUs have already achieved significant reductions at great cost and to require additional reductions now would be inequitable and uneconomic.
3. The NOx emission limits that TCEQ are considering have not been proven to be achievable by lignite-fired EGUs.
4. Due to the lack of proven technology to achieve the proposed NOx emission limits at lignite-fired EGUs, the only reliable compliance option will be fuel-switching, which will adversely impact electric reliability and affordability and will have devastating economic consequences in Texas.
5. Given the disparity between the claimed benefits to be achieved from the contemplated emission limits and the economic impacts of imposing those limits, the TCEQ should not proceed with this component of the SIP rulemaking because it will not be able to discharge its obligations to state a reasoned justification for the rule and will not be able to fully assess the fiscal implications of such a rule.

### DISCUSSION

- 1. There is insufficient technical information to support TCEQ's claims of benefits, in terms of ozone reduction in DFW, from further reducing EGU NOx emissions below reductions already contemplated by federal law.**

As set out at length in AECT's comments, there does not appear to be an adequate technical foundation on which to base the claims that further NOx emission reductions will result in meaningful reductions of ozone in the DFW nonattainment area. The GCLC fully supports the technical and legal points made in AECT's comment on this issue and incorporates them in full, but will not restate them here.

**2. Even if additional EGU NOx reductions could provide some marginal benefit to the DFW area, East Texas EGUs have already achieved significant reductions at great cost and to require additional reductions now would be inequitable and uneconomic.**

As noted above, the contribution of East Texas to the DFW attainment problems has not been established. Even if there was a sufficient contribution coming from East Texas to have a meaningful impact on DFW attainment, which there is not, East Texas EGUs have already done their fair share and will continue to do so under the Clean Air Interstate Rule (CAIR).

The contribution of East Texas EGUs to the NOx reduction efforts in Texas is clearly established in that East Texas EGUs have already reduced NOx emissions 50% under the Chapter 117 rules and, thus, contributed to Texas having the 6<sup>th</sup> lowest NOx emission rate (in lb/MMBtu) in the Nation (among those states generating electricity from coal). These reductions were accomplished while no other NOx source type (other than cement kilns) has been subject to reductions in East Texas, even though 60% of the point sources in East Texas are not EGUs. In other words, the technically feasible reductions have already been made by the EGU industry. Based solely on existing requirements and initiatives, power plants in Texas have spent over \$1 billion as of May 2005 to comply with the current emission limits.

For the TCEQ to embark on a rulemaking to seek further reductions from East Texas EGUs without first exhausting all other available avenues for ozone reduction is bad science and fundamentally inequitable. Moreover, in light of the fact that EPA has just completed the most comprehensive transport-driven and NOx-reducing air quality regulation in history<sup>1</sup>, it is particularly inappropriate for TCEQ to pursue emission reductions that go beyond the requirements of that federal law on a much more expedited timeframe.

**3. The NOx emission limits that TCEQ are considering have not been proven to be achievable by lignite-fired EGUs.**

As fully discussed in AECT's comments, there is no commercially available and proven technology that a lignite unit could install to achieve a NOx emission rate of .03 lb/MMBtu. As was discussed in the AECT comments, there is no demonstrated technology the use of which would allow a lignite-fired EGU to consistently maintain a NOx emission rate of .05lb/MMBtu. This includes the installation of Selective Catalytic Reduction (SCR) pollution control devices. As demonstrated below, SCRs are not yet commercially operational on lignite-fired generating units and there are several compelling technical reasons to support that they will not be feasible for use as retrofits on existing lignite-fired units for several years.

Generally, SCR devices are known to lower NOx emissions on some fuel types. These units use a catalyst and ammonia as reducing agents to control NOx. The catalyst, which is a very important component of SCR technology, is a metal oxide. Lignite presents some unique challenges for SCR technology---especially its propensity to form ash. The SCR technology will not work effectively when retrofitted on existing lignite-fired units because lignite has ash-forming components that, upon combustion, produce significant quantities of ash. Technically

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<sup>1</sup> The Clean Air Interstate Rule, May 12, 2005, 70 FR 25162.

speaking, the ash accumulates on the emission-reducing catalyst, thus prohibiting the control of NO<sub>x</sub> and creating operational and reliability problems. Moreover, even if SCR retrofits could be successfully demonstrated on lignite units, such technology would be extraordinarily expensive and, in some situations, might not be physically possible given the existing footprint of the EGU and the limited space available for installation..

Steve Benson et al., recently documented the ash-forming phenomena of lignite-fired EGUs that use SCR catalysts.<sup>2</sup> His study (Attachment 1) examined the ash forming properties of lignite and subbituminous coals, and results demonstrated that both types of coal have significant accumulations of ash on the catalyst. He concluded that such materials reacted with SO<sub>2</sub>/SO<sub>3</sub> in the flue gas and masked or “blinded” the catalyst. He also noted that the small size of the ash forming particles, as well as the reaction with sulfur compounds, caused formed sulfates, which subsequently formed more ash particles. In plain English, such study confirms lignite-fired EGUs equipped with SCR technology will not effectively reduce NO<sub>x</sub> emissions, including the stringent and unjustified NO<sub>x</sub> limits contemplated by TCEQ.

**4. Due to the lack of proven technology to achieve the proposed NO<sub>x</sub> emission limits at lignite-fired EGUs, the only reliable compliance option will be fuel-switching, which will adversely impact electric reliability and affordability and will have devastating economic consequences in Texas.**

Because SCRs are neither feasible nor cost effective as retrofits at existing lignite-fired units, even the higher of the two TCEQ-contemplated emission rates (.05 .lb/MMBtu) would force lignite-fired EGUs to switch from lignite to another type of fuel. As support for this example, the GCLC reminds TCEQ Staff that other NO<sub>x</sub> reduction requirements driven by federal rules have already caused fuel switching, plant closures, job losses and tax revenue decreases. Between 1989 and 2001, the percent of non-lignite coal burned at plants in Texas rose from 39% to 53%, while the percent of Texas lignite coal burned decreased from 59% to 46%. It is important to point out that EPA, in the context of its recent CAIR/CAMR rulemaking worked diligently to structure those rules to ensure that fuel switching was not driven by their rulemaking.<sup>3</sup> This reflects a fundamental tenant of the current Administration to maintain fuel diversity and not displace fuel types in the promulgation of air quality regulations.

In states such as Texas, where all coal-fired capacity already meets the applicable Federal New Source Performance Standards (“NSPS”) for NO<sub>x</sub>, any additional state-driven reductions will be punitive and will otherwise drive marginal emission reductions through further displacement of lignite by other coal types that could well lead to the end of the Texas lignite industry.

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<sup>2</sup> Benson, S.A., J.D. Laumb, C.R. Crocker, and J.H. Pavlish. 2005. SCR catalyst performance in flue gases derived from subbituminous and lignite coals. *Fuel Processing Technology* 86: 577-613. (Attachment 1)

<sup>3</sup> See EPA Response to Comment, pp. 167. Clean Air Interstate Rule; Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Interstate Air Quality Rule); Proposed Rule(69 FR 4566; January 30, 2004).

The adverse impacts of fuel switching on Texas come in many forms, including:

- the increased price of electricity (retrofit capital costs plus increased fuel costs);
- the adverse impact on energy independence, diversity, and reliability; and
- adverse impact on the Texas economy associated with shutting down lignite-fired EGUs and lignite mines across the State.

a. Increased Price of Electricity

Fuel switching causes higher electricity prices due to the EGUs' retrofitting expenditures and higher replacement fuel costs. AECT's comment adequately discusses the extensive capital expenditures associated with additional controls and retrofits, so the GCLC will not repeat those numbers here. The focus of this comment will be on the particularly tight market conditions that could result if massive fuel switching is triggered.

It is safe to predict that fuel costs will skyrocket if lignite is no longer able to be used for generation for a number of reasons including: (1) increased demand for Western coal, which is already in high demand relative to supply; (2) increased transportation costs associated with already congested railways between Western coal resources and Texas, and (3) a severely undermined bargaining position for Texas generating companies who are no longer would have the possibility of using lignite as a bargaining tool.

It should not go without notice that increases in energy prices that result from fuel switching will have its most harsh impact on the elderly on fixed incomes, the low income, and on development efforts in rural areas that are at a competitive disadvantage as compared to more economically diversified urban areas. The TCEQ should be mindful of such significant downstream implications before it takes steps to over-regulate a single source type without first exhausting all other avenues for relief.

b. Adverse Impact on Energy Independence, Diversity, and Reliability.

Every fuel source used to generate electricity is now confronted with challenges, but none more so than coal. According to the Energy Information Administration (EIA), electricity consumption is growing strongly and will increase 54 percent by 2025. Maintaining diverse electrical generation options will be critical to powering the 21st century, and low-cost, reliable electricity results, in part, from our ability to utilize a variety of readily available energy resources – coal, nuclear energy, natural gas, hydropower, and other renewable energy resources.

A diverse mix of generation technologies, especially coal and lignite-fired boilers, protects consumers from contingencies such as fuel unavailability, price fluctuations, and changes in regulatory practices. The use of lignite is important for Texas and the nation in a number of respects, including the ability to maintain energy independence, diversity, and reliability. Moreover, given that Western coal deliveries are already severely strained, it is very foreseeable that supply shortages and transportation disruptions will not only affect fuel cost, but lead to additional reliability problems.

The importance of Texas lignite was very recently recognized on October 27, 2005, with the Governor's issuance of Executive Order RP49 (Attachment 2), which encourages the diversity of Texas' energy supply, including the use of Texas' natural resource, which includes lignite.<sup>4</sup> The GCLC believes that any rule, including potential revisions to Chapter 117, that require additional NOx reductions over those already required by federal rule would impose additional regulatory burdens that are antithetical to the Governor's directive in RP49.

The following statistics demonstrate the significant role that lignite plays in the Texas and national energy profile: Coal, including lignite, accounts for almost 40% of all electricity generated in Texas, and Texas-mined lignite alone provides 25% of the electricity generated in Texas each year. Texas generates more electricity than any other state. The Energy Information Administration (EIA) reports that Texas generates 390.3 Million Megawatthours (MMWh) of electricity. By comparison, the EIA reports the generation rates for other states, including Florida (218.1 MMWh); Pennsylvania (214.7 MMWh); California (194.8 MMWh) and New York (138.0), all of which are significantly less than Texas.<sup>5</sup> Texas is the largest coal consumer in the nation, and is the 5<sup>th</sup> largest coal producer in the nation (44.7 million tons in 2002). Approximately 66% of the nation's lignite is mined in Texas, which has the largest reserve of lignite in the U.S. -- at 9.95 billion tons. These reserves represent 200 years of supply at current production and use rates. The abundance of Texas Lignite and the significant amount of energy that it is instrumental in generating render it an essential domestic fuel source that effectively serves to minimize the United States' dependence on imported fuel.

Lignite's contribution to fuel diversity and affordability is particularly important considering the recent and continuing volatility and unprecedented high price of natural gas. Coal prices have been stable as compared to gas prices. Coal is by far the cheapest source per million Btu for generating power, averaging less than half the price of petroleum and natural gas. In 2003, for example, according to the Department of Energy Information Agency, National Mining Association, and the National Coal Council, the relative cost of coal to generate electricity was about \$1.28 per million Btu compared to natural gas which cost \$5.60, petroleum which cost \$4.61 and nuclear which cost \$1.80.

c. Adverse Impact on the Texas Economy

The TCEQ's premature and unilateral attempt to reduce NOx emissions from East Texas EGUs in a manner that will drive fuel switching will be the end of the Texas lignite mining industry and will have devastating effects on the 20 plus Texas counties where coal mining and coal-fired generating units directly employ more than 11,195 Texans<sup>6</sup> and, according to TMRA, indirectly employing over 100,000 Texans. According to the Perryman Group Report (Attachment 3)d), the total economic impact of lignite mining and generation is estimated to be \$10.498 billion in

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<sup>4</sup> Governor Rick Perry, Executive Order RP49, Issued October 27, 2005; 30 TexReg 7791, Nov. 25, 2005. (Attachment 2)

<sup>5</sup> Energy Information Administration, *U.S. Electric Power Industry Net Generation by State, 2004*.

<sup>6</sup> M. Ray Perryman, PhD. *The Economic Impact of Coal Mining and Coal-Fired Electric Generation Activity on Texas and the East Texas Region*, The Perryman Group, April 2004. [Attachment 3]

annual Total Expenditures; \$3.516 billion in annual Gross Product; \$2.081 billion in annual Personal Income, and \$.584 billion in annual Retail Sales.

Many of the economic benefits from the lignite mining and generation industries accrue to Texas' rural areas where lignite contributes a significant portion of economic activity. Some rural counties in Texas with lignite mining and power generation facilities depend on these operations for more than 50% of their tax revenue. According to the Perryman Group, in one East Texas County (Freestone), lignite mining is responsible for about 72.2% of export-oriented activity.

**5. Given the disparity between the claimed benefits to be achieved from the contemplated emission limits and the economic impacts of imposing those limits, the TCEQ should not proceed with this component of the SIP rulemaking because it will not be able to discharge its obligations to state a reasoned justification for the rule and will not be able to fully assess the fiscal implications of such a rule.**

It is patently clear from the information discussed above, that the potential costs resulting from the additional NOx reductions contemplated by TCEQ could never be outweighed by the relatively minor benefits, if any, that will result from the reductions. Even if the contemplated reductions could be characterized as the "only hope" for DFW to reach attainment, which they cannot, it is questionable whether even that benefit could outweigh the devastating impacts discussed above.

As the TCEQ contemplates whether to proceed with the contemplated changes to Chapter 117, the TCEQ should keep in mind its ultimate charge under the Texas Clean Air Act which is to take into consideration:

- (1) the character and degree of injury to or interference with the public's health and physical property;*
- (2) the source's social and economic value;*
- (3) the question of priority of location in the area involved; and*
- (4) the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the source.<sup>7</sup>*

As the Commission is also aware, it has extensive requirements under the Texas Government Code to promulgate regulations only after a "reasoned justification" can be established in support of the rule and the fiscal impacts of the rule are fully detailed and justified, including the specific impacts on local governments.<sup>8</sup>

We respectfully submit that the TCEQ should fully assess whether there is any hope that these obligations will be satisfied before it consumes any more resources on the contemplated changes to Chapter 117. It will not benefit the State of Texas, the DFW area, or the citizens of East Texas for the TCEQ to build into the DFW 8-Hour Ozone attainment plan any reliance upon NOx reductions from East Texas EGUs when it is more likely than not that any such reductions will not survive legal challenge for all the reasons set out above.

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<sup>7</sup> See TEX. HEALTH & SAFETY CODE §382.024.

<sup>8</sup> See, e.g., TEX. GOV'T CODE §§ 2001.0225(c)(e) & 2001.024(4)(A)

## CONCLUSION

The GCLC understands the difficult job the TCEQ has on its hands as it tries to solve the 8-Hour Ozone nonattainment dilemma in Texas. As demonstrated by the significant reductions already achieved by GCLC members, the GCLC is committed to contributing to the State's overall efforts to reduce emissions and protect human health and the environment. Nevertheless, the GCLC is fundamentally opposed to the development of public policies, such as the contemplated changes to Chapter 117, which would continue to burden one region and one industry before fully exhausting potential avenues for emission reductions from other sources.

We hope the compelling legal, technical, and policy reasons set out above provide the TCEQ with a more than adequate understanding of why it should not proceed any further with the contemplated rulemaking. The Gulf Coast Lignite Coalition appreciates the opportunity to state their position in this matter and is available to address Staff's questions or comments.

Sincerely,

Michael J. Nasi  
Counsel for the Gulf Coast Lignite Coalition

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